

# Capacitors Catalog

**CHIP ALUMINUM ELECTROLYTIC CAPACITORS**

**RADIAL LEAD ALUMINUM ELECTROLYTIC CAPACITORS**

**SNAP-IN ALUMINUM ELECTROLYTIC CAPACITORS**



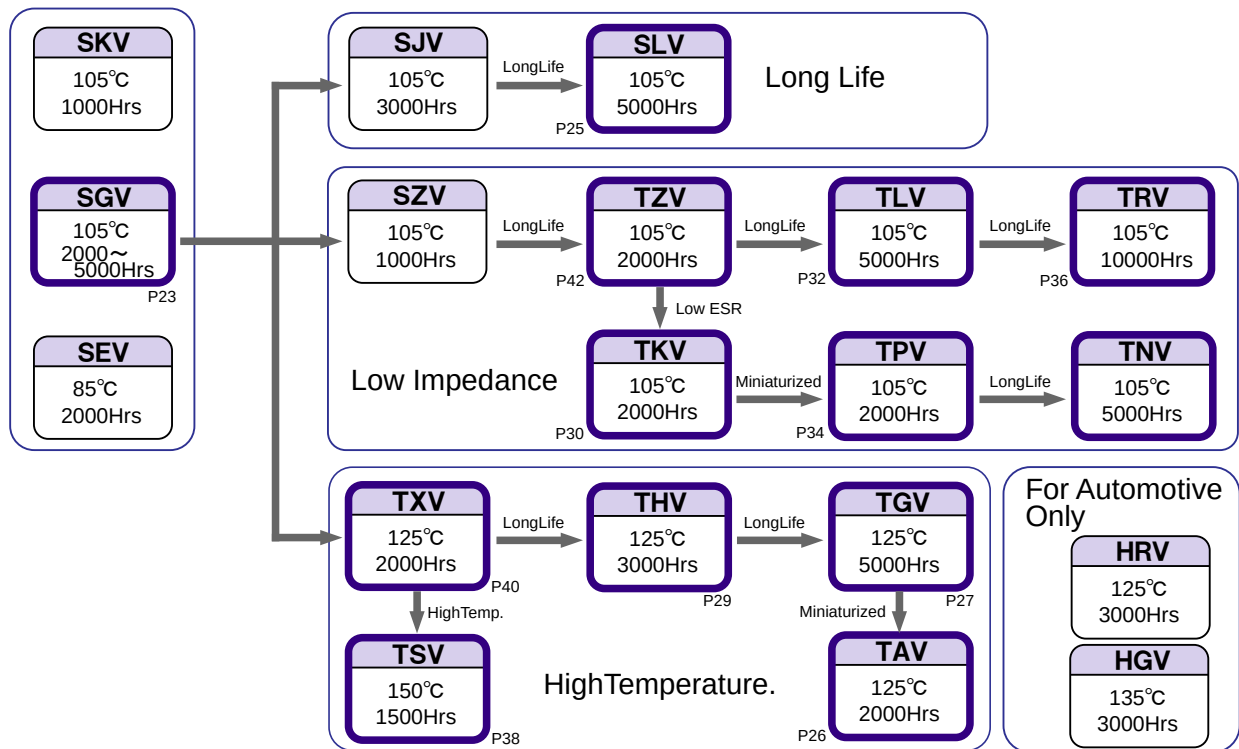
**◆品質マネジメントシステム認証取得 Quality Management System Certificates**
**アルミニウム電解コンデンサ/Aluminum Electrolytic Capacitors**

| 対象工場<br>Factories                            | 取得日<br>Date of Registration | 認定名<br>Standard | 認定番号<br>Certificate Number |
|----------------------------------------------|-----------------------------|-----------------|----------------------------|
| ルビコン株式会社<br>本社工場<br>Rubycon Corporation      | 2018/09/13                  | IATF16949:2016  | JQA-AUO139-1               |
|                                              | 2018/11/14                  | ISO9001:2015    | JMI-0273                   |
| 西部ルビコン株式会社<br>Seibu Rubycon Inc.             | 2018/09/13                  | IATF16949:2016  | JQA-AUO139-3               |
|                                              | 2018/11/14                  | ISO9001:2015    | JMI-0273                   |
| 福島ルビコン株式会社<br>Fukushima Rubycon Inc.         | 2018/09/13                  | IATF16949:2016  | JQA-AUO139-2               |
|                                              | 2018/11/14                  | ISO9001:2015    | JMI-0273                   |
| 秋田ルビコン株式会社<br>Akita Rubycon Inc.             | 2018/06/29                  | ISO9001:2015    | JQA-2644                   |
|                                              | 2018/12/21                  | IATF16949:2016  | JQA-AU0262                 |
| ルビコンインドネシア<br>株式会社<br>P.T. Rubycon Indonesia | 2018/06/25                  | ISO9001:2015    | 98-2-0799                  |
|                                              | 2018/07/13                  | IATF16949:2016  | 12 111 50347 TMS           |

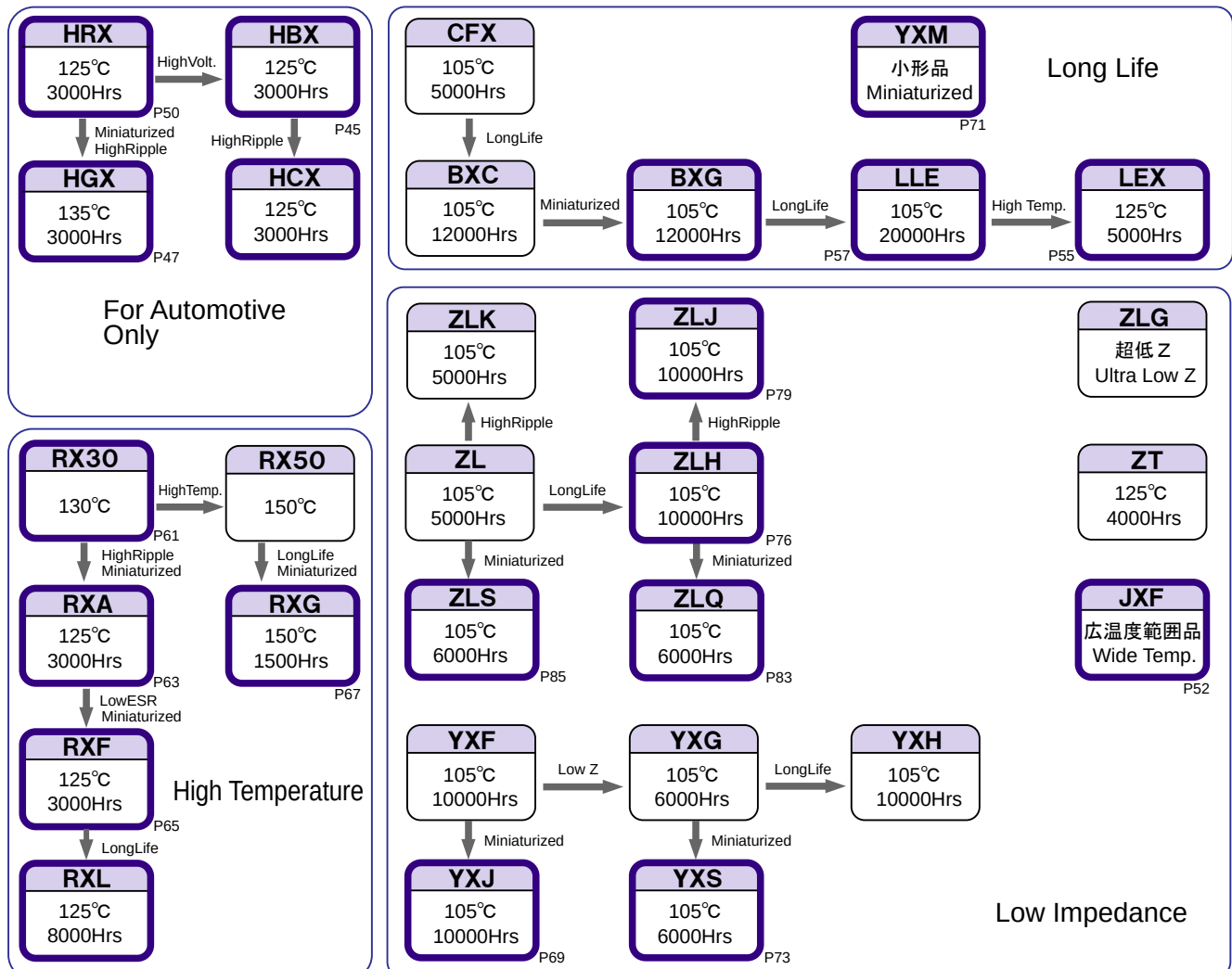
**◆環境マネジメントシステム認証取得 Environmental Management System Certificates**
**アルミニウム電解コンデンサ/Aluminum Electrolytic Capacitors**

| 対象工場<br>Factories                            | 取得日<br>Date of Registration | 認定名<br>Standard | 認定番号<br>Certificate Number |
|----------------------------------------------|-----------------------------|-----------------|----------------------------|
| ルビコン株式会社<br>本社工場<br>Rubycon Corporation      | 2017/10/08                  | ISO 14001 :2015 | JQA-EM0540                 |
| 西部ルビコン株式会社<br>Seibu Rubycon Inc.             | 2017/10/08                  | ISO 14001 :2015 | JQA-EM0540                 |
| 福島ルビコン株式会社<br>Fukushima Rubycon Inc.         | 2017/10/08                  | ISO 14001 :2015 | JQA-EM0540                 |
| 秋田ルビコン株式会社<br>Akita Rubycon Inc.             | 2017/10/08                  | ISO 14001 :2015 | JQA-EM0540                 |
| ルビコンインドネシア<br>株式会社<br>P.T. Rubycon Indonesia | 2018/04/02                  | ISO 14001 :2015 | 99-0055                    |

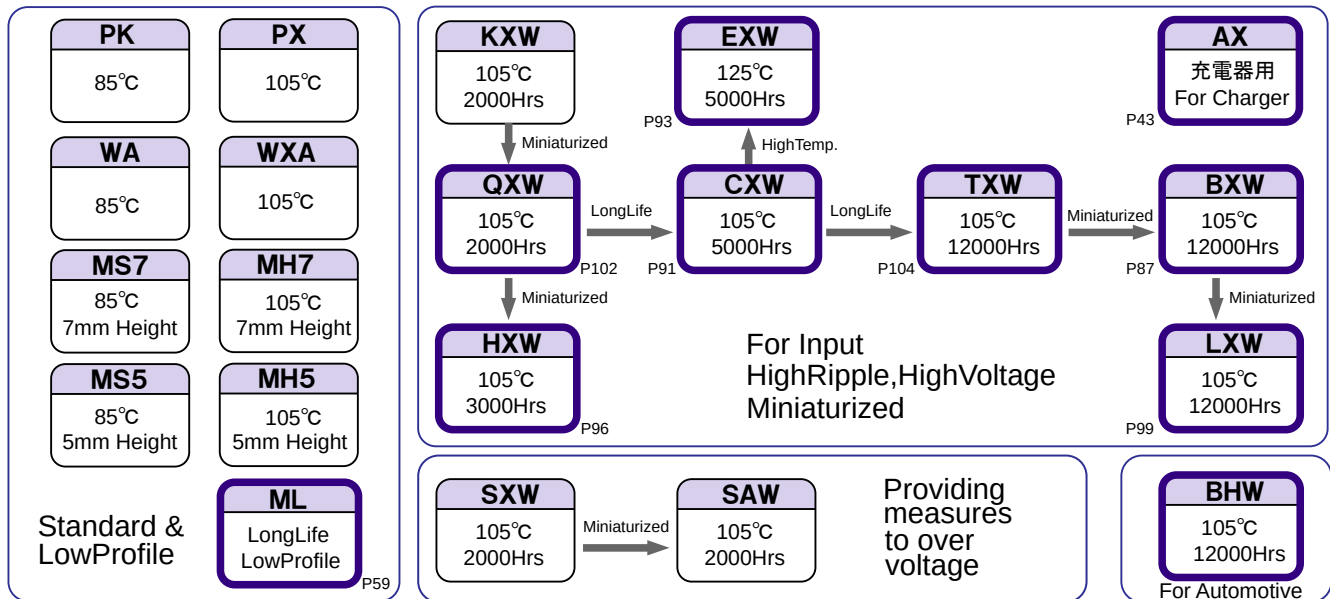
◆チップ形アルミニウム電解コンデンサ/CHIP ALUMINUM ELECTROLYTIC CAPACITORS



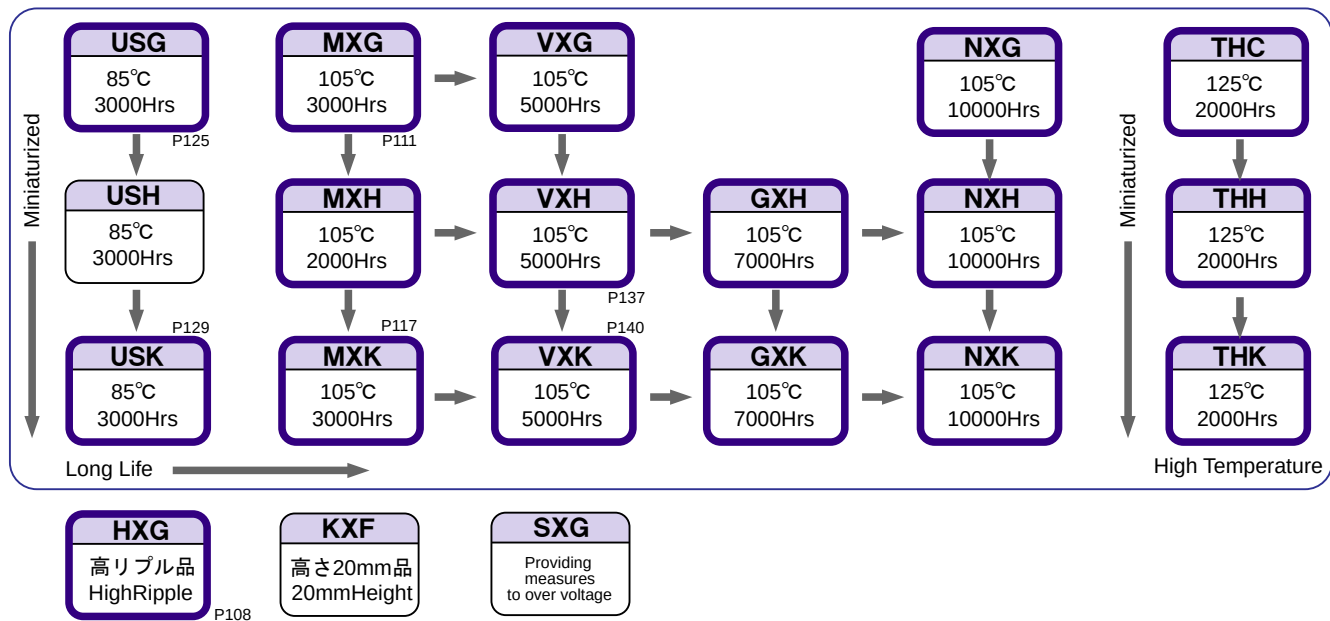
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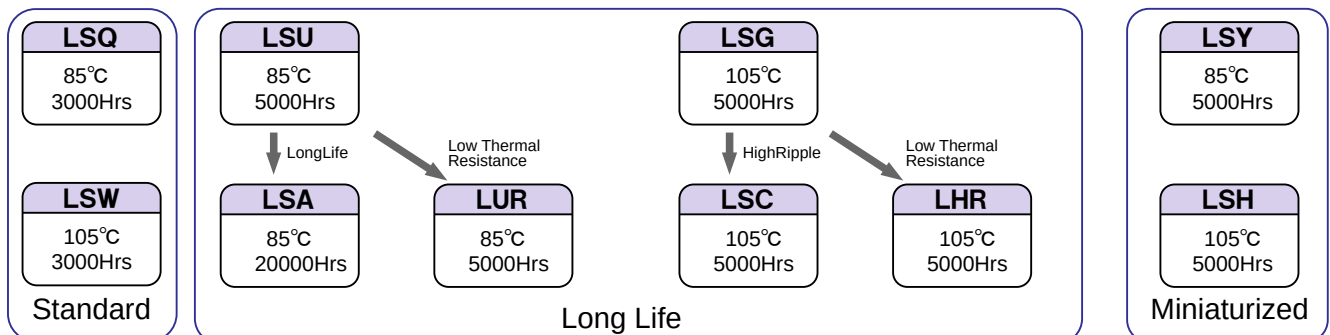
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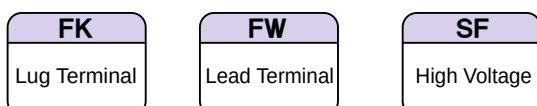
◆基板自立形アルミニウム電解コンデンサ/SNAP-IN ALUMINUM ELECTROLYTIC CAPACITORS



◆ネジ端子形アルミニウム電解コンデンサ/SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS



◆ストロボフラッシュ用アルミニウム電解コンデンサ/PHOTO FLASH ALUMINUM ELECTROLYTIC CAPACITORS





## アルミニウム電解コンデンサの使用上の注意事項

アルミニウム電解コンデンサのご使用に際しては下記の点にご留意頂くようお願い致します。

アルミニウム電解コンデンサに次に示すような負荷を印加すると、急激な特性劣化が起こります。

- ・逆電圧
- ・定格電圧を超える過電圧
- ・定格リップル電流を超える過電流
- ・急激な充放電

この時、急激な発熱やガス発生が起こり、コンデンサ封口部からの電解液漏れや内圧の上昇による圧力弁の作動に至ります。

条件によっては、コンデンサの破壊とともに可燃物(アルミニウム電解コンデンサに使用している電解液、電解紙は可燃物です)が外部へ飛散したり、発火する場合があります。

## CAUTIONS FOR PROPER USE OF ALUMINUM ELECTROLYTIC CAPACITOR

To use Aluminum Electrolytic Capacitors properly, please pay attention to the points listed below.

When the following types of electrical loads indicated below are applied to Aluminum Electrolytic Capacitors, rapid deterioration of electrical property occurs :

- reverse voltage
- voltage beyond rated voltage
- ripple current beyond rated value
- severe charging/discharging

At such times, capacitors are heated very much together with gas evolution, so as to allow electrolyte leakage from sealing or to increase internal pressure enough to operate safety vent.

In some condition, capacitors may catch fire or explode to release combustibles (e.g. electrolyte, separator paper).

## 1. 回路設計での注意事項

### 1) 使用環境、取付け環境及び定格性能の確認

- ・使用環境及び取付け環境が、コンデンサのカタログ又は納入仕様書に規定した定格性能の範囲内である事を確認し、使用してください。

### 2) 使用温度・リップル電流及び寿命

- ・使用温度及び印加リップル電流は、カタログ又は納入仕様書に規定の範囲内としてください。
  - ① 高温度(カテゴリ上限温度を超える温度)で使用しないでください。
  - ② 過電流(定格リップル電流を超える電流)を流さないでください。
    - 直流電圧とリップル電圧尖頭値の和が定格電圧を越えないように、かつ逆電圧とならないようにしてください。
- ・コンデンサを2ヶ以上並列に接続する場合は、電流バランスを考慮してください。
- ・アルミ電解コンデンサ端子間のリップル電圧の変動幅が大きい場合は、急激な充放電と同様な使用となります。リップル電圧の変動幅が70Vp-pを越える場合はご相談ください。
- ・コンデンサの寿命は加速試験結果を基にした寿命推定式により求める事ができますが、この推定式による寿命時間には誤差が含まれており、保証値ではありません。この式により求められた結果が機器の寿命に対して十分に余裕を持ったコンデンサを選定してください。寿命推定式については弊社ホームページをご参照頂くか、弊社までお問い合わせください。

## 1. Cautions on Circuit Design

### 1) Operational Environment, Mounting Environment

- ・Ensure that operational and mounting conditions are satisfied with the specified conditions detailed in the catalog and specification sheets.

### 2) Operating Temperature, Ripple Current and Load Life

- ・Operating temperature and applied ripple current should be within the values specified in the catalog or specification sheets.
  - ① Do not use Aluminum Electrolytic Capacitors at a temperature exceeding the specified maximum category temperature.
  - ② Do not apply excessive current exceeding the specified rated ripple current.

The combined value of DC voltage and the peak of AC voltage must not exceed the rated voltage. Voltage application in the reverse direction is unallowable.

- ・Consider current balance to connect 2 or more Aluminum Electrolytic Capacitors in parallel.
- ・Application of ripple voltage with wide amplitude is equivalent to quick charge-discharge operation. If ripple voltage with the amplitude over 70Vp-p is expected, please contact us.
- ・Expected life of capacitor calculated with "life estimation equation" based on acceleration test results aren't guaranteed, since errors and variations are included. We recommend to select a capacitor considering appropriate safety factor to the expected life. Please refer to our web-site or consult us for the detail of "life estimation equation".

### 3) 極性

- ・コンデンサは、有極性です。逆電圧又は交流電圧は、印加しないでください。極性が反転する回路には、両極性コンデンサをお選びください。ただし、両極性コンデンサも交流回路には使用できません。
- ・極性は下記(1)～(5)の通り表示してあります。
  - (1)本体側面に、帯又は矢印で陰極(マイナス)側端子を示しています。
  - (2)リード線端子同一方向形アルミニウム電解コンデンサは、リード線加工していない場合、リード線端子の短い方が陰極(マイナス)です。
  - (3)ケース天面に捺印表示しているアルミニウム電解コンデンサは、[◐]状または[◑]状の捺印のある方が陰極(マイナス)です。
  - (4)基板自立形(スナップインタイプ)あるいはラグ端子形アルミニウム電解コンデンサは、リベットに[⊗]の刻印がある方が陰極(マイナス)です。
  - (5)ネジ端子形アルミニウム電解コンデンサは、封口板に極性(+,-)が表示されています。

### 4) 充放電

- ・コンデンサは、急激な充放電が繰り返される回路に使用しないでください。急激な充放電が繰り返される回路に使用されるコンデンサについては、ご相談ください。

### 5) 印加電圧

- ・コンデンサに過電圧(定格電圧を超えた電圧)を印加しないでください。
- ・コンデンサを2ヶ以上直列に接続する場合は、電圧バランスを考慮してコンデンサと並列に分圧抵抗器を挿入してください。

### 6) コンデンサの絶縁

- ・コンデンサは、次の間で回路的に完全に隔離してください。
  - ①ケースと陰極端子及び陽極端子並びに回路パターン間
  - ②自立形の無接続(強度補強用)端子と他の陽極端子及び陰極端子並びに回路パターン間
- ・コンデンサの外装スリーブは、絶縁が保証されていません。絶縁機能が必要な箇所には、使用しないでください。スリーブに絶縁機能が必要な場合は、ご相談ください。

### 7) 使用環境の制限

- ・コンデンサは次の環境では、使用しないでください。
  - ①直接水、塩水及び油がかかったり、又は結露状態になる環境
  - ②有害ガス(硫化水素、亜硫酸、亜硝酸、塩素、アンモニア、臭素、臭化メチルなど)が充満する環境
  - ③直射日光、オゾン、紫外線及び放射線が照射される環境
  - ④酸性及びアルカリ性溶剤がかかる環境
  - ⑤振動又は衝撃条件がカタログ又は納入仕様書の規定範囲を超える過激な環境

### 3) Polarity

- ・Do not apply reverse voltage or AC voltage to Aluminum Electrolytic Capacitors, since they are normally polarized. Please use non-polar type capacitors to a circuit with polarity alteration. Note that such non-polar type cannot be used for AC circuit.
- ・Polarity is indicated as follows:
  - (1)Negative terminal is indicated with color band or arrows on capacitor body.
  - (2)On radial leaded Aluminum Electrolytic Capacitors with straight radial leads, the shorter radial lead is the negative terminal.
  - (3)On capacitors with mark on top of aluminum can, the terminal with the mark[◐] or[◑] is negative.
  - (4)On Snap-In and Lug Terminal type capacitors, the knurled rivet[⊗] indicates the negative terminal.
  - (5)On Screw Terminal type capacitors, polarity mark (+,-) indicates on terminal plate.

### 4) Charging and Discharging

- ・Do not use Standard Aluminum Electrolytic Capacitors to applications with rapid charge and discharge cycles. Consult us about capacitors specially designed for rapid charge-discharge cycles.

### 5) Applied Voltage

- ・Do not apply voltage beyond the rated voltage to capacitors.
- ・Use bleeder resistors to a circuit using 2 or more Aluminum Electrolytic Capacitors in series. In this case, the resistors should be connected parallel to the capacitors.

### 6) Insulation

- ・Electrically isolate Aluminum Electrolytic Capacitors as follows:
  - ①Among aluminum can, negative terminal, positive terminal and circuit pattern.
  - ②Among auxiliary terminals on snap-in type, positive terminal,negative terminal and circuit pattern.
- ・The sleeve of Aluminum Electrolytic Capacitor is not recognized as an insulator, so that standard capacitors should not be used to a circuit requiring electric insulation. Please consult us for capacitors with insulating sleeve.

### 7) Use Conditions

- ・Be sure to keep Aluminum Electrolytic Capacitors from the following environments:
  - ①Damp atmosphere where spray of water, saltwater or oil is expected, or where condensation may occur.
  - ②Atmosphere including hazardous gas/fumes such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia or bromine.
  - ③Exposure to direct sunshine, ozone, ultraviolet rays or radiation.
  - ④Exposure to acid or alkaline solution.
  - ⑤Severe vibration or shock beyond the condition specified in the catalog or specification sheets.

## 8) プリント配線板の設計

・コンデンサをプリント配線板に配置する/位置決めするとき、次の内容を確認の上、設計してください。

- ①コンデンサの端子間隔にプリント配線板の穴間隔を合わせてください。
- ②コンデンサの圧力弁部の上に配線や回路パターンが来ないように設計してください。  
圧力弁付きアルミニウム電解コンデンサは、逆電圧や過電圧が印加された時、又カタログ等で規定する許容値を越えたリップル電流が流れた時等の異常時に、圧力弁が作動して電解液を含む高温のガスを逃すように設計されています。
- (1)ケース圧力弁は、作動時に弁部分が膨らみます。基板取付け時はセットの上蓋等と接触しないように下表に示すような空隙を設けてください。空隙がないと圧力弁が作動しなくなります。

| ケース外径      | 空隙       |
|------------|----------|
| φ 6.3～16mm | 2mm MIN. |
| φ 18～35mm  | 3mm MIN. |
| φ 40mm～    | 5mm MIN. |

- (2)プリント配線板側にコンデンサの圧力弁が付く場合は、圧力弁の位置に合わせて圧力弁作動時のガス抜き穴を開けてください。
- (3)ネジ端子形コンデンサの封口部は、下向きにしないでください。  
また、横に寝かせる場合には、陽極端子を上にしてください。
- ③コンデンサの封口部の下には、回路パターンを配線しないでください。  
電解液は導電性を有しており、万一漏れ出た電解液がプリント基板上に付着すると、パターンを腐食させたりパターン間のトラッキングやショートにより発煙、発火に至る場合があります。
- ④コンデンサの周辺及びプリント配線板の裏側(コンデンサの下)への発熱部品の配置は避けてください。
- ⑤チップコンデンサ用プリント配線板のランドパターンは、カタログ又は納入仕様書の規定によって回路設計してください。

## 9) コンデンサの短時間漏れ電流

・コンデンサに直流電圧を印加すると漏れ電流が流れますが、アルミ電解コンデンサは他のコンデンサに比べて漏れ電流が大きく、温度、印加電圧、印加時間によって漏れ電流が変化します。特に、2分値等の規定時間に達しない短時間の漏れ電流値は変動が大きくなります。従って機器の制御や判定などの時定数回路を含む用途に使用される場合、理論的に得られる値と大きく異なる為、注意が必要です。  
このような回路で使用される場合には、機器の要求精度に対して十分余裕を持ったコンデンサを選定してください。

## 10) その他

- ・温度及び周波数の変動によって、コンデンサの電気的な特性は変化します。この変化分を考慮の上、回路設計してください。
- ・両面のプリント配線板にコンデンサを取り付けるとき、コンデンサの下に余分なプリント配線板穴及び表裏接続用貫通穴がないように回路設計してください。
- ・安全性が求められる電子機器へのご使用に際しては、電解コンデンサの故障モードを考慮し、設計面からの安全性確保を行ってください。
  - ①保護回路、保護装置によるシステムの安全化
  - ②冗長回路などによるシステムの安全化
- ・ストロボフラッシュ用アルミニウム電解コンデンサは、写真撮影用ストロボフラッシュ(エレクトロニクフラッシュ)のメインコンデンサ以外の用途には使用できません。

## 8) Consideration for Circuit Design

・In designing a printed circuit board (PCB) with Aluminum Electrolytic Capacitors, the following matters should be ensured:

- ①Alignment of through-hole pitch on the circuit with radial lead pitch of each capacitor.
- ②Avoid wiring or circuit pattern around the capacitor's pressure relief vent.  
The vent is designed to operate to release excessive hot gas including electrolyte, in case of reverse voltage or excessive voltage, or if ripple current exceeding the permissible value is applied.

- (1)The pressure relief vent bulges right before operation.  
Ensure enough space shown below above the vent of each capacitor, so as to prevent the capacitor from touching the cover of the set. The pressure relief vent will not open without appropriate space.

| Body Dia.  | Space    |
|------------|----------|
| φ 6.3—16mm | 2mm MIN. |
| φ 18—35mm  | 3mm MIN. |
| φ 40mm—    | 5mm MIN. |

- (2)In case capacitor's vent is facing the surface of PCB, make a gas release hole on the board.
- (3)Screw terminal capacitor should not be mounted sealing end down on PCB. To mount the capacitor sideways, positive terminal must be on the upper side.
- ③Do not lay copper lines or circuit patterns under capacitors.  
Electrolyte is electrically conductive. In case of deposition of electrolyte on the surface of PCB, corrosion of circuit pattern, or tracking or short circuit between patterns may occur to generate smoke or fire at worst.
- ④Avoid heating parts mounting around Aluminum Electrolytic Capacitors or backside of PCB.
- ⑤Land patterns for chip capacitor should comply with the catalog or specification sheets.

## 9) Short time leakage current

・The leakage current of aluminum electrolytic capacitor is rather larger than other types of capacitor. This value will be influenced by temperature, applied voltage and applying time of voltage.  
Particularly, brief leakage current level which does not reach to specified time such as 2 minutes after applied voltage is unstable. Therefore, please pay attentions when aluminum capacitors are used for application such as timing circuit which include time constant circuit because actual leakage current level is different with simple calculation of "CR circuit".  
If it is used in such a circuit, please select a capacitor with a margin for the required accuracy of the instrument.

## 10) Others

- ・Consider this variation of electric characteristics of Aluminum Electrolytic Capacitor to design circuits. The characteristics vary with operating temperature and frequency.
- ・Extra through-holes should be avoided around or under Aluminum Electrolytic Capacitors on double sided or multilayer PCB.
- ・On use of Aluminum Electrolytic Capacitors to electronic equipment requiring higher safety, consider failure mode of the capacitor to ensure safety at design stage.
  - ①System safety with circuit protection and protective devices.
  - ②System safety with redundant circuits, etc.
- ・Rubycon Photo Flash Capacitors are designed, manufactured and intended solely for use in photo flash and other photographic equipment.

## 2. 取り付け時の注意事項

### 1) 取り付け前の予備知識

- ・セットに組み込んで通電したコンデンサは、再使用しないでください。定期点検時の電气的性能を測定するために取り外したコンデンサを除いて、再使用はできません。
- ・コンデンサには、再起電圧が発生する場合があります。このとき、約1k $\Omega$ の抵抗器を通して放電してください。
- ・長期保管のコンデンサは、漏れ電流が増大している場合があります。このとき、長時間放置された製品には、以下に示す方法で電圧処理を実施してください。

#### 電圧処理

コンデンサに約1k $\Omega$ の保護抵抗器を直列に接続し、定格電圧に等しい直流電圧を1時間印加し、次に約1 $\Omega$ /Vの抵抗器を通して放電する。

### 2) 取り付け時

- ・コンデンサの定格(静電容量及び電圧)を確認してから、取り付けてください。
- ・コンデンサの極性を確認してから取り付けてください。
- ・コンデンサは床などに落下させないでください。このとき、落下したコンデンサは、使用しないでください。
- ・コンデンサを変形させて取り付けないでください。
- ・コンデンサの端子間隔とプリント配線板穴間隔とが合っていることを確認してから取り付けてください。
- ・基板自立形(スナッピン形)コンデンサは、その基板に密着する(浮いた状態にない)まで押し込んで取り付けてください。
- ・自動挿入機によってコンデンサのリード線をクリンチ固定する強さは、強すぎないようにしてください。
- ・自動挿入機及び装着機の吸着具、製品チェッカー及びセンタリング操作による衝撃力に注意してください。
- ・セットにおける振動・衝撃等が懸念される場合はコンデンサをプリント基板に取付ける際、補助具・接着剤で補強してください。
- ・ネジ端子の締めつけトルクは、カタログ又は納入仕様書で規定された範囲内としてください。

### 3-1) はんだごてによるはんだ付け

- ・はんだ付け条件(温度、時間)は、納入仕様書に規定の範囲内としてください。
- ・端子間隔とプリント配線板穴間隔が不整合のため、リード線端子を加工する必要がある場合には、はんだ付けする前に、コンデンサ本体にストレスがかからないように加工してください。
- ・はんだごてによる手直しをするとき、一度はんだ付けしたコンデンサを取り外す必要がある場合には、コンデンサの端子にストレスがかからないように、はんだが十分溶融してから行ってください。
- ・はんだごての先がコンデンサの本体に触れないようにしてください。

## 2. Cautions for Assembly

### 1) Precautions for assembly

- ・Do not reuse Aluminum Electrolytic Capacitors once mounted and electrified in a unit. Reuse of the capacitors is unallowable unless they are detached from PCB for the purpose of electric measurement.
- ・Aluminum Electrolytic Capacitors may have recurring voltage even after discharging. Please discharge capacitors through a 1k $\Omega$  resistor before use.
- ・Leakage current of Aluminum Electrolytic Capacitors may be increased after storage for a long time. Conduct electrification treatment for such capacitors before use.

#### Electrification Treatment

Connect a 1k $\Omega$  resistor in series with the subject capacitor, and apply the DC voltage as high as the Rated Voltage for 1 hour. Discharge the capacitor through a resistor of about 1 $\Omega$ /Volt after the electrification.

### 2) Assembly Process

- ・Ensure polarity of each capacitor before mounting.
- ・Keep capacitors from falling onto the floor. Do not use capacitors if they are fallen onto a hard surface.
- ・Do not deform capacitors.
- ・Ensure that terminal pitch of each capacitor is aligned with through-hole pitch on PCB.
- ・For snap-in capacitors, press them to stick firmly with PCB. Lift of capacitors is unacceptable.
- ・Avoid excessive force to clinch lead wires in auto-insertion process.
- ・Avoid excessive shock to capacitors on automatic insertion machine, during mounting, parts inspection or centering operations.
- ・Please use supporting materials such as fixture or adhesive to mount capacitors to PCB, in case vibration or shock is expected.
- ・Use the value of torque within the range described in the catalog or specification sheets to tighten screw terminals.

### 3-1) Soldering

- ・Soldering should be performed with the conditions (temperatures, times) specified in the specification sheets.
- ・In case of requirement of lead wire reforming due to terminal pitch unaligned with through-hole pitch on PCB, capacitors should be kept from stress on body.
- ・In case that capacitor is required to detach from PCB due to hand rework, the detachment should be made after solder is fully melted, so as to keep the capacitor from stress on radial leads.
- ・Do not touch soldering iron with capacitor body.



### 3-2) フローはんだ付け

- ・コンデンサの本体を溶融はんだの中に浸せきしてはんだ付けしないでください。プリント配線板を介在させて、コンデンサのある反対側の裏面のみにはんだ付けしてください。
- ・はんだ付け条件（予備加熱、はんだ付け温度、端子浸せき時間）は、納入仕様書に規定の範囲内としてください。
- ・端子部以外にフラックスが付着しないようにしてください。
- ・はんだ付けのとき、他の部品が倒れてコンデンサに接触しないようにしてください。

### 3-3) リフローはんだ付け

- ・はんだ付け条件（予備加熱、はんだ温度、時間、リフロー回数）は、カタログ又は納入仕様書に規定の範囲内としてください。
- ※）規定の範囲を越えるリフローを必要とする場合は、必ずご連絡ください。
- ・赤外線ヒータを使用するとき、コンデンサの色や材質によって赤外線吸収率が異なる為、加熱の度合いに注意してください。

### 4) はんだ付け後の扱い

- ・プリント配線板にコンデンサをはんだ付けした後、コンデンサ本体を傾けたり又はひねったりしないでください。
- ・プリント配線板にコンデンサをはんだ付けした後、コンデンサを把手がわりにつかんでプリント配線板を移動しないでください。
- ・プリント配線板にコンデンサをはんだ付けした後、コンデンサに物をぶつけないでください。
- また、プリント配線板を重ねるときコンデンサにプリント配線板、又は他の部品などが当たらないようにしてください。

### 5) プリント配線板の洗浄

(1)コンデンサは、以下の洗浄剤などでは洗浄できません。

- ・ハロゲン系溶剤：コンデンサ内部の腐食  
洗浄剤がコンデンサ内部に侵入（拡散）し、洗浄剤が分解反応を起こして遊離された塩素（ハロゲンイオン）がアルミと反応し腐食が発生する場合があります。
- ・アルカリ系溶剤：アルミケースの腐食（溶解）
- ・テルペン、石油系溶剤：封ゴムの劣化
- ・トルエン、キシレン：封ゴムの劣化
- ・アセトン：表示の消失

・オゾン層破壊物質は、地球環境保護のため、洗浄剤としての使用は避けてください。  
代替フロンも、地球環境保護の見地から将来的に使用できなくなりますので、洗浄剤としての使用を推奨しません。

### 3-2) Flow Soldering

- ・Do not dip capacitor body into solder bath. Dip only the opposite side of PCB.
- ・Soldering conditions (preheat, soldering temperature, dipping time) should conform to the specification sheets.
- ・Be sure to apply soldering flux only to capacitor terminals.
- ・Be careful that another part doesn't fall in soldering to touch capacitors.

### 3-3) Reflow Soldering

- ・Reflow soldering conditions (preheat, soldering temperature, reflow time, reflow cycle) should conform to the catalog or specification sheets.
- \*Consult us for soldering beyond the specification.
- ・Be careful of the amount of heating with infrared heater, since infrared absorptance depends on color and material of capacitor sleeve.

### 4) Handling after Soldering

- ・Do not bend or twist capacitor body after soldering on PCB.
- ・Do not hold capacitors to transfer PCB after soldering.
- ・Keep capacitors from hitting something hard.  
Also keep capacitors from touching another PCB or part on stacking PCB.

### 5) Cleaning after Soldering

(1)Do not clean capacitors with the following cleaning agents:

- ・Halogenated solvents: except for solvent resistant capacitor types, halogenated solvents can permeate the seal to corrode aluminum foil within capacitor.
- ・Alkali solvents: could attack and dissolve aluminum can.
- ・Terpene and Petroleum based solvents: could deteriorate packing rubber.
- ・Toluene and Xylene: could deteriorate packing rubber.
- ・Acetone: could blur print on sleeve.

・Do not use of ozone depleting agents to protect the global environment.  
We don't recommend hydro-chlorofluorocarbon (HCFC) considering its impact on the environment.

- (2)洗浄する必要がある場合は、耐洗浄用コンデンサを使用し、カタログ又は納入仕様書に規定した洗浄剤、洗浄条件（温度、時間など）の範囲内で洗浄を行ってください。
- ・耐洗浄用コンデンサに対して洗浄するとき、洗浄剤の汚染管理（電導度、pH、比重、水分量など）を十分管理してください。洗浄剤が汚染されていると、塩素（ハロゲンイオン）濃度が高くくなり、コンデンサ内部が腐食する場合があります。洗浄剤に対するフラックス濃度は、2%wt以下に管理してください。
  - ・耐洗浄用コンデンサに対して洗浄の後、洗浄液の雰囲気中又は密閉容器で保管しないでください。また、基板洗浄直後にコンデンサ封口部とプリント基板の間に洗浄剤が残留しないように充分強制乾燥を行ってください。（カテゴリ上限温度以下）
- (3)洗浄方法
- ＜対象品種＞ 小形アルミ電解コンデンサの100WV以下品
- ＜洗浄剤＞
- パインアルファ ST-100S
- クリンスルー 750H
- IPA（イソプロピルアルコール）
- ＜洗浄条件＞
- 100WV以下品について、60℃の液中浸漬、蒸気、超音波及びこれらの組合わせで5分間以内（5L、7L品は3分間以内）
- ・商品によっては洗浄できませんので、納入仕様書の耐洗浄性の項目をご参照ください。また、上記以外の洗浄剤を御使用の際には、必ず一報ください。
- (2)To clean up capacitors, select solvent-resistant capacitors. Also use detergents and conditions stipulated in the catalog or specification sheets.
- ・Cleaning of solvent-resistant capacitors
- Closely control cleaning solution (conductivity, pH, specific gravity, water content, etc.).
- The concentration of flux (contamination) must be within 2wt% against the cleaning solution. Excessive contamination could include high content of chloride (halogen) ion, resulting in corrosion of capacitor.
- ・Do not keep PCB including capacitors in solvent-including environment or non-ventilated container. Be careful of drying not to leave detergent between capacitor surface and PCB. Use a circulating chamber for drying (within the maximum category temperature).
- (3)Cleaning Procedure
- ＜Subjects＞ Miniature Aluminum Electrolytic Capacitors
- 100wv or lower
- ＜Cleaning Solvents＞
- Pine Alpha ST-100S
- Clean-thru 750H
- IPA (isopropyl alcohol)
- ＜Cleaning Condition＞
- For capacitors of 100WV or lower, immerse into the solution of the solvent, put into mist atmosphere, use ultrasonic vibration, or combine them for 5 minutes (3 minutes for 5L and 7L) up to 60C.
- ・Please refer to specification sheets, since some products are incompatible with cleaning. Please consult us to use a solvent other than the above.
- (6)固定剤・コーティング剤
- ・ハロゲン系溶剤などを含有する固定剤・コーティング剤は使用しないでください。
  - ・固定剤・コーティング剤を使用する前に、基板とコンデンサの封口部にフラックス残渣及び汚れが残らないようにしてください。
  - ・固定剤・コーティング剤を使用する前に、洗浄剤などを乾燥させてください。
  - ・固定剤・コーティング剤により、封口部の全面をふさがないでください。
- (6)Adhesives and Coating Materials
- ・Do not use adhesives or coating materials including halogens to fix Aluminum Electrolytic Capacitors.
  - ・Be sure to clean up soldering flux and dirt between each capacitor and the surface of PCB before using an adhesive or a coating material.
  - ・Fully dry solvents on capacitors before using adhesive or coating material.
  - ・Do not cover up all the sealed surface of capacitor with adhesive or coating material.
- (7)燻蒸処理・消毒作業・ハロゲン系難燃剤について
- ・以下の処理・環境条件は、コンデンサの内部電極やケース及び端子表面の腐食原因となる場合がありますので注意してください。
- (1)輸出入時の防虫対策の為のハロゲン化合物による木材パレットの燻蒸処理。
- (2)伝染病の感染を防止する為のハロゲン系の洗浄剤・消毒剤が直接コンデンサに付着する場合。
- (3)ハロゲン系難燃剤（臭素等）を多く含む部品（電子部品、及び筐体、絶縁フィルム等を含め）との共存環境下での使用、かつそれらの部品からハロゲンが遊離する懸念のある場合。
- (7)Fumigation, Disinfection and Halogenated Flame Retardant
- ・Note that treatments or environments shown below may cause corrosion inside and outside of capacitor (foils, aluminum can, terminal):
- (1)Fumigation of wooden pallets to disinfect vermin before shipment.
- (2)Direct deposition to capacitors of halogenated detergents or antiseptics for preventing infection of epidemic diseases contact.
- (3)Coexistence of components or parts containing halogenated flame retardant agent (bromine etc.).

### 3.セット使用中の注意事項

- ・コンデンサの端子に直接触れないでください。
- ・コンデンサの端子間を導電体でショートさせないでください。また、酸及びアルカリ水溶液などの導電性溶液をコンデンサにかけないでください。
- ・使用環境及び取付け環境が、コンデンサのカタログ又は納入仕様書に規定した定格性能の範囲内である事を確認し、使用してください。

### 3.Cautions in Use on Set

- ・Do not touch the terminals of capacitor.
- ・Do not short-circuit between terminals of capacitor. Keep capacitors from conductive solutions, such as acid and alkali.
- ・Ensure that operational environment is satisfied with the conditions mentioned in the catalog or specification sheets.

## 4.保守点検

- 産業用機器に使用されているコンデンサについては、定期点検をしてください。
- 定期点検は、次の内容を行ってください。
  - ①外観：開弁、液漏れなどの著しい異常の有無。
  - ②電気的性能：漏れ電流、静電容量、損失角の正接及びカタログ又は納入仕様書に規定の項目。

## 5.万一の場合

- セット使用中、コンデンサが開弁し、ガスが見えたときは、セットのメイン電源を切るか又は電源コードのプラグをコンセントから抜いてください。
- コンデンサの圧力弁作動時、+100℃を超える高温ガスが噴出しますので、顔を近づけないでください。
- 噴出したガスが目に入ったり、吸い込んだりした場合には、直ちに水で目を洗ったり、うがいをしてください。
- コンデンサの電解液は、なめないでください。電解液が皮膚に付いたときは、石鹸で洗い流してください。

## 6.保管の条件

- コンデンサを高温度・高湿度で保管しないでください。室内で5℃～35℃の温度、75%以下の相対湿度で保管してください。
- コンデンサに直接、水、塩水及び油がかかる環境で保管しないでください。
- コンデンサを有害ガス（硫化水素、亜硫酸、亜硝酸、塩素、アンモニア、臭素、臭化メチルなど）が充満する環境で保管しないでください。
- コンデンサをオゾン、紫外線及び放射線が照射される環境で保管しないでください。
- コンデンサを酸性及びアルカリ性溶剤がかかる環境で保管しないでください。

## 7.廃棄の場合

- コンデンサを廃棄する場合には、次のいずれかの方法を取ってください。
  - ①コンデンサに穴を開けるか又は十分つぶしてから高温焼却（800℃以上）してください。
  - ②コンデンサを焼却しない場合は、専門の産業廃棄物処理業者に渡してください。

## 4.Maintenance

- Periodically inspect capacitors used for industrial equipment. Check the following points at the inspection.
  - ①Visual inspection of pressure relief vent operation and leakage of electrolyte.
  - ②Electrical characteristics: leakage current, capacitance, dissipation factor and other items specified in the catalog or specification Sheets.

## 5.Emergency Action

- If you find pressure relief vent operation or gas evolution from a capacitor, shut off the main switch of the equipment or pull the power cable from the outlet immediately.
- Keep your face off from the capacitor with vent operation. Extremely hot gas (over 100℃) may blow out of it. In case of eye contact or inhalation of gas, immediately flush the eye(s) with large amount of clean water or gargle the throat.
- Do not lick electrolyte. In case of electrolyte reach to skin, wash with soap and water.

## 6.Storage Condition

- Do not keep Aluminum Electrolytic Capacitors in hot and/or humid atmosphere. Recommended storage condition is 5℃–35℃ in temperature and not higher than 75% in relative humidity.
- Do not keep Aluminum Electrolytic Capacitors in a condition where spray of water, saltwater or oil is expected.
- Do not store Aluminum Electrolytic Capacitors in an environment full of hazardous gas (e.g. hydrogen sulfide, sulfurous acid gas, nitrous acid, chlorine gas, ammonia, bromine gas, methyl bromide).
- Do not keep Aluminum Electrolytic Capacitors under exposure to ozone, ultraviolet rays or radiation.
- Do not keep Aluminum Electrolytic Capacitors under exposure to acid or alkaline environment.

## 7.Disposal

- Please take either of the following actions in case of disposal.
  - ①Incineration (at high temperature over 800℃) after piercing or crushing capacitor body.
  - ②Consignment to specialists of industrial waste.

※詳細はJEITA RCR-2367Dをご覧ください。

JEITA RCR-2367D

「電子機器用固定アルミニウム電解コンデンサの安全アプリケーションガイド」

〔社団法人 電子技術情報産業協会、1995年3月制定、2017年10月改正、2019年3月追補1制定〕

For further details:

Please refer to JEITA RCR-2367D (Safety Application Guide for fixed aluminum electrolytic capacitors for use in electronic equipment).

[Technical Report of Japan Electronics and Information Technology Industries Association (established in March 1995, Revised in March 2019)].

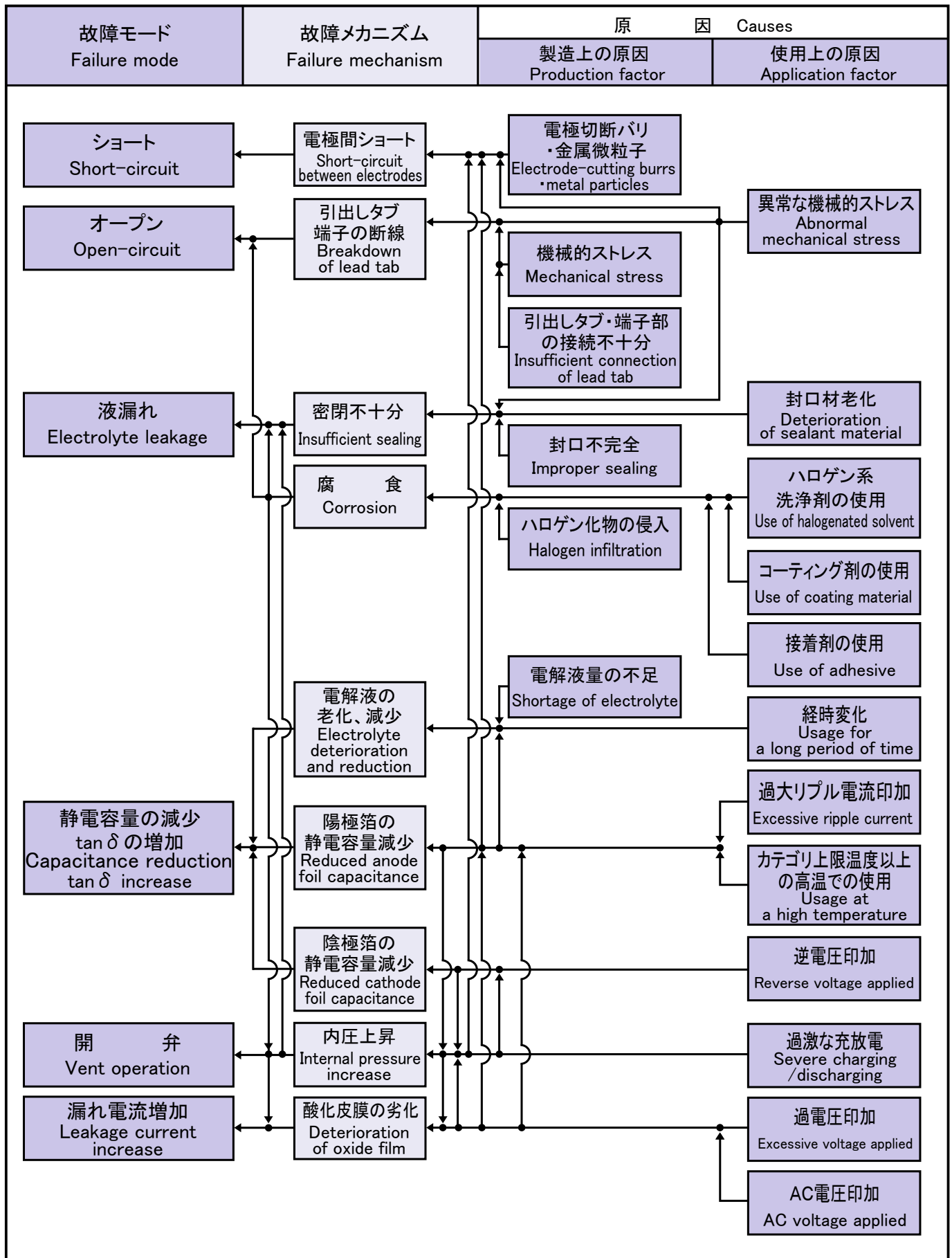


極めて高信頼性を要求される回路、社会的に重大な影響を与えかつ直接生命・身体に対する危険を伴う用途（交通輸送機器・医療機器・航空機器・宇宙機器・原子力用機器等）に使用される場合には、事前にご相談ください。



Our products is not used in special circuit( transportation equipment , medical equipment , aerospace equipment, space equipment, nuclear equipment etc ) where a defect in this component may cause the loss of human life or other significant damage in the case of high reliability application circuit/equipment , Please contact us in advance.

◆代表的な故障モードとその要因／TYPICAL FAILURE MODES AND THEIR FACTORS





◆チップ形 呼称方法/CHIP TYPE PART NUMBER

|                                                                                                                                                                                                  |                    |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------|-----------------------|--------------|-----------|----|----|----|-----|-----|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|-----|-----|-----|-----|------|------|------------------------------------------------------------------------------------------|-----------|------|-------|---|-----------------------------------------------------------------------------------------|-------|--------|---------|
| □□□                                                                                                                                                                                              | □□□□               | □□□□□       | □                     | □□□          | DXL       |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 定格電圧                                                                                                                                                                                             | シリーズ名              | 静電容量        | 静電容量許容差               | 副記号          | ケースサイズ    |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| Rated Voltage                                                                                                                                                                                    | Series             | Capacitance | Capaciatnce Tolerance | Option<br>※1 | Case Size |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| ↑                                                                                                                                                                                                |                    | ↑           | ↑                     |              | ↑         |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| <table><tr><td>Rated Voltage(Vdc)</td><td>Code</td></tr><tr><td>6.3</td><td>6.3</td></tr><tr><td>10</td><td>10</td></tr><tr><td>25</td><td>25</td></tr><tr><td>100</td><td>100</td></tr></table> | Rated Voltage(Vdc) | Code        | 6.3                   | 6.3          | 10        | 10 | 25 | 25 | 100 | 100 |  | <table><tr><td>Cap.(μ F)</td><td>Code</td></tr><tr><td>4.7</td><td>4R7</td></tr><tr><td>220</td><td>220</td></tr><tr><td>3300</td><td>3300</td></tr></table> | Cap.(μ F) | Code | 4.7 | 4R7 | 220 | 220 | 3300 | 3300 | <table><tr><td>Tolerance</td><td>Code</td></tr><tr><td>± 20%</td><td>M</td></tr></table> | Tolerance | Code | ± 20% | M | <table><tr><td>4X6.1</td></tr><tr><td>8X10.5</td></tr><tr><td>16X21.5</td></tr></table> | 4X6.1 | 8X10.5 | 16X21.5 |
| Rated Voltage(Vdc)                                                                                                                                                                               | Code               |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 6.3                                                                                                                                                                                              | 6.3                |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 10                                                                                                                                                                                               | 10                 |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 25                                                                                                                                                                                               | 25                 |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 100                                                                                                                                                                                              | 100                |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| Cap.(μ F)                                                                                                                                                                                        | Code               |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 4.7                                                                                                                                                                                              | 4R7                |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 220                                                                                                                                                                                              | 220                |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 3300                                                                                                                                                                                             | 3300               |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| Tolerance                                                                                                                                                                                        | Code               |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| ± 20%                                                                                                                                                                                            | M                  |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 4X6.1                                                                                                                                                                                            |                    |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 8X10.5                                                                                                                                                                                           |                    |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |
| 16X21.5                                                                                                                                                                                          |                    |             |                       |              |           |    |    |    |     |     |  |                                                                                                                                                              |           |      |     |     |     |     |      |      |                                                                                          |           |      |       |   |                                                                                         |       |        |         |

ご注文の際には、定格電圧、シリーズ名、静電容量、ケースサイズまでご連絡ください。  
Please Indicate the abobe information when ordring

例): Example    35            TZV            330            M            10X10.5

※1 副記号: 標準品はblankとなります。  
Option : Standard item is blank.

◆リード線形 呼称方法/RADIAL LEAD TYPE PART NUMBER

|                                                                                                                                                                                                  |                    |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------|-----------------------|--------|--------------|-----------|----|----|-----|-----|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|------|------|----|----|------|------|------------------------------------------------------------------------------------------|-----------|------|-------|---|----------------------------------------------|------------|---------------------------------------------------|-----------------|---------------------------------------------------------------|----------------------------|
| □□□                                                                                                                                                                                              | □□□□               | □□□□□       | □                     | □□□    | □□           | DXL       |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 定格電圧                                                                                                                                                                                             | シリーズ名              | 静電容量        | 静電容量許容差               | 副記号    | リード加工記号      | ケースサイズ    |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| Rated Voltage                                                                                                                                                                                    | Series             | Capacitance | Capaciatnce Tolerance | Option | Lead Forming | Case Size |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| ↑                                                                                                                                                                                                |                    | ↑           | ↑                     | ※2     | ※3           | ↑         |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| <table><tr><td>Rated Voltage(Vdc)</td><td>Code</td></tr><tr><td>6.3</td><td>6.3</td></tr><tr><td>10</td><td>10</td></tr><tr><td>25</td><td>25</td></tr><tr><td>100</td><td>100</td></tr></table> | Rated Voltage(Vdc) | Code        | 6.3                   | 6.3    | 10           | 10        | 25 | 25 | 100 | 100 |  | <table><tr><td>Cap.(μ F)</td><td>Code</td></tr><tr><td>0.47</td><td>0R47</td></tr><tr><td>10</td><td>10</td></tr><tr><td>1000</td><td>1000</td></tr></table> | Cap.(μ F) | Code | 0.47 | 0R47 | 10 | 10 | 1000 | 1000 | <table><tr><td>Tolerance</td><td>Code</td></tr><tr><td>± 20%</td><td>M</td></tr></table> | Tolerance | Code | ± 20% | M | <table><tr><td>EFC<br/>etc</td></tr></table> | EFC<br>etc | <table><tr><td>TA,KC<br/>CA etc</td></tr></table> | TA,KC<br>CA etc | <table><tr><td>5X11<br/>10X12.5<br/>12.5X40</td></tr></table> | 5X11<br>10X12.5<br>12.5X40 |
| Rated Voltage(Vdc)                                                                                                                                                                               | Code               |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 6.3                                                                                                                                                                                              | 6.3                |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 10                                                                                                                                                                                               | 10                 |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 25                                                                                                                                                                                               | 25                 |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 100                                                                                                                                                                                              | 100                |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| Cap.(μ F)                                                                                                                                                                                        | Code               |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 0.47                                                                                                                                                                                             | 0R47               |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 10                                                                                                                                                                                               | 10                 |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 1000                                                                                                                                                                                             | 1000               |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| Tolerance                                                                                                                                                                                        | Code               |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| ± 20%                                                                                                                                                                                            | M                  |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| EFC<br>etc                                                                                                                                                                                       |                    |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| TA,KC<br>CA etc                                                                                                                                                                                  |                    |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |
| 5X11<br>10X12.5<br>12.5X40                                                                                                                                                                       |                    |             |                       |        |              |           |    |    |     |     |  |                                                                                                                                                              |           |      |      |      |    |    |      |      |                                                                                          |           |      |       |   |                                              |            |                                                   |                 |                                                               |                            |

ご注文の際には、定格電圧、シリーズ名、静電容量、リード加工、ケースサイズまでご連絡ください。  
Please Indicate the abobe information when ording

例): Example    ・ロング品    Long lead type    50    PX    2R2    M    EFC    10X10.5  
                      ・テーピング品    Taping type    35    ZLJ    220    M    TA    8X16

※2 副記号: 各シリーズのページをご確認ください。  
Option : Please confirm each series page.

※3 リード加工記号: テーピング仕様及びリード線加工仕様の項目をご参照ください。  
Lead Forming : Please refer to TAPING SPECIFICATIONS and LEAD CUTTING FORMING SPECIFICATIONS.

### ◆リード線端子形 梱包単位/RADIAL LEAD TYPE PACKAGING SPECIFICATION

| 製品サイズ<br>SIZE<br>(mm) |         | ロングリード品<br>LONG LEAD |                 | リード加工品<br>LEAD FORMING |                 | テーピング品<br>TAPING |
|-----------------------|---------|----------------------|-----------------|------------------------|-----------------|------------------|
|                       |         | バラ梱包                 | 整列梱包            | バラ梱包                   | 整列梱包            |                  |
|                       |         | BULK PACKAGE         | ALIGNED PACKAGE | BULK PACKAGE           | ALIGNED PACKAGE |                  |
| φ 4                   | 4×5     | 5000                 | —               | 5000                   | —               | 2000             |
|                       | 4×7     | 5000                 | —               | 5000                   | —               | 2000             |
| φ 5                   | 5×5     | 5000                 | —               | 5000                   | —               | 2000             |
|                       | 5×7     | 5000                 | —               | 5000                   | —               | 2000             |
|                       | 5×11    | 3000                 | —               | 5000                   | —               | 2000             |
| φ 6.3                 | 6.3×5   | 3000                 | —               | 5000                   | —               | 2000             |
|                       | 6.3×7   | 3000                 | —               | 5000                   | —               | 2000             |
|                       | 6.3×11  | 2000                 | —               | 3000                   | —               | 2000             |
|                       | 6.3×25  | 1000                 | —               | 1000                   | —               | —                |
|                       | 6.3×30  | 1000                 | —               | 1000                   | —               | —                |
|                       | 6.3×40  | 1000                 | —               | 1000                   | —               | —                |
|                       | 6.3×50  | 1000                 | —               | 1000                   | —               | —                |
| φ 8                   | 8×5     | 3000                 | —               | 5000                   | —               | 1000             |
|                       | 8×7     | 3000                 | —               | 5000                   | —               | 1000             |
|                       | 8×7.5   | 2000                 | —               | 2000                   | —               | 1000             |
|                       | 8×9     | 2000                 | —               | 2000                   | —               | 1000             |
|                       | 8×10.8  | 2000                 | —               | 2000                   | —               | 1000             |
|                       | 8×11.5  | 2000                 | —               | 2000                   | —               | 1000             |
|                       | 8×16    | 1000                 | —               | 1000                   | —               | 1000             |
|                       | 8×20    | 1000                 | —               | 1000                   | —               | 1000             |
|                       | 8×25    | —                    | 500             | —                      | 500             | —                |
|                       | 8×30    | —                    | 500             | —                      | 500             | —                |
|                       | 8×35    | —                    | 500             | —                      | 500             | —                |
|                       | 8×40    | —                    | 500             | —                      | 500             | —                |
|                       | 8×45    | —                    | 500             | —                      | 500             | —                |
|                       | 8×50    | —                    | 500             | —                      | 500             | —                |
|                       | 8×55    | —                    | 500             | —                      | 500             | —                |
|                       | 8×60    | —                    | 500             | —                      | 500             | —                |
| φ 10                  | 10×9    | 1000                 | —               | 1000                   | —               | 500              |
|                       | 10×10   | 1000                 | —               | 1000                   | —               | 500              |
|                       | 10×12.5 | 1000                 | —               | 1000                   | —               | 500              |
|                       | 10×16   | 1000                 | —               | 1000                   | —               | 500              |
|                       | 10×20   | 1000                 | —               | 1000                   | —               | 500              |
|                       | 10×23   | 1000                 | —               | 1000                   | —               | 500              |
|                       | 10×25   | 1000                 | 500             | 1000                   | 500             | 500              |
|                       | 10×28   | 1000                 | 500             | 1000                   | 500             | 500              |
|                       | 10×30   | —                    | 500             | —                      | 500             | —                |
|                       | 10×35   | —                    | 500             | —                      | 500             | —                |
|                       | 10×40   | —                    | 500             | —                      | 500             | —                |
|                       | 10×45   | —                    | 500             | —                      | 500             | —                |
|                       | 10×50   | —                    | 500             | —                      | 500             | —                |
|                       | 10×55   | —                    | 500             | —                      | 500             | —                |
|                       | 10×60   | —                    | 500             | —                      | 500             | —                |

| 製品サイズ<br>SIZE<br>(mm) |           | ロングリード品              |                         | リード加工品               |                         | テーピング品<br>TAPING |
|-----------------------|-----------|----------------------|-------------------------|----------------------|-------------------------|------------------|
|                       |           | LONG LEAD            |                         | LEAD FORMING         |                         |                  |
|                       |           | バラ梱包<br>BULK PACKAGE | 整列梱包<br>ALIGNED PACKAGE | バラ梱包<br>BULK PACKAGE | 整列梱包<br>ALIGNED PACKAGE |                  |
| φ 12.5                | 12.5×16   | 1000                 | —                       | 1000                 | 500                     | 500              |
|                       | 12.5×20   | 1000                 | 500                     | 1000                 | 500                     | 500              |
|                       | 12.5×25   | 1000                 | 500                     | 1000                 | 500                     | 500              |
|                       | 12.5×30   | 600                  | 500                     | 600                  | 500                     | 500              |
|                       | 12.5×35   | 600                  | 500                     | 600                  | 500                     | 500              |
|                       | 12.5×40   | 600                  | 500                     | 600                  | 500                     | 500              |
|                       | 12.5×45   | —                    | 500                     | —                    | 500                     | —                |
|                       | 12.5×50   | —                    | 500                     | —                    | 500                     | —                |
|                       | 12.5×55   | —                    | 500                     | —                    | 500                     | —                |
|                       | 12.5×60   | —                    | 500                     | —                    | 500                     | —                |
| φ 14.5                | 14.5×20   | —                    | 500                     | —                    | 500                     | —                |
|                       | 14.5×25   | —                    | 500                     | —                    | 500                     | —                |
|                       | 14.5×30   | —                    | 500                     | —                    | 500                     | —                |
|                       | 14.5×31.5 | —                    | 500                     | —                    | 500                     | —                |
|                       | 14.5×35   | —                    | 500                     | —                    | 500                     | —                |
|                       | 14.5×40   | —                    | 500                     | —                    | 500                     | —                |
|                       | 14.5×45   | —                    | 500                     | —                    | 500                     | —                |
|                       | 14.5×50   | —                    | 500                     | —                    | 500                     | —                |
| φ 16                  | 16×16     | 600                  | —                       | 600                  | 400                     | 250              |
|                       | 16×20     | 600                  | 200                     | 600                  | 400                     | 250              |
|                       | 16×25     | 600                  | 200                     | 600                  | 400                     | 250              |
|                       | 16×30     | —                    | 200                     | —                    | 200                     | 250              |
|                       | 16×31.5   | —                    | 200                     | —                    | 200                     | 250              |
|                       | 16×35     | —                    | 200                     | —                    | 200                     | 250              |
|                       | 16×35.5   | —                    | 200                     | —                    | 200                     | 250              |
|                       | 16×40     | —                    | 200                     | —                    | 200                     | 250              |
|                       | 16×45     | —                    | 200                     | —                    | 200                     | —                |
|                       | 16×50     | —                    | 200                     | —                    | 200                     | —                |
| φ 18                  | 18×16     | 500                  | —                       | —                    | 200                     | 250              |
|                       | 18×20     | 500                  | 200                     | —                    | 200                     | 250              |
|                       | 18×25     | 500                  | 200                     | —                    | 200                     | 250              |
|                       | 18×30     | —                    | 200                     | —                    | 200                     | 250              |
|                       | 18×31.5   | —                    | 200                     | —                    | 200                     | 250              |
|                       | 18×35     | —                    | 200                     | —                    | 200                     | 250              |
|                       | 18×35.5   | —                    | 200                     | —                    | 200                     | 250              |
|                       | 18×40     | —                    | 200                     | —                    | 200                     | 250              |
|                       | 18×45     | —                    | 200                     | —                    | 200                     | —                |
|                       | 18×50     | —                    | 200                     | —                    | 200                     | —                |

・梱包単位につきましては上記と異なる場合がございます。

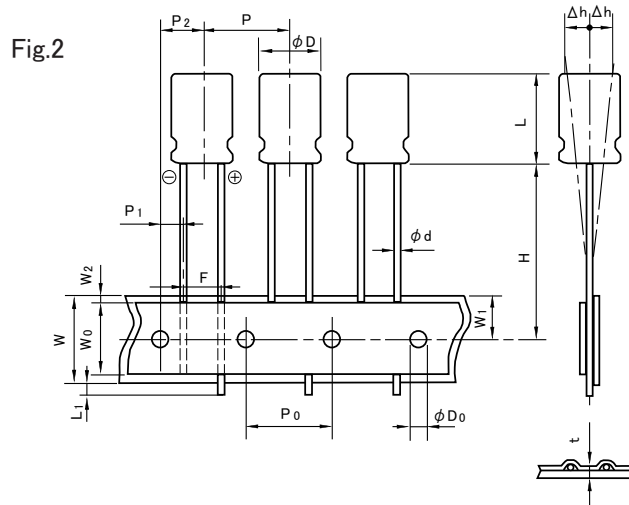
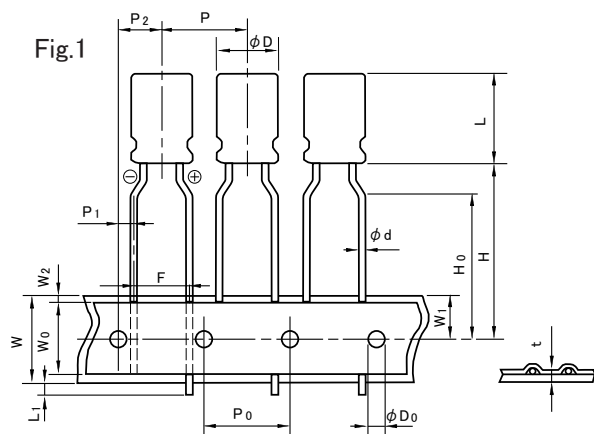
There are some differences between actual package quantity and above list.

・バラ梱包と整列梱包が併記されたサイズについて、輸出用は整列梱包が標準となります。

For the sizes stated both bulk and aligned package, aligned package is standard for exporting carton.

### ◆テーピング仕様／TAPING SPECIFICATIONS

### ◆ラジアルリード形(04形)テーピング形状寸法図／DIMENSIONS



### ◆規格表／SPECIFICATION TABLE

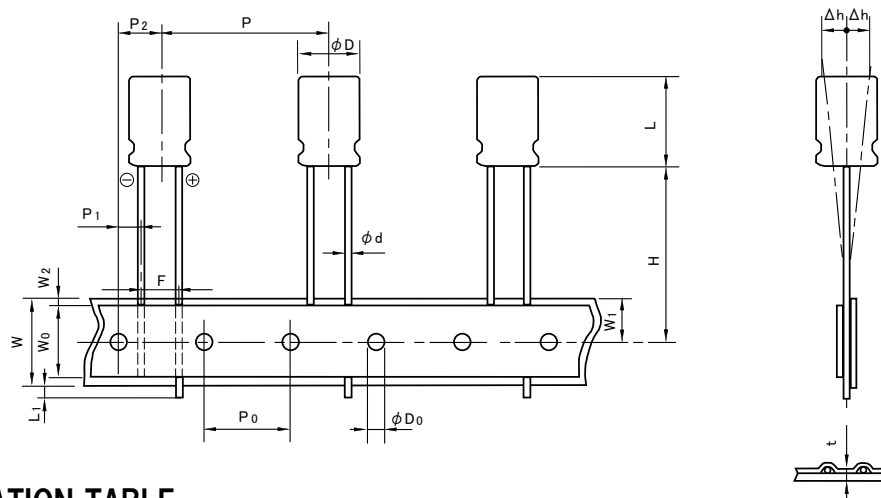
| 項目<br>Item                                                                                                           | 記号<br>Code       | 5mmHeight      |       | 7mm or 7.5mm Height |             |       |       | ※ 許 容 差<br>Tolerance |
|----------------------------------------------------------------------------------------------------------------------|------------------|----------------|-------|---------------------|-------------|-------|-------|----------------------|
|                                                                                                                      |                  | φ 4 ~ φ 8      |       | φ 4 ~ φ 6.3         | φ 4 ~ φ 6.3 | φ 8   |       |                      |
| リード加工記号<br>Taping code                                                                                               |                  | T5             | TZ    | T5                  | TZ          | TA    | T7    |                      |
| 形状寸法図<br>Applicable Fig. No.                                                                                         |                  | Fig.2          | Fig.1 | Fig.2               | Fig.1       | Fig.1 | Fig.2 |                      |
| リード線径<br>Dia. of lead                                                                                                | φ d              | 0.45           |       | 0.45                |             |       |       | ±0.05                |
| 本体高さ<br>Height of body                                                                                               | L                | 6.5            |       | 8.5                 |             |       |       | MAX                  |
| ボディーピッチ<br>Distance from center to center of next body                                                               | P                | 12.7           |       | 12.7                |             |       |       | ±1.0                 |
| 送り穴ピッチ<br>Distance from center to center of next driving hole                                                        | P <sub>0</sub>   | 12.7           |       | 12.7                |             |       |       | ±0.2                 |
| 送り穴位置ズレ（台紙上端との界面にて規定）<br>Distance between center of driving hole and lead<br>（at the upper edge of the carrier tape） | P <sub>1</sub>   | 5.1            | 3.85  | 5.1                 | 3.85        |       | 4.6   | ±0.5                 |
| 送り穴位置ズレ<br>Distance between center of driving hole and body                                                          | P <sub>2</sub>   | 6.35           |       | 6.35                |             |       |       | ±1.0                 |
| リードピッチ（台紙上端との界面にて規定）<br>Pitch of lead（at the upper edge of the carrier tape）                                         | F                | 2.5            | 5.0   | 2.5                 | 5.0         |       | 3.5   | +0.8<br>-0.2         |
| 台紙幅<br>Width of mounting tape                                                                                        | W                | 18.0           |       | 18.0                |             |       |       | ±0.3                 |
| 粘着テープ幅<br>Width of adhesive tape                                                                                     | W <sub>0</sub>   | 5.0            |       | 5.0                 |             |       |       | MIN                  |
| 送り穴位置ズレ<br>Distance between center of driving hole and mounting tape edge                                            | W <sub>1</sub>   | 9.0            |       | 9.0                 |             |       |       | ±0.5                 |
| 粘着テープズレ<br>Max. allowable distance between mounting and adhesive tape edges                                          | W <sub>2</sub>   | 1.5            |       | 1.5                 |             |       |       | MAX                  |
| ボディ下面位置<br>Distance between center of driving hole and bottom of body                                                | H                | 17.5           |       | 17.5                |             | 20.0  |       | ±0.75                |
| リードクリンチ高さ<br>Distance between center of driving hole and clinch part of lead                                         | H <sub>0</sub>   | -              | 16.0  | -                   | 16.0        |       | -     | ±0.5                 |
| リード線はみ出し<br>End of lead                                                                                              | L <sub>1</sub>   | 0.5            |       | 0.5                 |             |       |       | MAX                  |
| 送り穴径<br>Dia. of driving hole                                                                                         | φ D <sub>0</sub> | 4.0            |       | 4.0                 |             |       |       | ±0.2                 |
| ボディの倒れ<br>Off alignment of body top                                                                                  | △h               | 2.0            |       | 2.0                 |             |       |       | MAX                  |
| テープの総厚み<br>Sum of thickness for mounting and adhesive tape without lead dia                                          | t                | 0.6            |       | 0.6                 |             |       |       | ±0.3                 |
| 梱包数量(個)<br>Quantity (pcs)                                                                                            |                  | 2000（φ 8:1000） |       |                     |             |       |       |                      |

※個別に許容差が設定されている場合は、その数値が優先されます。

※For the case that tolerance is specified individually, the value shall have the priority.

### ◆テーピング仕様／TAPING SPECIFICATIONS

Fig.3



### ◆規格表／SPECIFICATION TABLE

| 項目<br>Item                                                                                                            | 記号<br>Code       | 9mm or more Height |       |       |       |                                       |          |         | ※ 許 容 差<br>Tolerance |
|-----------------------------------------------------------------------------------------------------------------------|------------------|--------------------|-------|-------|-------|---------------------------------------|----------|---------|----------------------|
|                                                                                                                       |                  | φ 5, φ 6.3         |       | φ 8   |       | φ 10                                  | φ 12.5   | φ 16    |                      |
| リード加工記号<br>Taping code                                                                                                |                  | T1                 | TA    | TA    | T7    | T8                                    | G4       | GC      |                      |
| 形状寸法図<br>Applicable Fig. No.                                                                                          |                  | Fig.2              | Fig.1 | Fig.1 | Fig.2 | Fig.2                                 | Fig.2    | Fig.3   |                      |
| リード線径<br>Dia. of lead                                                                                                 | φ d              | 0.5                |       | 0.6   |       |                                       | 0.8      |         | ±0.05                |
| 本体高さ<br>Height of body                                                                                                | L                | 13.0               |       | 22.0  |       | 30.0                                  | 42.0     |         | MAX                  |
| ボディーピッチ<br>Distance from center to center of next body                                                                | P                | 12.7               |       |       |       | 15.0                                  | 30.0     |         | ±1.0                 |
| 送り穴ピッチ<br>Distance from center to center of next driving hole                                                         | P <sub>0</sub>   | 12.7               |       |       |       | 15.0                                  | 15.0±0.3 |         | ±0.2                 |
| 送り穴位置ズレ (台紙上端との界面にて規定)<br>Distance between center of driving hole and lead<br>(at the upper edge of the carrier tape) | P <sub>1</sub>   | 5.1                | 3.85  |       | 4.6   | 3.85                                  | 5.0      | 3.75    | ±0.5                 |
| 送り穴位置ズレ<br>Distance between center of driving hole and body                                                           | P <sub>2</sub>   | 6.35               |       |       |       | 7.5                                   |          |         | ±1.0                 |
| リードピッチ (台紙上端との界面にて規定)<br>Pitch of lead (at the upper edge of the carrier tape)                                        | F                | 2.5                | 5.0   |       | 3.5   | 5.0±0.8                               |          | 7.5±0.8 | +0.8<br>-0.2         |
| 台紙幅<br>Width of mounting tape                                                                                         | W                | 18.0               |       |       |       |                                       |          |         | ±0.3                 |
| 粘着テープ幅<br>Width of adhesive tape                                                                                      | W <sub>0</sub>   | 5.0                |       |       |       |                                       |          |         | MIN                  |
| 送り穴位置ズレ<br>Distance between center of driving hole and mounting tape edge                                             | W <sub>1</sub>   | 9.0                |       |       |       |                                       |          |         | ±0.5                 |
| 粘着テープズレ<br>Max. allowable distance between mounting and adhesive tape edges                                           | W <sub>2</sub>   | 1.5                |       |       |       |                                       |          |         | MAX                  |
| ボディ下面位置<br>Distance between center of driving hole and bottom of body                                                 | H                | 18.5               |       | 20.0  |       | 18.5 <sup>+0.75</sup> <sub>-0.5</sub> |          |         | ±0.75                |
| リードクリンチ高さ<br>Distance between center of driving hole and clinch part of lead                                          | H <sub>0</sub>   | —                  | 16.0  |       | —     | —                                     |          |         | ±0.5                 |
| リード線はみ出し<br>End of lead                                                                                               | L <sub>1</sub>   | 0.5                |       |       |       |                                       |          |         | MAX                  |
| 送り穴径<br>Dia. of driving hole                                                                                          | φ D <sub>0</sub> | 4.0                |       |       |       |                                       | ±0.2     |         |                      |
| ボディの倒れ<br>Off alignment of body top                                                                                   | △h               | 2.0                |       |       |       |                                       | MAX      |         |                      |
| テープの総厚み<br>Sum of thickness for mounting and adhesive tape without lead dia                                           | t                | 0.6                |       |       |       |                                       |          |         | ±0.3                 |
| 梱包数量 (個)<br>Quantity (pcs)                                                                                            |                  | 2000               |       | 1000  |       | 500                                   |          | 250     |                      |

※個別に許容差が設定されている場合は、その数値が優先されます。

※For the case that tolerance is specified individually, the value shall have the priority.



### ◆リード線加工仕様／LEAD CUTTING FORMING SPECIFICATIONS

プリント基板取り付けが容易となる様、リードフォーミング、リードカットを行った製品及びプリント基板自立形用に特殊加工（キンクフォーミング）を行った製品を製造しております。

Rubycon provides lead-formed and lead-cut products to facilitate mounting on printed circuit boards, as well as products with leads specially processed (kink formed) for self supporting insertions to printed circuit boards.

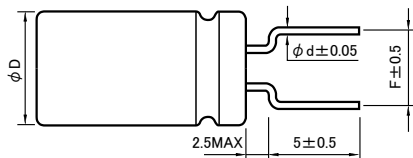
(mm)

#### ・リードフォーミング

Lead forming

( $\phi 5 \sim \phi 8$ )

Lead forming code : FA



| $\phi D$ | 5   | 6.3 | 8   |
|----------|-----|-----|-----|
| $\phi d$ | 0.5 |     | 0.6 |
| F        | 5.0 |     |     |

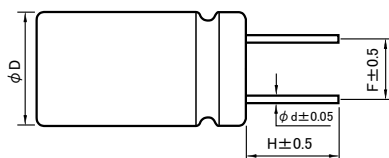
(mm)

#### ・リードカット

Lead cutting

( $\phi 5 \sim \phi 18$ )

Lead cutting code : CA  
CC  
CE



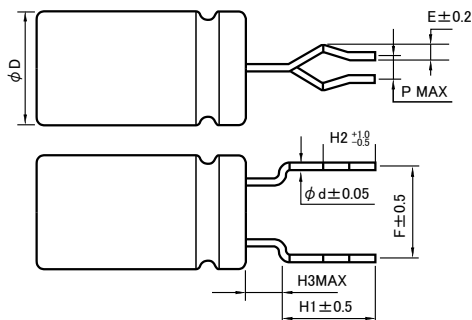
| $\phi D$ | 5                                            | 6.3 | 8   | 10  | 12.5 | 14.5 | 16 | 18 |
|----------|----------------------------------------------|-----|-----|-----|------|------|----|----|
| H        | 5.0.....(CA)<br>4.0.....(CC)<br>3.5.....(CE) |     |     |     |      |      |    |    |
| $\phi d$ | 0.5                                          |     | 0.6 |     | 0.8  |      |    |    |
| F        | 2.0                                          | 2.5 | 3.5 | 5.0 | 7.5  |      |    |    |

#### ・キンクリードフォーミング

Kinked lead forming

( $\phi 5 \sim \phi 8$ )

Kinked lead forming code : KC



(mm)

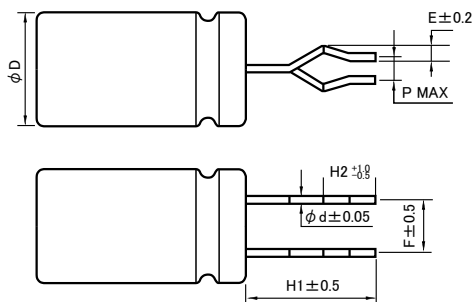
| $\phi$ D | 5   | 6.3 | 8   | 10  | 12.5 | 14.5 | 16 | 18 |
|----------|-----|-----|-----|-----|------|------|----|----|
| H1       | 4.5 |     |     |     |      |      |    |    |
| H2       | 2.8 |     |     |     |      |      |    |    |
| H3       | 2.5 |     |     | —   |      |      |    |    |
| F        | 5.0 |     |     |     |      | 7.5  |    |    |
| P        | 1.0 |     |     |     |      |      |    |    |
| E        | 1.2 |     |     | 1.3 |      |      |    |    |
| $\phi$ d | 0.5 |     | 0.6 |     |      | 0.8  |    |    |

#### ・キンクリードカット

Kinked lead forming

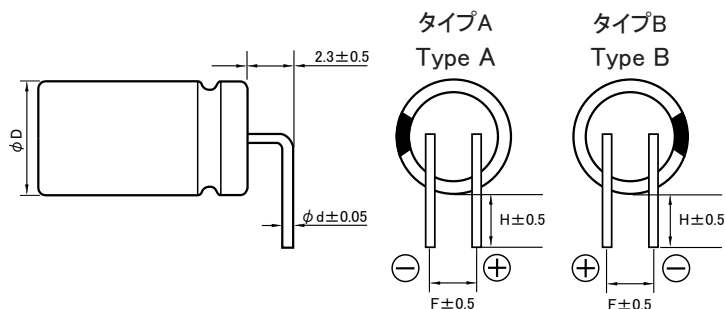
( $\phi 10 \sim \phi 18$ )

Kinked lead cutting code : KC



#### ・横置き対応品 ( $\phi 10 \sim \phi 18$ ) / Low profile with horizontal mounting

(mm)



| $\phi D$ | 10,12.5 |    |     |    | 14.5,16,18 |    |     |    |
|----------|---------|----|-----|----|------------|----|-----|----|
| Code     | RI      | RK | RX  | SG | RI         | RK | RX  | SG |
| $\phi d$ | 0.6     |    |     |    | 0.8        |    |     |    |
| F        | 5.0     |    |     |    | 7.5        |    |     |    |
| H        | 4.0     |    | 3.5 |    | 4.0        |    | 3.5 |    |
| Type     | A       | B  | A   | B  | A          | B  | A   | B  |

適応 object: 表面実装形コンデンサ Chip type capacitors

◆テーピング仕様/TAPING SPECIFICATIONS

Fig.1

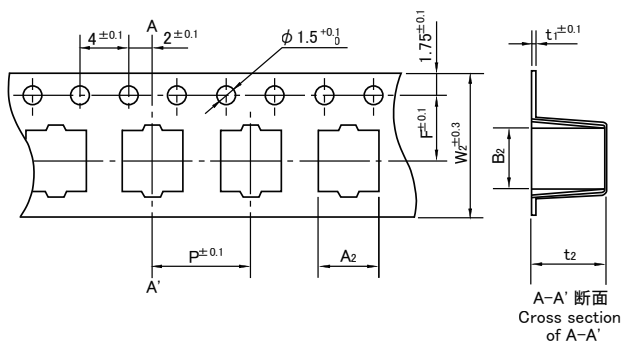
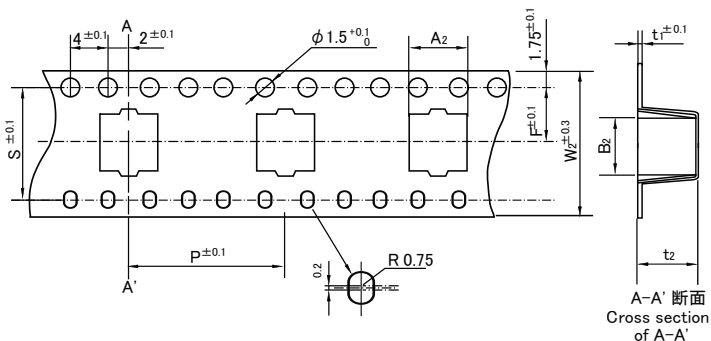
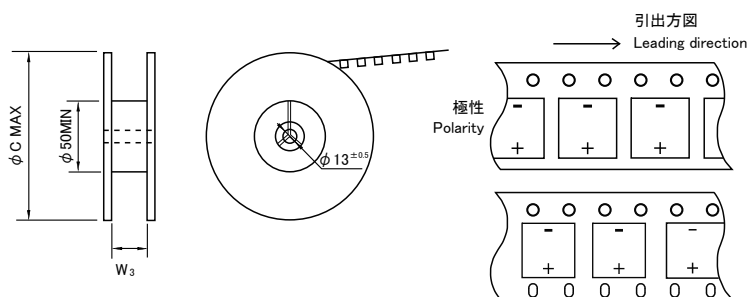


Fig.2



| サイズ<br>Size | W <sub>2</sub><br>(mm) | A <sub>2</sub><br>(mm) | B <sub>2</sub><br>(mm) | P<br>(mm) | t <sub>2</sub><br>(mm) | F<br>(mm) | t <sub>1</sub><br>(mm) | S<br>(mm) | 形状<br>Applicable |
|-------------|------------------------|------------------------|------------------------|-----------|------------------------|-----------|------------------------|-----------|------------------|
| φ4×6.1      | 12.0                   | 4.7                    | 4.7                    | 8         | 6.2                    | 5.5       | 0.4                    | —         | Fig.1            |
| φ5×6.1      | 12.0                   | 5.7                    | 5.7                    | 12        | 6.2                    | 5.5       | 0.4                    | —         |                  |
| φ6.3×6.1    | 16.0                   | 7.0                    | 7.0                    | 12        | 6.2                    | 7.5       | 0.4                    | —         |                  |
| φ6.3×8      | 16.0                   | 7.0                    | 7.0                    | 12        | 8.2                    | 7.5       | 0.4                    | —         |                  |
| φ8×6.5      | 16.0                   | 8.7                    | 8.7                    | 12        | 6.8                    | 7.5       | 0.4                    | —         |                  |
| φ8×10.5     | 24.0                   | 8.7                    | 8.7                    | 16        | 11.0                   | 11.5      | 0.4                    | —         |                  |
| φ10×10.5    | 24.0                   | 10.7                   | 10.7                   | 16        | 11.0                   | 11.5      | 0.4                    | —         | Fig.2            |
| φ12.5×13.5  | 32.0                   | 13.4                   | 13.4                   | 24        | 14.4                   | 14.2      | 0.5                    | 28.4      |                  |
| φ12.5×16    | 32.0                   | 13.4                   | 13.4                   | 24        | 16.3                   | 14.2      | 0.5                    | 28.4      |                  |
| φ16×16.5    | 44.0                   | 17.5                   | 17.5                   | 28        | 17.4                   | 20.2      | 0.5                    | 40.4      |                  |
| φ16×21.5    | 44.0                   | 17.5                   | 17.5                   | 28        | 22.4                   | 20.2      | 0.5                    | 40.4      |                  |
| φ18×16.5    | 44.0                   | 19.5                   | 19.5                   | 32        | 17.4                   | 20.2      | 0.5                    | 40.4      |                  |
| φ18×21.5    | 44.0                   | 19.5                   | 19.5                   | 32        | 22.4                   | 20.2      | 0.5                    | 40.4      |                  |

◆リール/TAPING REEL AND PACKING QUANTITY

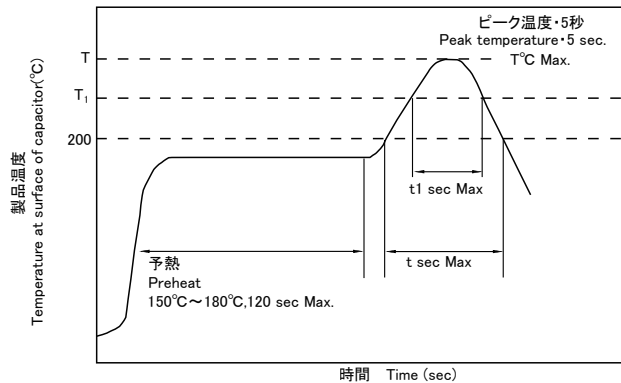


| サイズ<br>Size        | W <sub>3</sub><br>(mm) | φC<br>(mm) | 1リール数量<br>Q'ty(pcs/reel) | 標準外装箱梱包単位<br>Standard Shipping<br>Carton Quantity<br>(pcs/box) |
|--------------------|------------------------|------------|--------------------------|----------------------------------------------------------------|
| φ4×6.1             | 14                     | 382        | 2,000                    | 10,000                                                         |
| φ5×6.1             | 14                     | 382        | 1,000                    | 5,000                                                          |
| φ6.3×6.1           | 18                     | 382        | 1,000                    | 5,000                                                          |
| φ6.3×8             | 18                     | 382        | 900                      | 4,500                                                          |
| φ8×6.5             | 18                     | 382        | 1,000                    | 5,000                                                          |
| φ8×10.5            | 26                     | 382        | 500                      | 2,000                                                          |
| φ10×10.5           | 26                     | 382        | 500                      | 2,000                                                          |
| φ12.5×13.5         | 34                     | 332        | 200                      | 600                                                            |
| φ12.5×16           | 34                     | 332        | 150                      | 450                                                            |
| φ16×16.5, φ18×16.5 | 46                     | 332        | 125                      | 250                                                            |
| φ16×21.5, φ18×21.5 | 46                     | 332        | 75                       | 150                                                            |

◆鉛フリータイプリフロー許容条件／LEAD FREE TYPE REFLOW SOLDERING CONDITION

●ケースサイズ  $\phi 4 \sim \phi 10$ mm品 Size  $\phi 4 \sim \phi 10$

- 1) コンデンサ表面温度が $T^{\circ}\text{C}$ 以下である事。  
Temperature at surface of capacitor shall not exceed  $T^{\circ}\text{C}$ .
- 2) コンデンサ表面温度は $200^{\circ}\text{C}$ 以上の時間が $t$ 秒,  
 $T_1^{\circ}\text{C}$ 以上の時間が $t_1$ 秒を越えない事。  
Period that temperature at surface of capacitor becomes more  
than  $200^{\circ}\text{C}$  and  $T_1^{\circ}\text{C}$  shall not exceed  $t$  and  $t_1$  seconds,  
respectively.
- 3) 予熱は $150^{\circ}\text{C} \sim 180^{\circ}\text{C}$ で120秒以内である事。  
Preheat shall be made at  $150^{\circ}\text{C} \sim 180^{\circ}\text{C}$  and for maximum  
120 seconds.



| Series                                                                                         | Size                   | Rated Voltage        | T(°C)<br>① | T1(°C) | t(sec)<br>② | t1(sec)<br>③ | Reflow cycle |
|------------------------------------------------------------------------------------------------|------------------------|----------------------|------------|--------|-------------|--------------|--------------|
| SEV<br>SKV<br>SGV<br>TZV<br>TKV<br>TPV<br>TLV<br>TRV<br>TXV<br>THV<br>TGV<br>TAV<br>TSV<br>TNV | $\phi 4 \sim \phi 6.3$ | $\leq 50\text{Vdc}$  | 250        | 230    | 70          | 30           | 2            |
|                                                                                                | $\phi 8$               |                      | 245        | 230    | 70          | 30           | 2            |
|                                                                                                | $\phi 10$              | $\leq 100\text{Vdc}$ | 240        | 230    | 60          | 30           | 2            |
|                                                                                                | $\phi 8, 10$           | $\geq 160\text{Vdc}$ | 240        | 230    | 50          | 20           | 2            |
| SJV<br>SLV                                                                                     | $\phi 4 \sim \phi 6.3$ | $\leq 50\text{Vdc}$  | 240        | 220    | 60          | 40           | 1            |
| JGV<br>JZV                                                                                     | $\phi 4 \sim \phi 6.3$ |                      | 260        | 217    | -           | 60           | 2            |
|                                                                                                | $\phi 8, 10$           | $\leq 50\text{Vdc}$  | 250        | 217    | -           | 60           | 2            |

①ピーク温度 Peak temperature

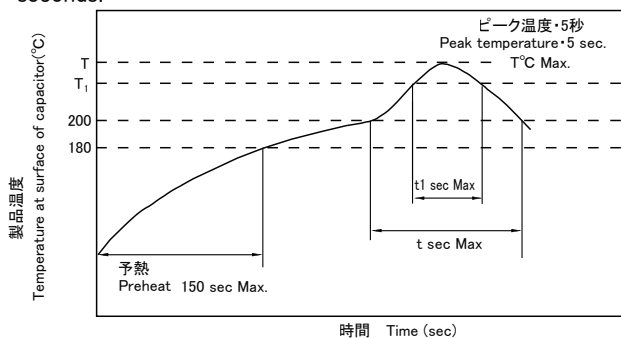
② $200^{\circ}\text{C}$ を超える時間<MAX> Time more than  $200^{\circ}\text{C}$

③ $T_1$ を超える時間<MAX> Time more than  $T_1$

※許容条件を越える場合は御相談ください。  
Please contact us if the condition is over the maximum.

●ケースサイズ  $\phi 12.5 \sim \phi 18$ mm品 Size  $\phi 12.5 \sim \phi 18$

- 1) コンデンサ表面温度が $T^{\circ}\text{C}$ 以下である事。 Temperature at surface of capacitor shall not exceed  $T^{\circ}\text{C}$ .
- 2) コンデンサ表面温度は $200^{\circ}\text{C}$ 以上の時間が $t$ 秒,  $T_1^{\circ}\text{C}$ 以上の時間が $t_1$ 秒を越えない事。  
Period that temperature at surface of capacitor becomes more than  
 $200^{\circ}\text{C}$  and  $T_1^{\circ}\text{C}$  shall not exceed  $t$  and  $t_1$  seconds, respectively.
- 3) 予熱は $100^{\circ}\text{C} \sim 180^{\circ}\text{C}$ で150秒以内である事。  
Preheat shall be made at  $100^{\circ}\text{C} \sim 180^{\circ}\text{C}$  and for maximum 150  
seconds.



| Series                                        | Size                     | Rated Voltage        | T(°C)<br>① | T1(°C) | t(sec)<br>② | t1(sec)<br>③ | Reflow cycle |
|-----------------------------------------------|--------------------------|----------------------|------------|--------|-------------|--------------|--------------|
| SEV<br>SKV<br>SGV<br>TLV<br>TRV<br>TGV<br>TSV | $\phi 12.5 \sim \phi 18$ | $\leq 50\text{Vdc}$  | 240        | 230    | 60          | 30           | 2            |
|                                               |                          | 63Vdc<br>100Vdc      | 240        | 230    | 50          | 20           | 2            |
|                                               |                          | $\geq 160\text{Vdc}$ | 230        | 220    | 50          | 20           | 2            |

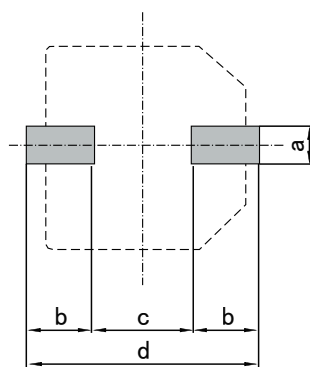
①ピーク温度 Peak temperature

② $200^{\circ}\text{C}$ を超える時間<MAX> Time more than  $200^{\circ}\text{C}$

③ $T_1$ を超える時間<MAX> Time more than  $T_1$

※許容条件を越える場合は御相談ください。  
Please contact us if the condition is over the maximum.

◆推奨ランドパターン／RECOMMENDED LAND PATTERN



| Size                  | a   | b   | c   | d    |
|-----------------------|-----|-----|-----|------|
| $\phi 4$              | 1.6 | 2.6 | 1.0 | 6.2  |
| $\phi 5$              | 1.6 | 3.0 | 1.4 | 7.4  |
| $\phi 6.3$            | 1.6 | 3.5 | 2.1 | 9.1  |
| $\phi 8 \times 6.5$   | 1.6 | 4.5 | 2.1 | 11.1 |
| $\phi 8 \times 10.5$  | 2.2 | 4.1 | 3.0 | 11.2 |
| $\phi 10 \times 10.5$ | 2.2 | 4.3 | 4.5 | 13.1 |
| $\phi 12.5$           | 2.5 | 6.0 | 5.0 | 17   |
| $\phi 16$             | 3   | 6.5 | 8.0 | 21   |
| $\phi 18$             | 3   | 7.5 | 8.0 | 23   |

◆補助端子付き耐振動構造品

Vibration proof packages with the dummy terminal

- ケースサイズφ8以上のチップ形コンデンサに対し、耐振動構造対応します。  
For chip Aluminum electrolytic capacitors more than case size φ 8, vibration proof packages supports.

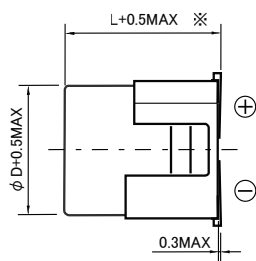


◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------------------------|---------------------|
| □□□                   | □□□□            | □□□□□               | □                                | □□□           | VB                                      | DXL                 |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 耐振動構造品記号<br>Vibration proof package No. | ケースサイズ<br>Case Size |

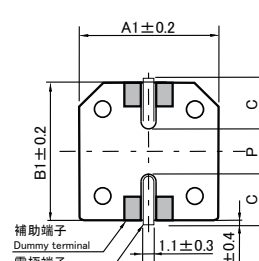
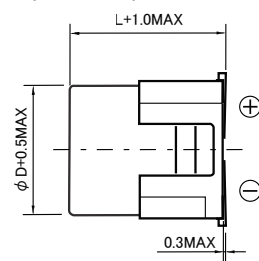
◆寸法図／DIMENSIONS

<φ8, φ10>



※ 160V以上品はL+1.0MAX

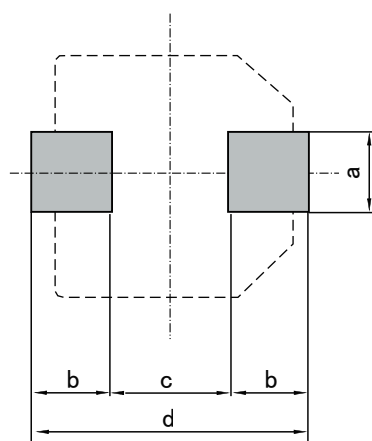
<φ12.5~φ18>



(mm)

| φD    | L    | A1   | B1   | C   | P   |
|-------|------|------|------|-----|-----|
| φ8    | 10.5 | 8.3  | 8.3  | 3.1 | 3.1 |
| φ10   | 10.5 | 10.3 | 10.3 | 3.4 | 4.5 |
| φ12.5 | 13.5 | 13   | 13   | 4.9 | 4.5 |
| φ12.5 | 16   | 13   | 13   | 4.9 | 4.5 |
| φ16   | 16.5 | 17   | 17   | 6   | 6.8 |
| φ16   | 21.5 | 17   | 17   | 6   | 6.8 |
| φ18   | 16.5 | 19   | 19   | 7   | 6.8 |
| φ18   | 21.5 | 19   | 19   | 7   | 6.8 |

◆推奨ランドパターン／RECOMMENDED LAND PATTERN



(mm)

| Size     | a   | b   | c   | d    |
|----------|-----|-----|-----|------|
| φ8X10.5  | 4.2 | 4.5 | 2.5 | 11.5 |
| φ10X10.5 | 4.2 | 4.8 | 3.9 | 13.5 |
| φ12.5    | 6.4 | 6.2 | 3.9 | 16.3 |
| φ16      | 7   | 7.8 | 4.7 | 20.3 |
| φ18      | 7   | 8.8 | 4.7 | 22.3 |

◆基板自立形 呼称方法/SNAP-IN TYPE PART NUMBER

| □□□                |      | □□□□           |      | □□□□□       |      | □                                        | □□□         | □□                                     | DXL                                       |
|--------------------|------|----------------|------|-------------|------|------------------------------------------|-------------|----------------------------------------|-------------------------------------------|
| 定格電圧               |      | シリーズ名          |      | 静電容量        |      | 静電容量許容差                                  | 副記号         | 端子記号                                   | ケースサイズ                                    |
| Rated Voltage      |      | Series         |      | Capacitance |      | Capaciatnce Tolerance                    | Option      | Terminal Code                          | Case Size                                 |
| Rated Voltage(Vdc) | Code | Cap.( $\mu$ F) | Code | Tolerance   | Code | Option                                   | Code        | Terminal Type                          | Code                                      |
| 50                 | 50   | 22             | 22   | $\pm 20\%$  | M    | PETスリーブ、底板なし<br>PET Sleeve without plate | EFC         | 標準端子<br>Standard Terminal              | SN                                        |
| 100                | 100  | 560            | 560  | $\pm 10\%$  | K    | PVCスリーブ、底板なし<br>PVC Sleeve without plate | OOE         | 逆差し防止端子<br>Keying Terminal             | EN                                        |
| 450                | 450  | 1000           | 1000 |             |      | PVCスリーブ、底板あり<br>PVC Sleeve with plate    | なし<br>Blank | 耐振・逆差し防止端子<br>Vibration proof terminal | LN                                        |
|                    |      |                |      |             |      |                                          |             |                                        | 20X25<br>22X30<br>25X35<br>30X40<br>35X45 |

ご注文の際には、定格電圧、シリーズ名、静電容量、底板、端子形状、ケースサイズまでご連絡ください。  
Please Indicate the above information when ordering

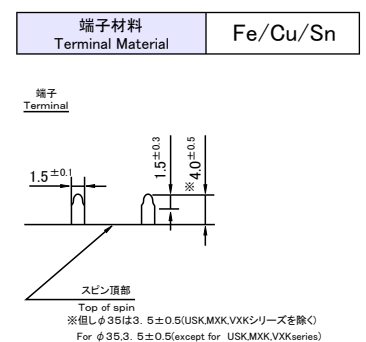
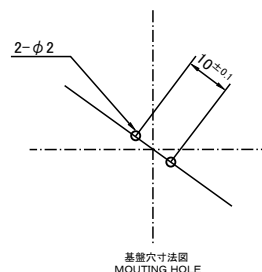
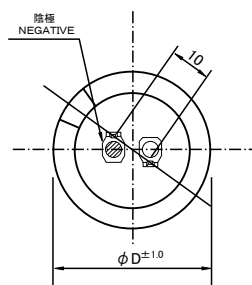
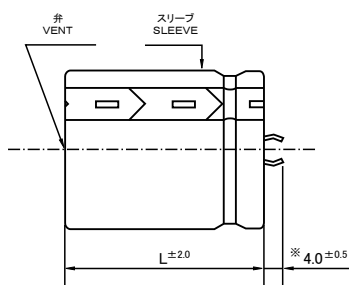
例): Example    200      MXG      820      M      EFC      SN      25X35  
                         450      USG      330      M      EFC      SN      30X35

◆基板自立形 梱包単位/SNAP-IN TYPE PACKAGING SPECIFICATION

| 製品サイズ<br>SIZE (mm) | 梱包単位<br>PACKAGE QUANTITY<br>(pcs/box) |
|--------------------|---------------------------------------|
| $\phi 20$          | 200                                   |
| $\phi 22$          | 200                                   |
| $\phi 25$          | 200                                   |
| $\phi 30$          | 100                                   |
| $\phi 35$          | 100<br>(BN端子 Terminal Code BN: 50)    |
| $\phi 40$          | 50                                    |
| $\phi 45$          | 50                                    |

◆端子形状/Terminal TYPE

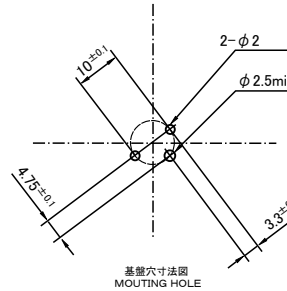
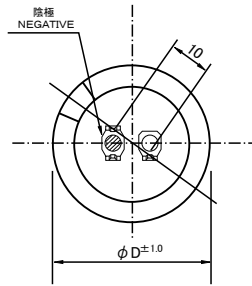
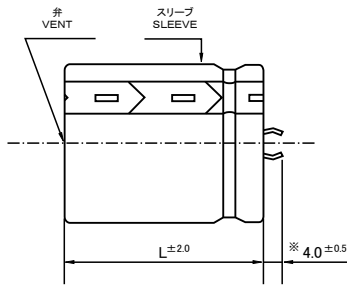
●標準端子形状(Standard terminal type)





## ◆端子形状/Terminal Type

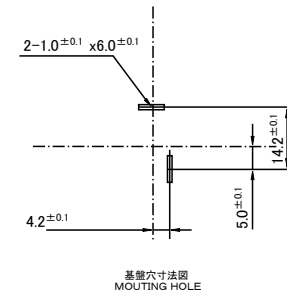
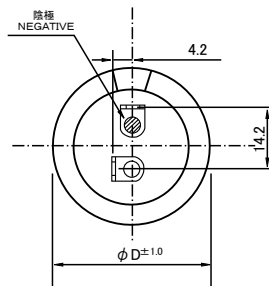
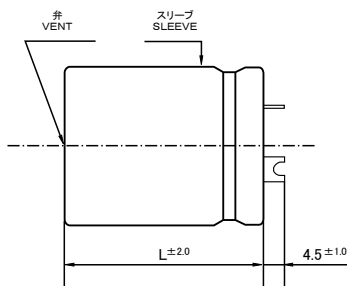
### ●逆差し防止端子形状(Keying terminal type)



| 端子記号<br>Terminal Code | EN |
|-----------------------|----|
|-----------------------|----|

| 端子材料<br>Terminal Material | Fe/Cu/Sn |
|---------------------------|----------|
|---------------------------|----------|

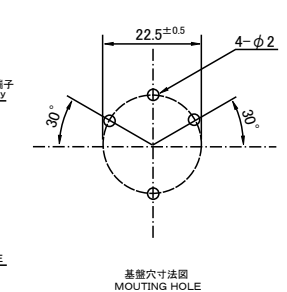
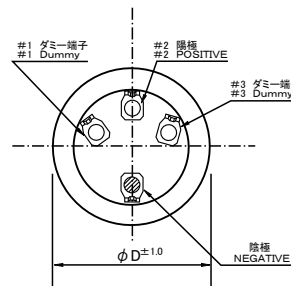
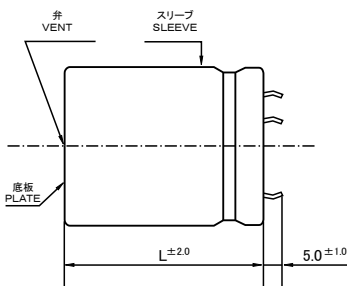
### ●耐振・逆差し防止端子形状(Vibration proof terminal type)



| 端子記号<br>Terminal Code | LN |
|-----------------------|----|
|-----------------------|----|

| 端子材料<br>Terminal Material | Fe/Cu/Sn |
|---------------------------|----------|
|---------------------------|----------|

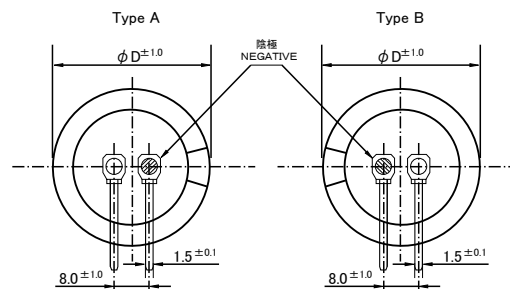
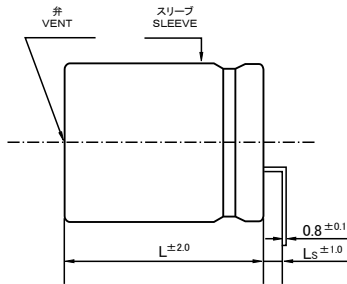
### ●多端子形状(4pin snap-in terminal type) 対象サイズφ35~φ45



| 端子記号<br>Terminal Code | BN |
|-----------------------|----|
|-----------------------|----|

| 端子材料<br>Terminal Material | Fe/Cu/Sn |
|---------------------------|----------|
|---------------------------|----------|

### ●横置き端子形状(Horizontal mount terminal type)



| 端子記号<br>Terminal Code | φD      | Ls        | タイプ<br>Type |
|-----------------------|---------|-----------|-------------|
| FA                    | φ22~φ30 | 2.0 ± 0.5 | A           |
| FN                    | φ20~φ25 | 4.0 ± 1.0 | A           |
| FB                    | φ22~φ30 | 2.0 ± 0.5 | B           |
| FR                    | φ20~φ25 | 4.0 ± 1.0 | B           |

・記載以外の端子形状については、別途ご相談ください。  
Please consult us about the other terminal type.

### ◆ネジ端子形 呼称方法／SCREW TERMINAL TYPE PART NUMBER

| □□□                                                                                                                                | □□□□               | □□□□□               | □                                | □□□                 | □□                        | DXL                 |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|----------------------------------|---------------------|---------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------|----------|------|------|------|------|------|-------------------------------------------------------------------------------------------------------------------------|-----------|------|------|---|------|---|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|------------------------------------|----------------------------------------------------|------------------|
| 定格電圧<br>Rated Voltage                                                                                                              | シリーズ名<br>Series    | 静電容量<br>Capacitance | 静電容量許容差<br>Capaciatnce Tolerance | 副記号<br>Option<br>※1 | バンド記号<br>Clamp Code<br>※2 | ケースサイズ<br>Case Size |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| <table><tr><td>Rated Voltage(Vdc)</td><td>Code</td></tr><tr><td>350</td><td>350</td></tr><tr><td>450</td><td>450</td></tr></table> | Rated Voltage(Vdc) | Code                | 350                              | 350                 | 450                       | 450                 | <table><tr><td>Cap.(μF)</td><td>Code</td></tr><tr><td>5600</td><td>5600</td></tr><tr><td>8200</td><td>8200</td></tr></table> | Cap.(μF) | Code | 5600 | 5600 | 8200 | 8200 | <table><tr><td>Tolerance</td><td>Code</td></tr><tr><td>±20%</td><td>M</td></tr><tr><td>±10%</td><td>K</td></tr></table> | Tolerance | Code | ±20% | M | ±10% | K |  |  | <table><tr><td>TY:3点止めバンド<br/>Three stopping clamp</td></tr><tr><td>TI:2点止めバンド<br/>Two stopping clamp</td></tr><tr><td>NB:バンド無し<br/>Without stopping clamp</td></tr></table> | TY:3点止めバンド<br>Three stopping clamp | TI:2点止めバンド<br>Two stopping clamp | NB:バンド無し<br>Without stopping clamp | <table><tr><td>51×138<br/>90×241</td></tr></table> | 51×138<br>90×241 |
| Rated Voltage(Vdc)                                                                                                                 | Code               |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| 350                                                                                                                                | 350                |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| 450                                                                                                                                | 450                |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| Cap.(μF)                                                                                                                           | Code               |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| 5600                                                                                                                               | 5600               |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| 8200                                                                                                                               | 8200               |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| Tolerance                                                                                                                          | Code               |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| ±20%                                                                                                                               | M                  |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| ±10%                                                                                                                               | K                  |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| TY:3点止めバンド<br>Three stopping clamp                                                                                                 |                    |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| TI:2点止めバンド<br>Two stopping clamp                                                                                                   |                    |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| NB:バンド無し<br>Without stopping clamp                                                                                                 |                    |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |
| 51×138<br>90×241                                                                                                                   |                    |                     |                                  |                     |                           |                     |                                                                                                                              |          |      |      |      |      |      |                                                                                                                         |           |      |      |   |      |   |  |  |                                                                                                                                                                              |                                    |                                  |                                    |                                                    |                  |

ご注文の際には、定格電圧、シリーズ名、静電容量、バンド記号、ケースサイズまでご連絡ください。  
Please indicate the above information, when ordering.

例): Example

|                                                          |     |     |      |   |    |        |
|----------------------------------------------------------|-----|-----|------|---|----|--------|
| ・Y タイプバンド(3点止めバンド)<br>Y-type clamp(Three stopping clamp) | 400 | LSU | 5600 | M | TY | 77X141 |
|----------------------------------------------------------|-----|-----|------|---|----|--------|

※1 副記号:標準品はblankとなります。

Option: Standard item is blank.

※2 スタッド固定タイプのバンド記号については、別途お問い合わせください。

Please contact us for clamp code of stud mounting screw terminal capacitors.

### ◆ネジ端子形 梱包単位／SCREW TERMINAL TYPE PACKAGING SPECIFICATION

| 製品サイズ<br>SIZE (mm) |         | 梱包単位<br>PACKAGE QUANTITY<br>(pcs/box) | 箱寸法<br>PACKAGE DIMENSIONS<br>W×D×H(mm) |
|--------------------|---------|---------------------------------------|----------------------------------------|
| φ                  | L       |                                       |                                        |
| φ 36               | ～68     | 60                                    | 460×420×255                            |
|                    | 69～88   | 60                                    | 460×420×295                            |
|                    | 89～118  | 60                                    | 460×420×355                            |
|                    | 119～138 | 60                                    | 460×420×395                            |
| φ 51               | ～118    | 30                                    | 560×505×215                            |
|                    | 119～148 | 30                                    | 560×505×245                            |
| φ 64               | ～118    | 20                                    | 525×485×215                            |
|                    | 119～149 | 20                                    | 525×485×245                            |
|                    | 150～198 | 10                                    | 551×340×295                            |

| 製品サイズ<br>SIZE (mm) |         | 梱包単位<br>PACKAGE QUANTITY<br>(pcs/box) | 箱寸法<br>PACKAGE DIMENSIONS<br>W×D×H(mm) |
|--------------------|---------|---------------------------------------|----------------------------------------|
| φ                  | L       |                                       |                                        |
| φ 77               | ～118    | 10                                    | 680×320×215                            |
|                    | 119～148 | 10                                    | 680×320×245                            |
|                    | 149～198 | 8                                     | 551×340×295                            |
|                    | 199～248 | 6                                     | 450×340×345                            |
| φ 90               | ～118    | 10                                    | 680×320×215                            |
|                    | 119～148 | 10                                    | 680×320×245                            |
|                    | 149～198 | 8                                     | 551×340×295                            |
|                    | 199～248 | 6                                     | 450×340×345                            |

※端子ネジ(六角ボルトネジ+)とバンドは、製品に取り付けられていません。(同一梱包箱内に添付されます。)

<Note> The terminal bolt and clamp is separately supplied and not attached to the product.

### ◆ネジの締め付けトルクと許容電流値／Tightening torque of bolt and Permissible current of terminal

| 取り付け<br>バンドネジ<br>Clamp Bolt | 推奨締め付けトルク<br>Recommended<br>Tightening torque |
|-----------------------------|-----------------------------------------------|
| M3                          | 0.6[N・m]                                      |
| M4                          | 1.3[N・m]                                      |

| 端子<br>Terminal | 推奨締め付けトルク<br>(許容値)<br>Recommended<br>Tightening torque<br>(Permissible Range) | 端子許容電流<br>Permissible Current<br>of Terminal |
|----------------|-------------------------------------------------------------------------------|----------------------------------------------|
| M5             | 2.2(1.5～3.2)[N・m]                                                             | 60 [A r.m.s.]                                |
| M6             | 3.2(3.0～3.5)[N・m]                                                             | 100 [A r.m.s.]                               |
| M8             | 6.3(5.8～6.8)[N・m]                                                             | 120 [A r.m.s.]                               |

## SGV series

105°C 2000~5000時間 標準品  
Load Life : 105°C 2000~5000 hours. Standard

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                                                                                                          | 特性 Characteristics                                                                                                                                                                    |      |                                                            |      |      |                                                                                                       |      |      |                            |             |                      |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------------------------|------|------|----------------------------|-------------|----------------------|--------------|
| カテゴリ温度範囲<br>Category Temperature Range                                                                                                                           | -55~+105℃                                                                                                                                                                             |      |                                                            |      |      | -40~+105℃                                                                                             |      |      |                            | -25~+105℃   |                      |              |
| 定格電圧範囲<br>Rated Voltage Range                                                                                                                                    | 6.3~50Vdc                                                                                                                                                                             |      |                                                            |      |      | 63,100Vdc                                                                                             |      |      |                            | 160~450Vdc  |                      |              |
| 静電容量許容差<br>Capacitance Tolerance                                                                                                                                 | ±20%(20℃, 120Hz)                                                                                                                                                                      |      |                                                            |      |      |                                                                                                       |      |      |                            |             |                      |              |
| 漏れ電流<br>Leakage Current (MAX)                                                                                                                                    | 6.3~100Vdc                                                                                                                                                                            |      |                                                            |      |      | 160~450Vdc                                                                                            |      |      |                            |             |                      |              |
|                                                                                                                                                                  | I=0.01CV又は3μAのいずれか大なる値以下<br>(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater.<br>(After 2 minutes)                                                                                 |      |                                                            |      |      | I=0.04CV+100μA以下(1分値)<br>I=0.04CV+100μA (1minute)<br>I=0.02CV+25μA以下(5分値)<br>I=0.02CV+25μA (5minutes) |      |      |                            |             |                      |              |
|                                                                                                                                                                  | I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)                                                                                                                                                     |      |                                                            |      |      |                                                                                                       |      |      |                            |             |                      |              |
|                                                                                                                                                                  | Leakage Current                                                                                                                                                                       |      |                                                            |      |      | Capacitance                                                                                           |      |      | Rated Voltage              |             |                      |              |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                                                                                                         | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                           | 6.3  | 10                                                         | 16   | 25   | 35                                                                                                    | 50   | 63   | 100                        | 160<br>~250 | 400<br>450           | (20℃, 120Hz) |
|                                                                                                                                                                  | φ4, φ5, φ6.3X6.1                                                                                                                                                                      | 0.30 | 0.24                                                       | 0.20 | 0.16 | 0.14                                                                                                  | 0.12 | -    | -                          | -           | -                    |              |
|                                                                                                                                                                  | φ6.3X8, φ8~φ18                                                                                                                                                                        | 0.35 | 0.26                                                       | 0.24 | 0.18 | 0.14                                                                                                  | 0.12 | 0.12 | 0.10                       | 0.15        | 0.20                 |              |
| 1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When rated capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF. |                                                                                                                                                                                       |      |                                                            |      |      |                                                                                                       |      |      |                            |             |                      |              |
| 耐久性<br>Endurance                                                                                                                                                 | 105℃中で右表の時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃,<br>the capacitors shall meet the following requirements. |      |                                                            |      |      |                                                                                                       |      |      |                            |             |                      |              |
|                                                                                                                                                                  | 静電容量変化率<br>Capacitance Change                                                                                                                                                         |      | 初期値の ±25% 以内<br>Within ±25% of the initial value.          |      |      |                                                                                                       |      |      | 定格電圧(Vdc)<br>Rated Voltage |             | 時間(hrs)<br>Life Time |              |
|                                                                                                                                                                  | 損失角の正接<br>Dissipation Factor                                                                                                                                                          |      | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      |      |                                                                                                       |      |      | 6.3~100                    |             | 2000                 |              |
|                                                                                                                                                                  | 漏れ電流<br>Leakage Current                                                                                                                                                               |      | 規格値以下<br>Not more than the specified value.                |      |      |                                                                                                       |      |      | 160~450                    |             | 5000                 |              |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX)                                                                                         | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                           | 6.3  | 10                                                         | 16   | 25   | 35                                                                                                    | 50   | 63   | 100                        | 160<br>~250 | 400<br>450           | (120Hz)      |
|                                                                                                                                                                  | Z(-25℃)/Z(20℃)                                                                                                                                                                        | 4    | 3                                                          | 2    | 2    | 2                                                                                                     | 2    | 2    | 2                          | 3           | 6                    |              |
|                                                                                                                                                                  | Z(-40℃)/Z(20℃)                                                                                                                                                                        | 8    | 8                                                          | 4    | 4    | 3                                                                                                     | 3    | 5    | 5                          | -           | -                    |              |

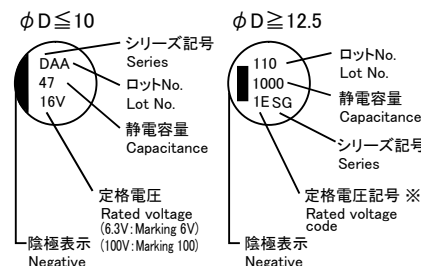
### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | SGV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60(50) | 120  | 500  | 1k   | 10k≤ |
|-----------------------|--------|------|------|------|------|
| 係数<br>Coefficient     |        |      |      |      |      |
| 0.47~1μF              | 0.50   | 1.00 | 1.20 | 1.30 | 1.50 |
| 2.2~6.8μF             | 0.65   | 1.00 | 1.20 | 1.30 | 1.50 |
| 10~68μF               | 0.80   | 1.00 | 1.20 | 1.30 | 1.50 |
| 100~1000μF            | 0.80   | 1.00 | 1.10 | 1.15 | 1.20 |
| 2200~6800μF           | 0.80   | 1.00 | 1.05 | 1.10 | 1.15 |

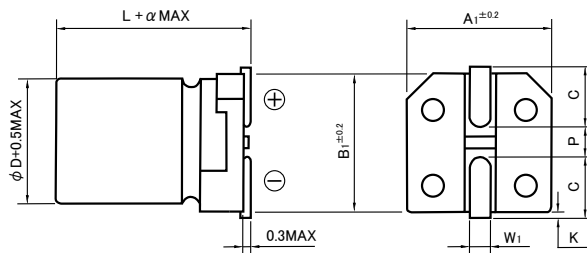
### ◆表示／MARKING



### ※電圧記号 Voltage code

|                            |     |     |     |     |
|----------------------------|-----|-----|-----|-----|
| 定格電圧(Vdc)<br>Rated Voltage | 6.3 | 10  | 16  | 25  |
| 電圧記号<br>Voltage code       | 0J  | 1A  | 1C  | 1E  |
| 定格電圧(Vdc)<br>Rated Voltage | 35  | 50  | 63  | 100 |
| 電圧記号<br>Voltage code       | 1V  | 1H  | 1J  | 2A  |
| 定格電圧(Vdc)<br>Rated Voltage | 160 | 200 | 250 | 400 |
| 電圧記号<br>Voltage code       | 2C  | 2D  | 2E  | 2G  |
| 定格電圧(Vdc)<br>Rated Voltage | 450 |     |     |     |
| 電圧記号<br>Voltage code       | 2W  |     |     |     |

◆寸法図／DIMENSIONS



(mm)

| $\phi D$ | L    | A1   | B1   | C   | W1      | P   | K       | $\alpha$ |
|----------|------|------|------|-----|---------|-----|---------|----------|
| 4        | 6.1  | 4.3  | 4.3  | 1.8 | 0.5~0.8 | 1.0 | 0.5MAX  | 0        |
| 5        | 6.1  | 5.3  | 5.3  | 2.2 | 0.5~0.8 | 1.3 | 0.5MAX  | 0        |
| 6.3      | 6.1  | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 | 0.5MAX  | 0        |
| 6.3      | 8    | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 | 0.5MAX  | 0        |
| 8        | 6.5  | 8.3  | 8.3  | 3.4 | 0.5~0.8 | 2.2 | 0.5MAX  | 0        |
| 8        | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 | 0.5MAX  | ※        |
| 10       | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 | 0.5MAX  | ※        |
| 12.5     | 13.5 | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5      |
| 12.5     | 16   | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5      |
| 16       | 16.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |
| 16       | 21.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |
| 18       | 16.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |
| 18       | 21.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |

※ 6.3~100V品 :  $\alpha=0$  160~400V品 :  $\alpha=0.2$

◆標準品一覧表／STANDARD SIZE

Size  $\phi D \times L$ (mm), Rated Ripple Current (mA r.m.s./105°C, 120Hz)

| Vdc     | Cap<br>( $\mu$ F) | Size<br>( $\phi$ DXL) | Ripple  | Vdc | Cap<br>( $\mu$ F) | Size<br>( $\phi$ DXL) | Ripple  | Vdc     | Cap<br>( $\mu$ F) | Size<br>( $\phi$ DXL) | Ripple |
|---------|-------------------|-----------------------|---------|-----|-------------------|-----------------------|---------|---------|-------------------|-----------------------|--------|
| 6.3     | 22                | 4×6.1                 | 26      | 35  | 4.7               | 4×6.1                 | 15      | 160     | 12                | 8×10.5                | 115    |
|         | 33                | 4×6.1                 | 29      |     | 10                | 5×6.1                 | 28      |         | 22                | 10×10.5               | 150    |
|         | 47                | 5×6.1                 | 46      |     | 22                | 6.3×6.1               | 55      |         | 39                | 12.5×13.5             | 250    |
|         | 100               | 6.3×6.1               | 71      |     | 33                | 6.3×8                 | 76      |         | 47                | 12.5×16               | 310    |
|         | 220               | 6.3×8                 | 121     |     |                   | 8×6.5                 | 84      |         | 68                | 16×16.5               | 400    |
|         | 470               | 8×10.5                | 210     |     | 100               | 8×10.5                | 180     |         | 100               | 18×16.5               | 480    |
|         | 1000              | 10×10.5               | 495     |     |                   | 10×10.5               | 305     |         | 120               | 16×21.5               | 560    |
|         | 2200              | 12.5×13.5             |         |     | 10×10.5           | 450                   | 150     |         | 18×21.5           | 690                   |        |
|         | 3300              | 16×21.5               | 930     |     | 12.5×13.5         | 460                   | 10      |         | 8×10.5            | 100                   |        |
|         | 4700              | 18×16.5               |         |     | 16×16.5           | 490                   | 15      | 10×10.5 | 130               |                       |        |
|         | 6800              | 18×21.5               | 1200    |     | 1000              | 16×21.5               | 750     | 33      | 12.5×13.5         | 230                   |        |
|         | 18×21.5           | 1350                  | 18×16.5 |     |                   | 42                    |         | 12.5×16 | 270               |                       |        |
| 10      | 33                | 5×6.1                 | 43      | 50  | 0.47              | 4×6.1                 | 4       | 200     | 56                | 16×16.5               | 350    |
|         | 100               | 6.3×6.1               | 71      |     | 1                 | 4×6.1                 | 8       |         | 68                | 18×16.5               | 440    |
|         | 330               | 8×10.5                | 195     |     | 2.2               | 4×6.1                 | 11      |         | 100               | 16×21.5               | 500    |
|         | 470               | 8×10.5                | 210     |     | 3.3               | 4×6.1                 | 14      |         | 120               | 18×21.5               | 620    |
|         |                   | 10×10.5               | 440     |     | 4.7               | 5×6.1                 | 19      |         | 6.8               | 8×10.5                | 85     |
|         | 1000              | 12.5×16               | 500     |     | 10                | 6.3×6.1               | 35      | 12      | 10×10.5           | 115                   |        |
|         | 2200              | 16×16.5               | 810     |     | 22                | 6.3×8                 | 67      | 22      | 12.5×13.5         | 190                   |        |
|         | 3300              | 16×21.5               | 1000    |     |                   | 8×6.5                 | 70      | 33      | 12.5×16           | 240                   |        |
|         | 4700              | 18×21.5               |         |     | 1200              | 33                    | 8×10.5  | 140     | 47                | 16×16.5               | 320    |
| 16      | 10                | 4×6.1                 | 28      |     | 47                | 8×10.5                | 167     | 56      | 18×16.5           | 400                   |        |
|         | 22                | 5×6.1                 | 39      |     |                   | 10×10.5               | 180     | 68      | 16×21.5           | 450                   |        |
|         | 47                | 6.3×6.1               | 70      |     |                   | 100                   | 8×10.5  | 230     | 100               | 18×21.5               | 560    |
|         | 100               | 6.3×8                 | 111     |     |                   |                       | 10×10.5 | 315     | 2.7               | 8×10.5                | 45     |
|         | 220               | 8×10.5                | 185     |     |                   | 220                   | 12.5×16 | 380     | 4.7               | 10×10.5               | 75     |
|         | 330               | 8×10.5                | 290     |     |                   | 330                   | 16×16.5 | 470     | 10                | 12.5×13.5             | 135    |
|         |                   | 10×10.5               | 440     |     |                   | 470                   | 16×21.5 | 550     | 12                | 12.5×16               | 165    |
|         | 470               | 8×10.5                | 320     |     |                   |                       | 18      |         | 16×16.5           | 220                   |        |
|         | 1000              | 10×10.5               | 460     |     |                   | 1000                  | 18×21.5 | 820     | 22                | 18×16.5               | 280    |
|         |                   | 16×16.5               | 630     |     |                   | 22                    | 8×10.5  | 55      | 33                | 16×21.5               | 320    |
|         | 25                | 2200                  | 16×21.5 | 930 |                   | 33                    | 8×10.5  | 115     | 47                | 18×21.5               | 400    |
|         |                   | 18×16.5               | 330     |     | 47                | 8×10.5                | 120     | 6.8     | 12.5×13.5         | 110                   |        |
| 3300    |                   | 18×21.5               | 1150    | 100 | 12.5×16           | 225                   | 8.2     | 12.5×16 | 150               |                       |        |
| 33      |                   | 6.3×6.1               | 65      | 220 | 16×16.5           | 385                   | 12      | 16×16.5 | 195               |                       |        |
|         |                   | 6.3×8                 | 79      |     | 330               | 16×21.5               | 490     | 18      | 18×16.5           | 245                   |        |
|         | 8×6.5             | 91                    | 18×16.5 |     |                   | 22                    |         | 16×21.5 | 275               |                       |        |
|         | 100               | 8×10.5                | 180     |     | 470               | 18×21.5               | 590     | 27      | 18×21.5           | 345                   |        |
|         | 25                | 220                   | 8×10.5  | 320 | 100               | 10                    | 8×10.5  | 65      | 450               |                       |        |
| 10×10.5 |                   |                       | 355     | 22  |                   | 10×10.5               | 90      |         |                   |                       |        |
| 330     |                   | 10×10.5               | 450     | 33  |                   | 10×10.5               | 135     |         |                   |                       |        |
|         |                   | 12.5×13.5             |         | 47  |                   | 12.5×13.5             | 160     |         |                   |                       |        |
| 470     |                   | 10×10.5               | 490     | 100 |                   | 16×16.5               | 285     |         |                   |                       |        |
| 1000    |                   | 16×21.5               | 700     | 220 |                   | 16×21.5               | 440     |         |                   |                       |        |
|         |                   | 18×16.5               |         |     |                   | 18×16.5               |         |         |                   |                       |        |
| 2200    |                   | 18×21.5               | 1050    |     |                   |                       |         |         |                   |                       |        |
| 3300    |                   | 18×21.5               | 1700    |     |                   |                       |         |         |                   |                       |        |

## SLV series

105°C 5000時間品  
Load Life : 105°C 5000 hours

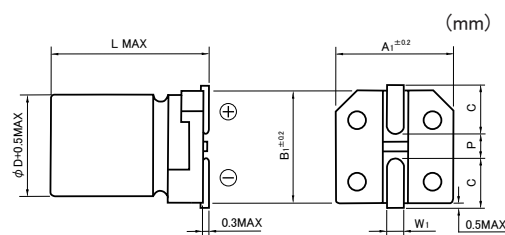
AEC-Q200



### ◆規格表／SPECIFICATIONS

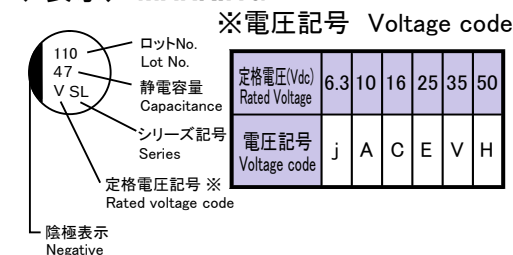
| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------|------------------------------|-----------------------------------------------------------|-------------------------|---------------------------------------------|----|------------------|------|------|------|------|------|------|------------------|----|----|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3～50Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV 又は 3μA のいずれか大なる値以下 (定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                       |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 損失角の正接<br>(tan δ)<br>Dissipation Factor(MAX)                             | (20℃, 120Hz) <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>tan δ</td><td>0.30</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.14</td></tr></table>                                                                                                                                                                                                                                                                         | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                              | 10                           | 16                                                        | 25                      | 35                                          | 50 | tan δ            | 0.30 | 0.24 | 0.20 | 0.16 | 0.14 | 0.14 |                  |    |    |   |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10                            | 16                                               | 25                           | 35                                                        | 50                      |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| tan δ                                                                    | 0.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.24                          | 0.20                                             | 0.16                         | 0.14                                                      | 0.14                    |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で5000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 5000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±30% 以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                  |                              |                                                           |                         |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | (120Hz) <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Z(-25℃) / Z(20℃)</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃) / Z(20℃)</td><td>14</td><td>12</td><td>8</td><td>6</td><td>4</td><td>3</td></tr></table>                                                                                                                                                                                     | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                              | 10                           | 16                                                        | 25                      | 35                                          | 50 | Z(-25℃) / Z(20℃) | 4    | 3    | 2    | 2    | 2    | 2    | Z(-40℃) / Z(20℃) | 14 | 12 | 8 | 6 | 4 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10                            | 16                                               | 25                           | 35                                                        | 50                      |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| Z(-25℃) / Z(20℃)                                                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3                             | 2                                                | 2                            | 2                                                         | 2                       |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |
| Z(-40℃) / Z(20℃)                                                         | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 12                            | 8                                                | 6                            | 4                                                         | 3                       |                                             |    |                  |      |      |      |      |      |      |                  |    |    |   |   |   |   |

### ◆寸法図／DIMENSIONS



| φD  | L   | A1  | B1  | C   | W1      | P   |
|-----|-----|-----|-----|-----|---------|-----|
| 4   | 6.1 | 4.3 | 4.3 | 1.8 | 0.5~0.8 | 1.0 |
| 5   | 6.1 | 5.3 | 5.3 | 2.2 | 0.5~0.8 | 1.3 |
| 6.3 | 6.1 | 6.6 | 6.6 | 2.7 | 0.5~0.8 | 1.8 |

### ◆表示／MARKING



### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120  | 500  | 1k   | 10k≤ |
|-----------------------|------------|------|------|------|------|
| 0.47~1μF              | 0.50       | 1.00 | 1.20 | 1.30 | 1.50 |
| 2.2~4.7μF             | 0.65       | 1.00 | 1.20 | 1.30 | 1.50 |
| 10~47μF               | 0.80       | 1.00 | 1.20 | 1.30 | 1.50 |
| 100μF                 | 0.80       | 1.00 | 1.10 | 1.15 | 1.20 |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | SLV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆標準品一覧表／STANDARD SIZE

Size φD×L(mm), Rated Ripple Current (mA r.m.s./105°C, 120Hz)

| Vdc | Cap<br>(μF) | Size<br>(φD×L) | Ripple |
|-----|-------------|----------------|--------|
| 6.3 | 22          | 4×6.1          | 22     |
|     | 47          | 5×6.1          | 38     |
|     | 100         | 6.3×6.1        | 69     |
| 10  | 33          | 5×6.1          | 35     |
| 16  | 10          | 4×6.1          | 18     |
|     | 22          | 5×6.1          | 30     |
|     | 47          | 6.3×6.1        | 50     |

| Vdc | Cap<br>(μF) | Size<br>(φD×L) | Ripple |
|-----|-------------|----------------|--------|
| 25  | 33          | 6.3×6.1        | 50     |
| 35  | 4.7         | 4×6.1          | 16     |
|     | 10          | 5×6.1          | 27     |
|     | 22          | 6.3×6.1        | 44     |

| Vdc | Cap<br>(μF) | Size<br>(φD×L) | Ripple |
|-----|-------------|----------------|--------|
| 50  | 0.47        | 4×6.1          | 4      |
|     | 1           | 4×6.1          | 8      |
|     | 2.2         | 4×6.1          | 11     |
|     | 3.3         | 4×6.1          | 14     |
|     | 4.7         | 5×6.1          | 19     |
|     | 10          | 6.3×6.1        | 32     |



## TAV series

125°C 2000時間保証品  
Load Life 125°C 2000Hrs.

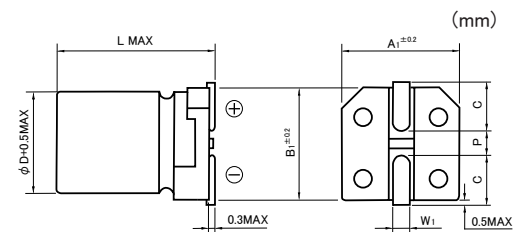
AEC-Q200



### ◆規格表／SPECIFICATIONS

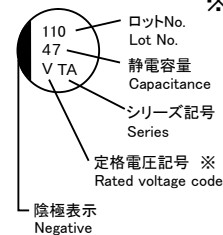
| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------|--------------|------------------------------|-----------------------------------------------------------|--|-------------------------|---------------------------------------------|--|------------------------------|-------------|------|----------------------------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 定格電圧範囲<br>Rated Voltage Range                                            | 35Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV 又は 3μA のいずれか大なる値以下 (定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 損失角の正接<br>(tan δ)<br>Dissipation Factor(MAX)                             | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>35</td><td rowspan="2">(20℃, 120Hz)</td></tr><tr><td>tan δ</td><td>0.16</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 定格電圧 (Vdc)<br>Rated Voltage   | 35                                               | (20℃, 120Hz) | tan δ                        | 0.16                                                      |  |                         |                                             |  |                              |             |      |                            |      |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | (20℃, 120Hz)                  |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| tan δ                                                                    | 0.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 耐久性<br>Endurance                                                         | <p>125℃中で2000時間定格電圧印加後、下記項目を満足すること<br/>After applying rated voltage with rated ripple current for 2000 hours at 125℃, the capacitors shall meet the following Criteria.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td></tr><tr><td rowspan="2">等価直列抵抗<br/>ESR (Ω/20℃,100kHz)</td><td>初期値 Initial</td><td>0.30</td></tr><tr><td>耐久試験後 After endurance test</td><td>0.50</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±30% 以内<br>Within ±30% of the initial value. |              | 損失角の正接<br>Dissipation Factor | 規格値の300% 以下<br>Not more than 300% of the specified value. |  | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  | 等価直列抵抗<br>ESR (Ω/20℃,100kHz) | 初期値 Initial | 0.30 | 耐久試験後 After endurance test | 0.50 |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 等価直列抵抗<br>ESR (Ω/20℃,100kHz)                                             | 初期値 Initial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.30                          |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
|                                                                          | 耐久試験後 After endurance test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.50                          |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>35</td><td rowspan="2">(120Hz)</td></tr><tr><td>Z(-40℃) / Z(20℃)</td><td>3</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 定格電圧 (Vdc)<br>Rated Voltage   | 35                                               | (120Hz)      | Z(-40℃) / Z(20℃)             | 3                                                         |  |                         |                                             |  |                              |             |      |                            |      |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | (120Hz)                       |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |
| Z(-40℃) / Z(20℃)                                                         | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                  |              |                              |                                                           |  |                         |                                             |  |                              |             |      |                            |      |

### ◆寸法図／DIMENSIONS



| φD  | L | A1  | B1  | C   | W1      | P   |
|-----|---|-----|-----|-----|---------|-----|
| 6.3 | 8 | 6.6 | 6.6 | 2.7 | 0.5~0.8 | 1.8 |

### ◆表示／MARKING



※電圧記号 Voltage code

|                             |    |
|-----------------------------|----|
| 定格電圧 (Vdc)<br>Rated Voltage | 35 |
| 電圧記号<br>Voltage code        | V  |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|------|------|------|-------|
| 係数<br>Coefficient     | 0.40 | 0.75 | 0.90 | 1.00  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TAV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法 Size<br>φD × L (mm) | 定格リップル電流<br>Rated Ripple Current<br>(mA rms/125°C, 100kHz) | 等価直列抵抗<br>E.S.R.<br>(Ω/20°C, 100kHz) |
|--------------------------------|-----------------------------|--------------------------|------------------------------------------------------------|--------------------------------------|
| 35                             | 47                          | 6.3×8                    | 240                                                        | 0.3                                  |
|                                | 100                         | 6.3×8                    | 240                                                        | 0.3                                  |

## TGV series

125°C 3000~5000時間 低ESR品  
Load Life : 125°C 3000~5000 hours Low ESR

耐久試験後ESR規格規定品。(φ8・φ10)  
ESR standard after endurance test.(φ8・φ10)

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------|----------------------|------|------|--|-------------------------------|---------------------------------------------------|----|---------------------|----------------------|----|----|------------------------------|------------------------------------------------------------|------|-----------|----------|---|---|-------------------------|---------------------------------------------|------|-------|------|------|------|--|--|--|---------|------|------|--|--|--|--|-------|------|--|--|--------|---------|-----|-----|-----|------|-----|-----|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40~+125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 定格電圧範囲<br>Rated Voltage Range                                            | 16~80Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                 | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td></tr><tr><td>φ8~10</td><td>0.23</td><td>0.18</td><td>0.16</td><td>0.14</td><td>—</td><td>—</td></tr><tr><td>φ12.5~18</td><td>0.18</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.14</td><td>0.12</td></tr></table> (20℃, 120Hz)<br>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When rated capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                     |                      |      |      |  | 定格電圧 (Vdc)<br>Rated Voltage   | 16                                                | 25 | 35                  | 50                   | 63 | 80 | φ8~10                        | 0.23                                                       | 0.18 | 0.16      | 0.14     | — | — | φ12.5~18                | 0.18                                        | 0.16 | 0.14  | 0.12 | 0.14 | 0.12 |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 25      | 35                  | 50                   | 63   | 80   |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| φ8~10                                                                    | 0.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.18    | 0.16                | 0.14                 | —    | —    |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| φ12.5~18                                                                 | 0.18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.16    | 0.14                | 0.12                 | 0.14 | 0.12 |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 耐久性<br>Endurance                                                         | <div>125℃中で右表の時間定格電圧印加後、下記項目を満足すること。<br/>After applying rated voltage for specified time at 125℃, the capacitors shall meet the following requirements.</div> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の ±30% 以内<br/>Within ±30% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td colspan="2">時間(hrs)<br/>Life Time</td><td></td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の 300% 以下<br/>Not more than 300% of the specified value.</td><td>6.3~50Vdc</td><td colspan="2">63.80Vdc</td><td></td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td><td>φD≤10</td><td>3000</td><td colspan="2">—</td></tr><tr><td></td><td></td><td></td><td>φD=12.5</td><td rowspan="2">5000</td><td colspan="2">3000</td></tr><tr><td></td><td></td><td></td><td>φD≥16</td><td colspan="2">4000</td></tr></table> <div>16~35Vdc</div> <table><tr><td></td><td>8×10.5</td><td>10×10.5</td></tr><tr><td>20℃</td><td>0.6</td><td>0.4</td></tr><tr><td>−40℃</td><td>4.5</td><td>3.5</td></tr></table> <div>耐久性試験後(125℃定格電圧印加2000時間後)ESR<br/>ESR standard after endurance test<br/>(125℃, 2000 hrs with rated voltage applied)</div> |         |                     |                      |      |      |  | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. |    | ケースサイズ<br>Case Size | 時間(hrs)<br>Life Time |    |    | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. |      | 6.3~50Vdc | 63.80Vdc |   |   | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      | φD≤10 | 3000 | —    |      |  |  |  | φD=12.5 | 5000 | 3000 |  |  |  |  | φD≥16 | 4000 |  |  | 8×10.5 | 10×10.5 | 20℃ | 0.6 | 0.4 | −40℃ | 4.5 | 3.5 |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | ケースサイズ<br>Case Size | 時間(hrs)<br>Life Time |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 6.3~50Vdc           | 63.80Vdc             |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         | φD≤10               | 3000                 | —    |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | φD=12.5             | 5000                 | 3000 |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | φD≥16               |                      | 4000 |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
|                                                                          | 8×10.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10×10.5 |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 20℃                                                                      | 0.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.4     |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| −40℃                                                                     | 4.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3.5     |                     |                      |      |      |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td></tr><tr><td>Z(−40℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                     |                      |      |      |  | 定格電圧 (Vdc)<br>Rated Voltage   | 16                                                | 25 | 35                  | 50                   | 63 | 80 | Z(−40℃)/Z(20℃)               | 3                                                          | 3    | 3         | 3        | 3 | 3 |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 25      | 35                  | 50                   | 63   | 80   |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |
| Z(−40℃)/Z(20℃)                                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 3       | 3                   | 3                    | 3    | 3    |  |                               |                                                   |    |                     |                      |    |    |                              |                                                            |      |           |          |   |   |                         |                                             |      |       |      |      |      |  |  |  |         |      |      |  |  |  |  |       |      |  |  |        |         |     |     |     |      |     |     |

### ◆呼称方法／PART NUMBER

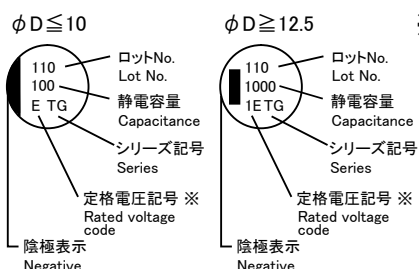
|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TGV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
|----------------------|------|------|------|--------|
| 33μF                 | 0.45 | 0.75 | 0.90 | 1.00   |
| 47~100μF             | 0.50 | 0.80 | 0.95 | 1.00   |
| 220~330μF            | 0.60 | 0.85 | 0.95 | 1.00   |

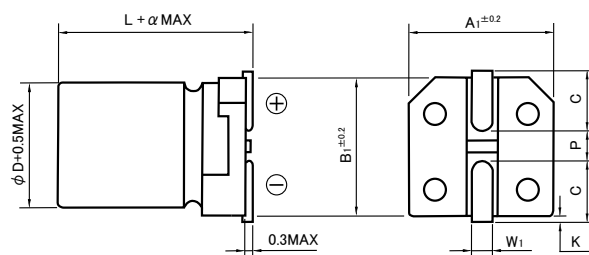
### ◆表示／MARKING



#### ※電圧記号 Voltage code

| 定格電圧(Vdc)<br>Rated Voltage | 16        | 25 | 35 |
|----------------------------|-----------|----|----|
| 記号<br>code                 | φD ≤ 10   | C  | E  |
|                            | φD ≥ 12.5 | 1C | 1E |
| 定格電圧(Vdc)<br>Rated Voltage | 50        | 63 | 80 |
| 記号<br>code                 | φD ≤ 10   | H  | -  |
|                            | φD ≥ 12.5 | 1H | 1J |

◆寸法図／DIMENSIONS



| (mm)     |      |      |      |     |         |     |         |          |  |
|----------|------|------|------|-----|---------|-----|---------|----------|--|
| $\phi D$ | L    | A1   | B1   | C   | W1      | P   | K       | $\alpha$ |  |
| 8        | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 | 0.5MAX  | 0        |  |
| 10       | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 | 0.5MAX  | 0        |  |
| 12.5     | 13.5 | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5      |  |
| 12.5     | 16   | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5      |  |
| 16       | 16.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |  |
| 16       | 21.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |  |
| 18       | 16.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |  |
| 18       | 21.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5      |  |

◆標準品一覧表／STANDARD SIZE

Size  $\phi D \times L$  (mm), Rated Ripple Current (mA r.m.s./125°C, 100kHz), ESR ( $\Omega$  MAX/100kHz)

| Vdc | Cap<br>( $\mu F$ ) | Size<br>( $\phi D \times L$ ) | Ripple | ESR   |       |
|-----|--------------------|-------------------------------|--------|-------|-------|
|     |                    |                               |        | 20°C  | -40°C |
| 16  | 100                | 8×10.5                        | 350    | 0.150 | 3.0   |
|     | 220                | 8×10.5                        | 350    | 0.150 | 3.0   |
|     | 330                | 10×10.5                       | 550    | 0.120 | 2.0   |
|     | 470                | 10×10.5                       | 550    | 0.120 | 2.0   |
|     | 820                | 12.5×13.5                     | 850    | 0.092 | 1.1   |
|     | 1000               | 12.5×16                       | 1000   | 0.074 | 0.9   |
|     | 1500               | 16×16.5                       | 1200   | 0.066 | 0.7   |
|     | 1800               | 18×16.5                       | 1300   | 0.064 | 0.6   |
|     | 2200               | 16×21.5                       | 1650   | 0.041 | 0.4   |
|     | 3300               | 18×21.5                       | 1800   | 0.039 | 0.3   |
| 25  | 100                | 8×10.5                        | 350    | 0.150 | 3.0   |
|     | 220                | 8×10.5                        | 350    | 0.150 | 3.0   |
|     |                    | 10×10.5                       | 550    | 0.120 | 2.0   |
|     | 330                | 10×10.5                       | 550    | 0.120 | 2.0   |
|     | 680                | 12.5×13.5                     | 850    | 0.092 | 1.1   |
|     | 820                | 12.5×16                       | 1000   | 0.074 | 0.9   |
|     | 1200               | 16×16.5                       | 1200   | 0.066 | 0.7   |
|     | 1500               | 18×16.5                       | 1300   | 0.064 | 0.6   |
|     | 2200               | 16×21.5                       | 1650   | 0.041 | 0.4   |
|     | 2700               | 18×21.5                       | 1800   | 0.039 | 0.3   |
| 35  | 47                 | 8×10.5                        | 350    | 0.150 | 3.0   |
|     | 100                | 8×10.5                        | 350    | 0.150 | 3.0   |
|     |                    | 10×10.5                       | 550    | 0.120 | 2.0   |
|     | 220                | 10×10.5                       | 550    | 0.120 | 2.0   |
|     | 470                | 12.5×13.5                     | 850    | 0.092 | 1.1   |
|     | 560                | 12.5×16                       | 1000   | 0.074 | 0.9   |
|     | 820                | 16×16.5                       | 1200   | 0.066 | 0.7   |
|     | 1000               | 18×16.5                       | 1300   | 0.064 | 0.6   |
|     | 1500               | 16×21.5                       | 1650   | 0.041 | 0.4   |
|     | 1800               | 18×21.5                       | 1800   | 0.039 | 0.3   |
| 50  | 33                 | 8×10.5                        | 300    | 0.340 | 6.7   |
|     | 47                 | 8×10.5                        | 300    | 0.340 | 6.7   |
|     |                    | 10×10.5                       | 500    | 0.220 | 4.4   |
|     | 100                | 10×10.5                       | 500    | 0.220 | 4.4   |
|     | 360                | 12.5×16                       | 900    | 0.150 | 3.0   |
|     | 510                | 16×16.5                       | 950    | 0.120 | 2.0   |
|     | 680                | 18×16.5                       | 1000   | 0.110 | 1.8   |
|     | 820                | 16×21.5                       | 1300   | 0.073 | 1.3   |
|     | 1200               | 18×21.5                       | 1450   | 0.066 | 1.1   |
|     | 240                | 12.5×13.5                     | 1090   | 0.140 | 2.0   |
| 63  | 330                | 12.5×16                       | 1310   | 0.110 | 1.5   |
|     | 430                | 16×16.5                       | 1460   | 0.086 | 1.2   |
|     | 560                | 18×16.5                       | 1550   | 0.081 | 0.86  |
|     | 680                | 16×21.5                       | 2020   | 0.053 | 0.68  |
|     | 910                | 18×21.5                       | 2140   | 0.050 | 0.53  |
|     | 180                | 12.5×13.5                     | 970    | 0.170 | 2.5   |
| 80  | 240                | 12.5×16                       | 1160   | 0.130 | 1.8   |
|     | 270                | 16×16.5                       | 1300   | 0.098 | 1.3   |
|     | 360                | 18×16.5                       | 1390   | 0.091 | 0.98  |
|     | 430                | 16×21.5                       | 1810   | 0.063 | 0.80  |
|     | 560                | 18×21.5                       | 1920   | 0.059 | 0.59  |
|     | 560                | 18×21.5                       | 1920   | 0.059 | 0.59  |

# THV series

125°C 2000~3000時間 低ESR品  
Load Life : 125°C 2000~3000 hours Low ESR

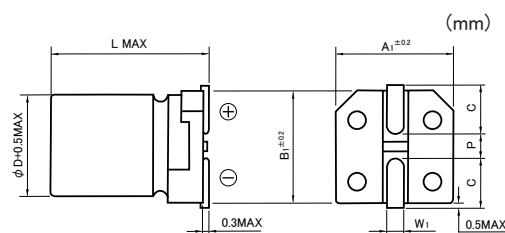
AEC-Q200



## ◆規格表／SPECIFICATIONS

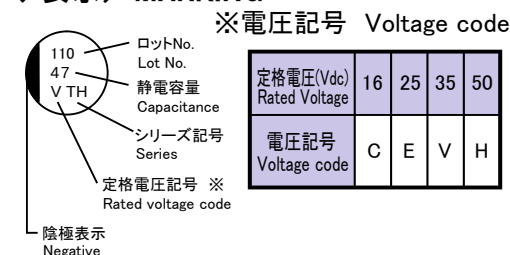
| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                   |                                                           |      |      |                  |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------|------|------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40~+125°C                                                                                                                                                                           |                                                           |      |      |                  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 16~50Vdc                                                                                                                                                                             |                                                           |      |      |                  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20°C, 120Hz)                                                                                                                                                                   |                                                           |      |      |                  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV 又は 3μA のいずれか大なる値以下 (定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage |                                                           |      |      |                  |
| 損失角の正接<br>(tan δ)<br>Dissipation Factor(MAX)                             | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                          | 16                                                        | 25   | 35   | 50 (20°C, 120Hz) |
|                                                                          | tan δ                                                                                                                                                                                | 0.23                                                      | 0.18 | 0.16 | 0.14             |
| 耐久性<br>Endurance                                                         | 125°C中で表の時間定格電圧(リプル重量)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 125°C, the capacitors shall meet the following requirements.  |                                                           |      |      |                  |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                        | 初期値の±30% 以内<br>Within ±30% of the initial value.          |      |      |                  |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                         | 規格値の300% 以下<br>Not more than 300% of the specified value. |      |      |                  |
|                                                                          | 漏れ電流<br>Leakage Current                                                                                                                                                              | 規格値以下<br>Not more than the specified value.               |      |      |                  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | ケースサイズ<br>Case Size                                                                                                                                                                  | 時間(hrs)<br>LifeTime                                       |      |      |                  |
|                                                                          | φD=6.3                                                                                                                                                                               | 2000                                                      |      |      |                  |
|                                                                          | φD≥8                                                                                                                                                                                 | 3000                                                      |      |      |                  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                          | 16                                                        | 25   | 35   | 50 (120Hz)       |
|                                                                          | Z(-40°C) / Z(20°C)                                                                                                                                                                   | 4                                                         | 4    | 3    | 3                |

## ◆寸法図／DIMENSIONS



| φD  | L    | A1   | B1   | C   | W1      | P   |
|-----|------|------|------|-----|---------|-----|
| 6.3 | 6.1  | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 6.3 | 8    | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 8   | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 |
| 10  | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 |

## ◆表示／MARKING



## ◆リプル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|------|------|------|-------|
| 10~33μF               | 0.45 | 0.75 | 0.90 | 1.00  |
| 47~100μF              | 0.50 | 0.80 | 0.95 | 1.00  |
| 220~330μF             | 0.60 | 0.85 | 0.95 | 1.00  |

## ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | THV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

## ◆標準品一覧表／STANDARD SIZE

Size φD×L(mm), Rated Ripple Current (mA r.m.s./125°C, 100kHz), ESR(Ω MAX/100kHz)

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR  |       |
|-----|----------|-------------|--------|------|-------|
|     |          |             |        | 20°C | -40°C |
| 16  | 33       | 6.3×6.1     | 70     | 1    | 15    |
|     | 47       | 6.3×8       | 200    | 0.7  | 10    |
|     | 100      | 6.3×8       | 200    | 0.7  | 10    |
|     |          | 8×10.5      | 300    | 0.3  | 4.5   |
|     | 220      | 8×10.5      | 300    | 0.3  | 4.5   |
|     |          | 10×10.5     | 500    | 0.2  | 3     |
| 25  | 330      | 10×10.5     | 500    | 0.2  | 3     |
|     | 33       | 6.3×6.1     | 70     | 1    | 15    |
|     | 47       | 6.3×8       | 200    | 0.7  | 10    |
|     | 100      | 6.3×8       | 200    | 0.7  | 10    |
|     |          | 8×10.5      | 300    | 0.3  | 4.5   |
|     | 220      | 8×10.5      | 300    | 0.3  | 4.5   |

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR  |       |
|-----|----------|-------------|--------|------|-------|
|     |          |             |        | 20°C | -40°C |
| 25  | 220      | 8×10.5      | 300    | 0.3  | 4.5   |
|     | 330      | 10×10.5     | 500    | 0.2  | 3     |
|     |          | 10×10.5     | 500    | 0.2  | 3     |
|     | 22       | 6.3×8       | 200    | 0.7  | 10    |
|     | 33       | 6.3×6.1     | 70     | 1    | 15    |
|     |          | 6.3×8       | 200    | 0.7  | 10    |
| 35  | 47       | 6.3×8       | 200    | 0.7  | 10    |
|     |          | 8×10.5      | 300    | 0.3  | 4.5   |
|     | 100      | 8×10.5      | 300    | 0.3  | 4.5   |
|     |          | 10×10.5     | 500    | 0.2  | 3     |
|     | 220      | 10×10.5     | 500    | 0.2  | 3     |
|     |          | 10×10.5     | 500    | 0.2  | 3     |

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR  |       |
|-----|----------|-------------|--------|------|-------|
|     |          |             |        | 20°C | -40°C |
| 50  | 10       | 6.3×6.1     | 70     | 1    | 15    |
|     | 22       | 6.3×8       | 150    | 0.9  | 10    |
|     | 33       | 6.3×8       | 150    | 0.9  | 10    |
|     |          | 8×10.5      | 250    | 0.36 | 4.5   |
|     | 47       | 8×10.5      | 250    | 0.36 | 4.5   |
|     |          | 10×10.5     | 350    | 0.25 | 3     |
| 100 | 100      | 10×10.5     | 350    | 0.25 | 3     |
|     |          | 10×10.5     | 350    | 0.25 | 3     |

## TKV series

105°C 2000時間 低ESR品  
Load life : 105°C 2000 hours Low ESR

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|----------------|------|------|------|------|------|----------------|---|---|---|---|---|----------------|---|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -55~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3~35Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                 | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td></tr><tr><td>tan δ</td><td>0.26</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | tan δ          | 0.26 | 0.19 | 0.16 | 0.14 | 0.12 |                |   |   |   |   |   |                |   |   |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10                            | 16                                                | 25                           | 35                                                         |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| tan δ                                                                    | 0.26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.19                          | 0.16                                              | 0.14                         | 0.12                                                       |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で2000時間定格電圧印加後、下記項目を満足すること。<br>After applying rated voltage for 2000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                              |                                                            |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Z(-55℃)/Z(20℃)</td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                         | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | Z(-25℃)/Z(20℃) | 2    | 2    | 2    | 2    | 2    | Z(-40℃)/Z(20℃) | 3 | 3 | 3 | 3 | 3 | Z(-55℃)/Z(20℃) | 4 | 4 | 4 | 3 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10                            | 16                                                | 25                           | 35                                                         |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| Z(-25℃)/Z(20℃)                                                           | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2                             | 2                                                 | 2                            | 2                                                          |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| Z(-40℃)/Z(20℃)                                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3                             | 3                                                 | 3                            | 3                                                          |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |
| Z(-55℃)/Z(20℃)                                                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4                             | 4                                                 | 3                            | 3                                                          |                         |                                             |                |      |      |      |      |      |                |   |   |   |   |   |                |   |   |   |   |   |

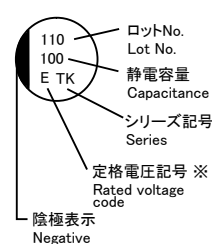
### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TKV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|------|------|------|-------|
| 33μF                  | 0.42 | 0.75 | 0.90 | 1.00  |
| 47~150μF              | 0.44 | 0.80 | 0.95 | 1.00  |
| 220~1800μF            | 0.60 | 0.85 | 0.95 | 1.00  |

### ◆表示／MARKING

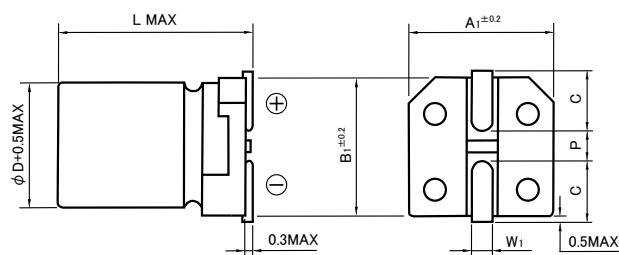


※電圧記号 Voltage code

|                             |     |    |    |    |    |
|-----------------------------|-----|----|----|----|----|
| 定格電圧 (Vdc)<br>Rated Voltage | 6.3 | 10 | 16 | 25 | 35 |
| 電圧記号<br>Voltage code        | j   | A  | C  | E  | V  |



◆寸法図／DIMENSIONS



(mm)

| φ D | L    | A1   | B1   | C   | W1      | P   |
|-----|------|------|------|-----|---------|-----|
| 6.3 | 6.1  | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 6.3 | 8    | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 8   | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 |
| 10  | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 |

◆標準品一覧表／STANDARD SIZE

Size φDXL(mm), Rated Ripple Current(mA r.m.s./105°C,100kHz), ESR(Ω MAX/20°C, 100kHz)

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR  |
|-----|----------|-------------|--------|------|
| 6.3 | 100      | 6.3×6.1     | 300    | 0.26 |
|     | 220      | 6.3×6.1     | 300    | 0.26 |
|     | 330      | 6.3×8       | 600    | 0.16 |
|     | 470      | 8×10.5      | 850    | 0.08 |
|     | 1000     | 8×10.5      | 850    | 0.08 |
|     | 1500     | 10×10.5     | 1190   | 0.06 |
|     | 1800     | 10×10.5     | 850    | 0.08 |
| 10  | 150      | 6.3×6.1     | 300    | 0.26 |
|     | 220      | 6.3×8       | 600    | 0.16 |
|     | 330      | 8×10.5      | 850    | 0.08 |
|     | 470      | 8×10.5      | 850    | 0.08 |
|     | 680      | 8×10.5      | 850    | 0.08 |
|     | 1000     | 10×10.5     | 1190   | 0.06 |
|     | 1200     | 10×10.5     | 850    | 0.08 |
| 16  | 47       | 6.3×6.1     | 300    | 0.26 |
|     | 100      | 6.3×6.1     | 300    | 0.26 |
|     |          | 6.3×8       | 600    | 0.16 |
|     | 220      | 6.3×8       | 600    | 0.16 |
|     | 330      | 8×10.5      | 850    | 0.08 |
|     | 470      | 8×10.5      | 850    | 0.08 |
|     | 680      | 10×10.5     | 1190   | 0.06 |
|     | 820      | 10×10.5     | 850    | 0.08 |

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR  |
|-----|----------|-------------|--------|------|
| 25  | 33       | 6.3×6.1     | 300    | 0.26 |
|     | 68       | 6.3×6.1     | 300    | 0.26 |
|     | 100      | 6.3×8       | 600    | 0.16 |
|     | 150      | 8×10.5      | 850    | 0.08 |
|     | 220      | 8×10.5      | 850    | 0.08 |
|     | 330      | 8×10.5      | 850    | 0.08 |
|     | 470      | 10×10.5     | 1190   | 0.06 |
|     | 560      | 10×10.5     | 850    | 0.08 |
|     |          |             |        |      |
| 35  | 33       | 6.3×6.1     | 300    | 0.26 |
|     | 47       | 6.3×6.1     | 300    | 0.26 |
|     | 68       | 6.3×8       | 600    | 0.16 |
|     | 100      | 6.3×8       | 600    | 0.16 |
|     |          | 8×10.5      | 850    | 0.08 |
|     | 150      | 8×10.5      | 850    | 0.08 |
|     | 220      | 8×10.5      | 850    | 0.08 |
|     | 330      | 10×10.5     | 1190   | 0.06 |
|     | 390      | 10×10.5     | 850    | 0.08 |

## TLV series

105°C 2000~5000時間 低インピーダンス品  
Load life : 105°C 2000~5000 hours, Low Impedance

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|------|------|-----------|-----------|-----------|----------------|---------|------|------|-----------|-----------|------|------|------|------------------------------|---------------------------------------------------------------------------|-------------------------|---------------------------------------------|---|---|---|---|---|---|---|----------------|---|---|---|---|---|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -55~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3~100Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                 | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td></tr><tr><td>tan δ</td><td>0.26</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.09</td><td>0.08</td></tr></table> <p>(20℃, 120Hz)</p> <p>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br/>When rated capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.</p>                                                                                                                                                                                                                                                                                                                       | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                                                                                                                             | 6.3                                               | 10                                                                                                                                                                                                                                                                                      | 16                   | 25                   | 35   | 50   | 63        | 80        | 100       | tan δ          | 0.26    | 0.19 | 0.16 | 0.14      | 0.12      | 0.10 | 0.09 | 0.09 | 0.08                         |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10                                                                                                                                                                                                                                                                                      | 16                                                | 25                                                                                                                                                                                                                                                                                      | 35                   | 50                   | 63   | 80   | 100       |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| tan δ                                                                    | 0.26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.19                                                                                                                                                                                                                                                                                    | 0.16                                              | 0.14                                                                                                                                                                                                                                                                                    | 0.12                 | 0.10                 | 0.09 | 0.09 | 0.08      |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 耐久性<br>Endurance                                                         | <p>105℃中で右表の時間定格電圧印加後、下記項目を満足すること。<br/>After applying rated voltage for specified time at 105℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td><td rowspan="4"><table><tr><td>ケースサイズ<br/>Case Size</td><td colspan="3">時間(hrs)<br/>Life Time</td></tr><tr><td></td><td>6.3~50Vdc</td><td>63Vdc</td><td>80,100Vdc</td></tr><tr><td>φD ≤ 10</td><td>5000</td><td>2000</td><td>3000</td></tr><tr><td>φD ≥ 12.5</td><td colspan="3">5000</td></tr></table></td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下 (φ8, φ10:300%)<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change                                                                                                                                                                                                                                                           | 初期値の ±30% 以内<br>Within ±30% of the initial value. | <table><tr><td>ケースサイズ<br/>Case Size</td><td colspan="3">時間(hrs)<br/>Life Time</td></tr><tr><td></td><td>6.3~50Vdc</td><td>63Vdc</td><td>80,100Vdc</td></tr><tr><td>φD ≤ 10</td><td>5000</td><td>2000</td><td>3000</td></tr><tr><td>φD ≥ 12.5</td><td colspan="3">5000</td></tr></table> | ケースサイズ<br>Case Size  | 時間(hrs)<br>Life Time |      |      |           | 6.3~50Vdc | 63Vdc     | 80,100Vdc      | φD ≤ 10 | 5000 | 2000 | 3000      | φD ≥ 12.5 | 5000 |      |      | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下 (φ8, φ10:300%)<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <table><tr><td>ケースサイズ<br/>Case Size</td><td colspan="3">時間(hrs)<br/>Life Time</td></tr><tr><td></td><td>6.3~50Vdc</td><td>63Vdc</td><td>80,100Vdc</td></tr><tr><td>φD ≤ 10</td><td>5000</td><td>2000</td><td>3000</td></tr><tr><td>φD ≥ 12.5</td><td colspan="3">5000</td></tr></table> | ケースサイズ<br>Case Size                               |                                                                                                                                                                                                                                                                                         | 時間(hrs)<br>Life Time |                      |      |      | 6.3~50Vdc | 63Vdc     | 80,100Vdc | φD ≤ 10        | 5000    | 2000 | 3000 | φD ≥ 12.5 | 5000      |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| ケースサイズ<br>Case Size                                                      | 時間(hrs)<br>Life Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
|                                                                          | 6.3~50Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                         | 63Vdc                                             |                                                                                                                                                                                                                                                                                         | 80,100Vdc            |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| φD ≤ 10                                                                  | 5000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                         | 2000                                              | 3000                                                                                                                                                                                                                                                                                    |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| φD ≥ 12.5                                                                | 5000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下 (φ8, φ10:300%)<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                                         |                      |                      |      |      |           |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Z(-55℃)/Z(20℃)</td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> <p>(120Hz)</p>                                                                                                                                                                                                                                                                   | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                                                                                                                             | 6.3                                               | 10                                                                                                                                                                                                                                                                                      | 16                   | 25                   | 35   | 50   | 63        | 80        | 100       | Z(-25℃)/Z(20℃) | 2       | 2    | 2    | 2         | 2         | 2    | 2    | 2    | 2                            | Z(-40℃)/Z(20℃)                                                            | 3                       | 3                                           | 3 | 3 | 3 | 3 | 3 | 3 | 3 | Z(-55℃)/Z(20℃) | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10                                                                                                                                                                                                                                                                                      | 16                                                | 25                                                                                                                                                                                                                                                                                      | 35                   | 50                   | 63   | 80   | 100       |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| Z(-25℃)/Z(20℃)                                                           | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2                                                                                                                                                                                                                                                                                       | 2                                                 | 2                                                                                                                                                                                                                                                                                       | 2                    | 2                    | 2    | 2    | 2         |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| Z(-40℃)/Z(20℃)                                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3                                                                                                                                                                                                                                                                                       | 3                                                 | 3                                                                                                                                                                                                                                                                                       | 3                    | 3                    | 3    | 3    | 3         |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |
| Z(-55℃)/Z(20℃)                                                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4                                                                                                                                                                                                                                                                                       | 4                                                 | 3                                                                                                                                                                                                                                                                                       | 3                    | 3                    | 3    | 3    | 3         |           |           |                |         |      |      |           |           |      |      |      |                              |                                                                           |                         |                                             |   |   |   |   |   |   |   |                |   |   |   |   |   |   |   |   |   |

### ◆呼称方法／PART NUMBER

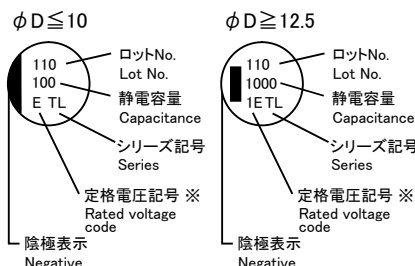
|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TLV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
|-----------------------|------|------|------|--------|
| 22~33 μF              | 0.45 | 0.75 | 0.90 | 1.00   |
| 47~200 μF             | 0.50 | 0.80 | 0.95 | 1.00   |
| 220~10000 μF          | 0.60 | 0.85 | 0.95 | 1.00   |

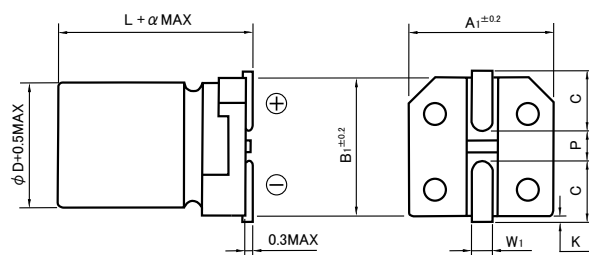
### ◆表示／MARKING



### ※電圧記号 Voltage code

| 定格電圧(Vdc)<br>Rated Voltage | 6.3             | 10 | 16  |
|----------------------------|-----------------|----|-----|
| 記号<br>code                 | φD ≤ 10<br>j    | A  | C   |
|                            | φD ≥ 12.5<br>0J | 1A | 1C  |
| 定格電圧(Vdc)<br>Rated Voltage | 25              | 35 | 50  |
| 記号<br>code                 | φD ≤ 10<br>E    | V  | H   |
|                            | φD ≥ 12.5<br>1E | 1V | 1H  |
| 定格電圧(Vdc)<br>Rated Voltage | 63              | 80 | 100 |
| 記号<br>code                 | φD ≤ 10<br>J    | K  | 2A  |
|                            | φD ≥ 12.5<br>1J | 1K | 2A  |

◆寸法図／DIMENSIONS



| φD   | L    | A1   | B1   | C   | W1      | P   | K       | α   |
|------|------|------|------|-----|---------|-----|---------|-----|
| 8    | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 | 0.5MAX  | 0   |
| 10   | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 | 0.5MAX  | 0   |
| 12.5 | 13.5 | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5 |
| 12.5 | 16   | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5 |
| 16   | 16.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 16   | 21.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 18   | 16.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 18   | 21.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |

◆標準品一覧表／STANDARD SIZE

Size φDXL(mm), Rated Ripple Current(mA r.m.s./105°C,100kHz), Impedance(Ω MAX/20°C, 100kHz)

| Vdc | Cap (μF) | Size (φDXL) | Ripple | Impedance |
|-----|----------|-------------|--------|-----------|
| 6.3 | 2200     | 12.5×13.5   | 1100   | 0.065     |
|     | 3300     | 12.5×16     | 1400   | 0.055     |
|     | 4700     | 16×16.5     | 1800   | 0.045     |
|     | 6800     | 16×21.5     | 2330   | 0.029     |
|     | 10000    | 18×21.5     | 2640   | 0.028     |
| 10  | 1000     | 10×10.5     | 850    | 0.08      |
|     | 2200     | 12.5×16     | 1400   | 0.055     |
|     | 3300     | 16×16.5     | 1800   | 0.045     |
|     | 4700     | 18×16.5     | 2060   | 0.044     |
|     | 6800     | 18×21.5     | 2640   | 0.028     |
| 16  | 470      | 8×10.5      | 600    | 0.16      |
|     | 680      | 10×10.5     | 850    | 0.08      |
|     | 1500     | 12.5×13.5   | 1100   | 0.065     |
|     | 2200     | 16×16.5     | 1800   | 0.045     |
|     | 3300     | 18×16.5     | 2060   | 0.044     |
| 25  | 4700     | 16×21.5     | 2330   | 0.029     |
|     | 220      | 8×10.5      | 600    | 0.16      |
|     | 330      | 8×10.5      | 600    | 0.16      |
|     | 470      | 10×10.5     | 850    | 0.08      |
|     | 1000     | 12.5×13.5   | 1100   | 0.065     |
| 35  | 1500     | 16×16.5     | 1800   | 0.045     |
|     | 2200     | 18×16.5     | 2060   | 0.044     |
|     | 3300     | 18×21.5     | 2640   | 0.028     |
|     | 100      | 8×10.5      | 600    | 0.16      |
|     | 150      | 10×10.5     | 850    | 0.08      |
| 50  | 220      | 8×10.5      | 600    | 0.16      |
|     | 330      | 10×10.5     | 850    | 0.08      |
|     | 470      | 12.5×13.5   | 1100   | 0.065     |
|     | 680      | 12.5×13.5   | 1100   | 0.065     |
|     | 1000     | 16×16.5     | 1800   | 0.045     |
|     | 1500     | 18×16.5     | 2060   | 0.044     |
|     | 2200     | 16×21.5     | 2330   | 0.029     |
|     | 100      | 8×10.5      | 350    | 0.34      |
|     | 150      | 10×10.5     | 670    | 0.18      |
|     | 220      | 10×10.5     | 670    | 0.18      |
|     | 330      | 12.5×13.5   | 900    | 0.12      |
|     | 390      | 12.5×13.5   | 900    | 0.12      |
|     | 470      | 12.5×16     | 1200   | 0.10      |
|     | 560      | 16×16.5     | 1610   | 0.075     |
|     | 680      | 16×16.5     | 1610   | 0.075     |
|     | 820      | 18×16.5     | 1700   | 0.07      |
|     | 1000     | 18×16.5     | 1700   | 0.07      |
|     | 1000     | 16×21.5     | 2000   | 0.05      |
|     | 1300     | 16×21.5     | 2000   | 0.05      |
|     | 1500     | 18×21.5     | 2200   | 0.045     |

| Vdc | Cap (μF) | Size (φDXL) | Ripple | Impedance |
|-----|----------|-------------|--------|-----------|
| 63  | 33       | 8×10.5      | 250    | 0.65      |
|     | 47       | 8×10.5      | 250    | 0.65      |
|     | 68       | 8×10.5      | 250    | 0.65      |
|     |          | 10×10.5     | 400    | 0.35      |
|     | 100      | 10×10.5     | 400    | 0.35      |
|     | 150      | 12.5×13.5   | 800    | 0.17      |
|     | 220      | 12.5×13.5   | 800    | 0.17      |
|     | 330      | 12.5×16     | 1000   | 0.14      |
|     | 470      | 16×16.5     | 1410   | 0.12      |
|     | 680      | 18×16.5     | 1690   | 0.11      |
|     |          | 16×21.5     | 1790   | 0.08      |
| 80  | 1000     | 18×21.5     | 1960   | 0.07      |
|     | 22       | 8×10.5      | 200    | 0.80      |
|     | 33       | 8×10.5      | 200    | 0.80      |
|     | 47       | 10×10.5     | 300    | 0.51      |
|     | 56       | 10×10.5     | 300    | 0.51      |
|     | 68       | 12.5×13.5   | 740    | 0.28      |
|     | 100      | 12.5×13.5   | 740    | 0.28      |
|     | 180      | 12.5×13.5   | 740    | 0.28      |
|     | 220      | 12.5×16     | 900    | 0.21      |
|     | 330      | 16×16.5     | 1090   | 0.17      |
| 100 | 470      | 18×16.5     | 1280   | 0.15      |
|     | 560      | 16×21.5     | 1580   | 0.11      |
|     | 680      | 18×21.5     | 1690   | 0.091     |
|     | 22       | 8×10.5      | 200    | 0.80      |
|     | 33       | 10×10.5     | 300    | 0.51      |
|     | 47       | 12.5×13.5   | 740    | 0.28      |
|     | 100      | 16×16.5     | 1090   | 0.17      |
|     | 110      | 12.5×13.5   | 740    | 0.28      |
|     | 150      | 12.5×16     | 900    | 0.21      |
|     | 200      | 16×16.5     | 1090   | 0.17      |
|     | 220      | 18×16.5     | 1280   | 0.15      |
|     | 270      | 18×16.5     | 1280   | 0.15      |
|     | 330      | 16×21.5     | 1580   | 0.11      |
|     | 470      | 18×21.5     | 1690   | 0.091     |

## TPV series

105°C 2000時間保証低ESR品。  
Load life : 105°C 2000Hrs Low ESR

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|----|--------------|----------------|------|------|------|------|------|------|----------------|---|---|---|---|---|---|----------------|---|---|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -55~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3~50Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                 | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td rowspan="2">(20℃, 120Hz)</td></tr><tr><td>tan δ</td><td>0.26</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td></tr></table> <p>1000uFを超えるものは1000uF増す毎に上表の値に0.02を加えた値とする。<br/>When rated capacitance is over 1000uF, tan δ shall be added 0.02 to the listed value with increase of every 1000uF.</p>                                                 | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | 50 | (20℃, 120Hz) | tan δ          | 0.26 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                            | 16                                                | 25                           | 35                                                         | 50                      | (20℃, 120Hz)                                |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| tan δ                                                                    | 0.26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.19                          | 0.16                                              | 0.14                         | 0.12                                                       | 0.10                    |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 耐久性<br>Endurance                                                         | <p>105℃, 2000時間定格電圧印加後、下記項目を満足すること。<br/>After applying rated voltage 2000 hours at 105℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                              |                                                            |                         |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td rowspan="4">(120Hz)</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Z(-55℃)/Z(20℃)</td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td></tr></table>                                                | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | 50 | (120Hz)      | Z(-25℃)/Z(20℃) | 2    | 2    | 2    | 2    | 2    | 2    | Z(-40℃)/Z(20℃) | 3 | 3 | 3 | 3 | 3 | 3 | Z(-55℃)/Z(20℃) | 4 | 4 | 4 | 3 | 3 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                            | 16                                                | 25                           | 35                                                         | 50                      | (120Hz)                                     |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| Z(-25℃)/Z(20℃)                                                           | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2                             | 2                                                 | 2                            | 2                                                          | 2                       |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| Z(-40℃)/Z(20℃)                                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3                             | 3                                                 | 3                            | 3                                                          | 3                       |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| Z(-55℃)/Z(20℃)                                                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4                             | 4                                                 | 3                            | 3                                                          | 3                       |                                             |    |              |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |

### ◆呼称方法／PART NUMBER

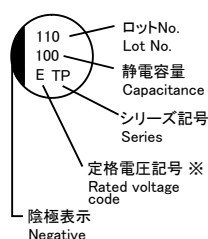
|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TPV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
|-----------------------|------|------|------|--------|
| 係数<br>Coefficient     | 0.44 | 0.80 | 0.95 | 1.00   |
|                       | 0.60 | 0.85 | 0.95 | 1.00   |

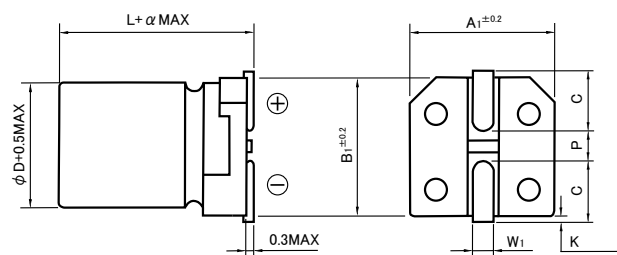
### ◆表示／MARKING

※電圧記号 Voltage code



|                            |     |    |    |    |    |    |
|----------------------------|-----|----|----|----|----|----|
| 定格電圧(Vdc)<br>Rated Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 |
| 電圧記号<br>Voltage code       | j   | A  | C  | E  | V  | H  |

◆寸法図／DIMENSIONS



| (mm)     |      |      |      |     |         |     |        |          |
|----------|------|------|------|-----|---------|-----|--------|----------|
| $\phi D$ | L    | A1   | B1   | C   | W1      | P   | K      | $\alpha$ |
| 6.3      | 6.1  | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 | 0.5MAX | 0        |
| 6.3      | 8    | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 | 0.5MAX | 0        |
| 8        | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 | 0.5MAX | 0        |
| 10       | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 | 0.5MAX | 0        |

◆標準品一覧表／STANDARD SIZE

Size ( $\phi D \times L \text{ mm}$ ), Rated Ripple Current (mA r.m.s./105°C, 100kHz), ESR ( $\Omega \text{ MAX./20}^\circ\text{C, 100kHz}$ )

| Vdc | Cap<br>( $\mu\text{F}$ ) | Size<br>( $\phi \text{ DXL}$ ) | Ripple | ESR  |
|-----|--------------------------|--------------------------------|--------|------|
| 6.3 | 330                      | 6.3×6.1                        | 300    | 0.26 |
|     | 470                      | 6.3×8                          | 600    | 0.16 |
|     | 680                      | 6.3×8                          | 600    | 0.16 |
|     | 1200                     | 8×10.5                         | 850    | 0.08 |
|     | 2200                     | 10×10.5                        | 1190   | 0.06 |
| 10  | 220                      | 6.3×6.1                        | 300    | 0.26 |
|     | 330                      | 6.3×8                          | 600    | 0.16 |
|     | 470                      | 6.3×8                          | 600    | 0.16 |
|     | 1000                     | 8×10.5                         | 850    | 0.08 |
|     | 1500                     | 10×10.5                        | 1190   | 0.06 |
| 16  | 150                      | 6.3×6.1                        | 300    | 0.26 |
|     | 220                      | 6.3×6.1                        | 300    | 0.26 |
|     | 330                      | 6.3×8                          | 600    | 0.16 |
|     | 680                      | 8×10.5                         | 850    | 0.08 |
|     | 1000                     | 10×10.5                        | 1190   | 0.06 |
| 25  | 100                      | 6.3×6.1                        | 300    | 0.26 |
|     | 150                      | 6.3×8                          | 600    | 0.16 |
|     | 220                      | 6.3×8                          | 600    | 0.16 |
|     | 470                      | 8×10.5                         | 850    | 0.08 |
|     | 560                      | 8×10.5                         | 850    | 0.08 |
|     | 820                      | 10×10.5                        | 1190   | 0.06 |
|     | 1000                     | 10×10.5                        | 1190   | 0.06 |

| Vdc | Cap<br>( $\mu\text{F}$ ) | Size<br>( $\phi \text{ DXL}$ ) | Ripple | ESR  |
|-----|--------------------------|--------------------------------|--------|------|
| 35  | 68                       | 6.3×6.1                        | 300    | 0.26 |
|     | 100                      | 6.3×6.1                        | 300    | 0.26 |
|     | 150                      | 6.3×8                          | 600    | 0.16 |
|     | 330                      | 8×10.5                         | 850    | 0.08 |
|     | 470                      | 8×10.5                         | 850    | 0.08 |
|     | 560                      | 10×10.5                        | 1190   | 0.06 |
|     | 680                      | 10×10.5                        | 1190   | 0.06 |
| 50  | 47                       | 6.3×6.1                        | 195    | 0.68 |
|     | 100                      | 6.3×8                          | 350    | 0.34 |
|     | 220                      | 8×10.5                         | 670    | 0.18 |
|     | 330                      | 10×10.5                        | 900    | 0.12 |



## TRV series

105°C 5000～10000時間 低インピーダンス品  
Load Life : 105°C 5000 ~ 10000 hours, Low Impedance

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|---------------------|----------------------|---------|---------------|-------------|----------|------|----------|-----------|------|------|------|------|------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3～50Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                 | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>φ 6.3～10</td><td>0.32</td><td>0.28</td><td>0.26</td><td>0.16</td><td>0.14</td><td>0.14</td></tr><tr><td>φ 12.5～18</td><td>0.30</td><td>0.26</td><td>0.22</td><td>0.16</td><td>0.14</td><td>0.12</td></tr></table> <p>(20℃, 120Hz)</p> <p>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br/>When rated capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.</p>                                                                                                                                                                                                                      | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | 50                  | φ 6.3～10             | 0.32    | 0.28          | 0.26        | 0.16     | 0.14 | 0.14     | φ 12.5～18 | 0.30 | 0.26 | 0.22 | 0.16 | 0.14 | 0.12 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10                            | 16                                                | 25                           | 35                                                         | 50                      |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| φ 6.3～10                                                                 | 0.32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.28                          | 0.26                                              | 0.16                         | 0.14                                                       | 0.14                    |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| φ 12.5～18                                                                | 0.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.26                          | 0.22                                              | 0.16                         | 0.14                                                       | 0.12                    |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 耐久性<br>Endurance                                                         | <p>105℃中で右表の時間定格電圧印加後、下記項目を満足すること。<br/>After applying rated voltage for specified time at 105℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> <table><tr><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Life Time</td></tr><tr><td rowspan="2">φ D=6.3</td><td>L=6.1<br/>5000</td></tr><tr><td>L=8<br/>6000</td></tr><tr><td>φ D=8,10</td><td>8000</td></tr><tr><td>φ D≥12.5</td><td>10000</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Life Time | φ D=6.3 | L=6.1<br>5000 | L=8<br>6000 | φ D=8,10 | 8000 | φ D≥12.5 | 10000     |      |      |      |      |      |      |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| ケースサイズ<br>Case Size                                                      | 時間(hrs)<br>Life Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| φ D=6.3                                                                  | L=6.1<br>5000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
|                                                                          | L=8<br>6000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| φ D=8,10                                                                 | 8000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| φ D≥12.5                                                                 | 10000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>4</td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td></tr></table> <p>(120Hz)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | 50                  | Z(-40℃)/Z(20℃)       | 4       | 4             | 4           | 4        | 3    | 3        |           |      |      |      |      |      |      |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10                            | 16                                                | 25                           | 35                                                         | 50                      |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |
| Z(-40℃)/Z(20℃)                                                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4                             | 4                                                 | 4                            | 3                                                          | 3                       |                                             |                     |                      |         |               |             |          |      |          |           |      |      |      |      |      |      |

### ◆呼称方法／PART NUMBER

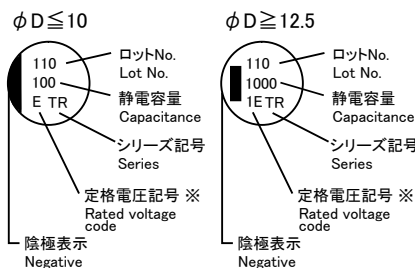
|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TRV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|----------------------|------|------|------|-------|
| 10～33μF              | 0.45 | 0.75 | 0.90 | 1.00  |
| 47～100μF             | 0.50 | 0.80 | 0.95 | 1.00  |
| 220～8200μF           | 0.60 | 0.85 | 0.95 | 1.00  |

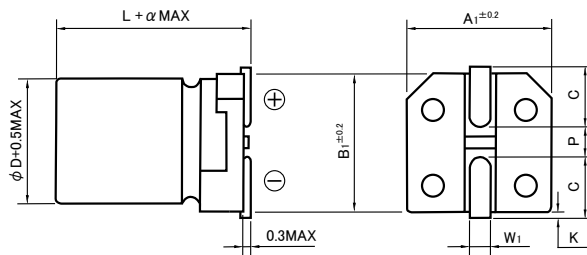
### ◆表示／MARKING



#### ※電圧記号 Voltage code

| 定格電圧(Vdc)<br>Rated Voltage | 6.3        | 10 | 16 |
|----------------------------|------------|----|----|
| 記号<br>code                 | φD≤10 j    | A  | C  |
|                            | φD≥12.5 0J | 1A | 1C |
| 定格電圧(Vdc)<br>Rated Voltage | 25         | 35 | 50 |
| 記号<br>code                 | φD≤10 E    | V  | H  |
|                            | φD≥12.5 1E | 1V | 1H |

◆寸法図／DIMENSIONS



| φD   | L    | A1   | B1   | C   | W1      | P   | K       | α   |
|------|------|------|------|-----|---------|-----|---------|-----|
| 6.3  | 6.1  | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 | 0.5MAX  | 0   |
| 6.3  | 8    | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 | 0.5MAX  | 0   |
| 8    | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 | 0.5MAX  | 0   |
| 10   | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 | 0.5MAX  | 0   |
| 12.5 | 13.5 | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5 |
| 12.5 | 16   | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | 0.7±0.4 | 0.5 |
| 16   | 16.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 16   | 21.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 18   | 16.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |
| 18   | 21.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | 0.7±0.4 | 0.5 |

◆標準品一覧表／STANDARD SIZE

Size φD × L(mm), Rated Ripple Current (mA r.m.s./105°C, 100kHz), Impedance(Ω MAX/20°C, 100kHz)

| Vdc | Cap (μF) | Size (φD × L) | Ripple | Impedance |
|-----|----------|---------------|--------|-----------|
| 6.3 | 470      | 8×10.5        | 600    | 0.15      |
|     | 820      | 10×10.5       | 850    | 0.12      |
|     | 2200     | 12.5×13.5     | 950    | 0.092     |
|     | 2700     | 12.5×16       | 1200   | 0.074     |
|     | 3900     | 16×16.5       | 1450   | 0.066     |
|     | 5600     | 18×16.5       | 1550   | 0.064     |
|     | 6800     | 16×21.5       | 2000   | 0.041     |
|     | 8200     | 18×21.5       | 2150   | 0.039     |
| 10  | 330      | 8×10.5        | 600    | 0.15      |
|     | 680      | 10×10.5       | 850    | 0.12      |
|     | 1800     | 12.5×13.5     | 950    | 0.092     |
|     | 2200     | 12.5×16       | 1200   | 0.074     |
|     | 3300     | 16×16.5       | 1450   | 0.066     |
|     | 4700     | 18×16.5       | 1550   | 0.064     |
|     | 5600     | 16×21.5       | 2000   | 0.041     |
|     | 6800     | 18×21.5       | 2150   | 0.039     |
| 16  | 330      | 8×10.5        | 600    | 0.15      |
|     | 470      | 10×10.5       | 850    | 0.12      |
|     | 1500     | 12.5×13.5     | 950    | 0.092     |
|     | 1800     | 12.5×16       | 1200   | 0.074     |
|     | 2200     | 16×16.5       | 1450   | 0.066     |
|     | 3300     | 18×16.5       | 1550   | 0.064     |
|     | 4700     | 16×21.5       | 2000   | 0.041     |
|     | 5600     | 18×21.5       | 2150   | 0.039     |

| Vdc | Cap (μF) | Size (φD × L) | Ripple | Impedance |
|-----|----------|---------------|--------|-----------|
| 25  | 100      | 6.3×8         | 230    | 0.7       |
|     | 220      | 8×10.5        | 600    | 0.15      |
|     | 330      | 10×10.5       | 850    | 0.12      |
|     | 1000     | 12.5×13.5     | 950    | 0.092     |
|     | 1200     | 12.5×16       | 1200   | 0.074     |
|     | 1500     | 16×16.5       | 1450   | 0.066     |
|     | 2200     | 18×16.5       | 1550   | 0.064     |
|     | 2700     | 16×21.5       | 2000   | 0.041     |
|     | 3300     | 18×21.5       | 2150   | 0.039     |
|     |          |               |        |           |
| 35  | 10       | 6.3×6.1       | 140    | 1         |
|     | 22       | 6.3×6.1       | 140    | 1         |
|     | 33       | 6.3×6.1       | 140    | 1         |
|     | 47       | 6.3×8         | 230    | 0.7       |
|     | 100      | 8×10.5        | 600    | 0.15      |
|     | 220      | 10×10.5       | 850    | 0.12      |
|     | 470      | 12.5×13.5     | 950    | 0.092     |
|     | 680      | 12.5×16       | 1200   | 0.074     |
|     | 1000     | 16×16.5       | 1450   | 0.066     |
|     | 1500     | 18×16.5       | 1550   | 0.064     |
|     | 2200     | 16×21.5       | 2000   | 0.041     |
|     | 2700     | 18×21.5       | 2150   | 0.039     |
|     |          |               |        |           |
|     | 10       | 6.3×6.1       | 140    | 1         |
|     | 33       | 6.3×8         | 230    | 0.7       |
| 50  | 47       | 8×10.5        | 350    | 0.36      |
|     | 100      | 10×10.5       | 670    | 0.25      |
|     | 330      | 12.5×13.5     | 850    | 0.18      |
|     | 390      | 12.5×16       | 950    | 0.15      |
|     | 470      | 16×16.5       | 1200   | 0.12      |
|     | 820      | 18×16.5       | 1300   | 0.12      |
|     | 1000     | 16×21.5       | 1600   | 0.08      |
|     | 1500     | 18×21.5       | 1650   | 0.072     |
|     |          |               |        |           |
|     |          |               |        |           |

## TSV series

150°C 1000~1500時間 低ESR品  
Load life : 150°C 1000~1500 hours Low ESR

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|---------------------|----------------------|-------|------|---------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+150℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 定格電圧範囲<br>Rated Voltage Range                                            | 25～35Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                 | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td></tr><tr><td>φ8～φ10</td><td>0.18</td><td>0.16</td></tr><tr><td>φ12.5～φ18</td><td>0.16</td><td>0.14</td></tr></table> (20℃, 120Hz)<br>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF                                                                                                                                                                                                                                                                                         | 定格電圧(Vdc)<br>Rated Voltage    | 25                                                | 35                           | φ8～φ10                                                     | 0.18                    | 0.16                                        | φ12.5～φ18           | 0.16                 | 0.14  |      |         |      |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 35                            |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| φ8～φ10                                                                   | 0.18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.16                          |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| φ12.5～φ18                                                                | 0.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.14                          |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 耐久性<br>Endurance                                                         | 150℃中で右表の時間定格電圧印加後、下記項目を満足すること。<br>After applying rated voltage for specified time at 150℃, the capacitors shall meet the following Criteria.<br><table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> <table><tr><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Life Time</td></tr><tr><td>φD≤10</td><td>1000</td></tr><tr><td>φD≥12.5</td><td>1500</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Life Time | φD≤10 | 1000 | φD≥12.5 | 1500 |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| ケースサイズ<br>Case Size                                                      | 時間(hrs)<br>Life Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| φD≤10                                                                    | 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| φD≥12.5                                                                  | 1500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 定格電圧(Vdc)<br>Rated Voltage    | 25                                                | 35                           | Z(-40℃)/Z(20℃)                                             | 3                       | 3                                           |                     |                      |       |      |         |      |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 35                            |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |
| Z(-40℃)/Z(20℃)                                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3                             |                                                   |                              |                                                            |                         |                                             |                     |                      |       |      |         |      |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TSV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

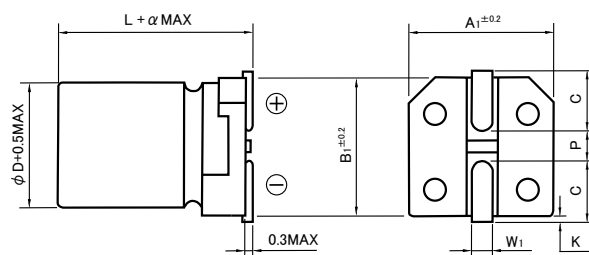
#### MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
|-----------------------|------|------|------|--------|
| 47~560 μF             | 0.50 | 0.74 | 0.94 | 1.00   |
| 750~1800 μF           | 0.60 | 0.74 | 0.94 | 1.00   |
| 2400 μF               | 0.64 | 0.75 | 0.95 | 1.00   |

### ◆表示／MARKING

| φD ≤ 10                    | φD ≥ 12.5      | ※電圧記号 Voltage code                                                                                                                                                                            |                            |    |    |                      |                |                    |
|----------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----|----|----------------------|----------------|--------------------|
|                            |                | <table border="1"> <tr> <td>定格電圧(Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td></tr> <tr> <td>電圧記号<br/>Voltage code</td><td>φD ≤ 10<br/>E V</td><td>φD ≥ 12.5<br/>1E 1V</td></tr> </table> | 定格電圧(Vdc)<br>Rated Voltage | 25 | 35 | 電圧記号<br>Voltage code | φD ≤ 10<br>E V | φD ≥ 12.5<br>1E 1V |
| 定格電圧(Vdc)<br>Rated Voltage | 25             | 35                                                                                                                                                                                            |                            |    |    |                      |                |                    |
| 電圧記号<br>Voltage code       | φD ≤ 10<br>E V | φD ≥ 12.5<br>1E 1V                                                                                                                                                                            |                            |    |    |                      |                |                    |

◆寸法図／DIMENSIONS



| (mm)     |      |      |      |     |         |     |               |          |
|----------|------|------|------|-----|---------|-----|---------------|----------|
| $\phi D$ | L    | A1   | B1   | C   | W1      | P   | K             | $\alpha$ |
| 8        | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 | 0.5MAX        | 0        |
| 10       | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 | 0.5MAX        | 0        |
| 12.5     | 13.5 | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | $0.7 \pm 0.4$ | 0.5      |
| 12.5     | 16   | 13   | 13   | 4.9 | 0.8~1.1 | 4.5 | $0.7 \pm 0.4$ | 0.5      |
| 16       | 16.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | $0.7 \pm 0.4$ | 0.5      |
| 16       | 21.5 | 17   | 17   | 6   | 1.0~1.6 | 6.8 | $0.7 \pm 0.4$ | 0.5      |
| 18       | 16.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | $0.7 \pm 0.4$ | 0.5      |
| 18       | 21.5 | 19   | 19   | 7   | 1.0~1.6 | 6.8 | $0.7 \pm 0.4$ | 0.5      |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法 Size<br>$\phi D \times L$<br>(mm) | 定格リプル電流<br>Rated ripple current<br>(mA r.m.s./150°C, 100kHz) | 等価直列抵抗<br>ESR( $\Omega$ MAX) |               |
|--------------------------------|------------------------------------|----------------------------------------|--------------------------------------------------------------|------------------------------|---------------|
|                                |                                    |                                        |                                                              | 20°C, 100kHz                 | -40°C, 100kHz |
| 25                             | 100                                | 8X10.5                                 | 110                                                          | 0.18                         | 3.0           |
|                                | 220                                | 10X10.5                                | 150                                                          | 0.12                         | 2.0           |
|                                | 560                                | 12.5X13.5                              | 940                                                          | 0.10                         | 1.6           |
|                                | 750                                | 12.5X16                                | 1120                                                         | 0.078                        | 1.3           |
|                                | 1000                               | 16X16.5                                | 1170                                                         | 0.070                        | 1.0           |
|                                | 1500                               | 18X16.5                                | 1240                                                         | 0.065                        | 0.80          |
|                                | 1800                               | 16X21.5                                | 1520                                                         | 0.042                        | 0.60          |
|                                | 2400                               | 18X21.5                                | 1610                                                         | 0.040                        | 0.50          |
| 35                             | 47                                 | 8X10.5                                 | 110                                                          | 0.18                         | 3.0           |
|                                | 100                                | 10X10.5                                | 150                                                          | 0.12                         | 2.0           |
|                                | 330                                | 12.5X13.5                              | 940                                                          | 0.10                         | 1.6           |
|                                | 390                                | 12.5X16                                | 1120                                                         | 0.078                        | 1.3           |
|                                | 560                                | 16X16.5                                | 1170                                                         | 0.070                        | 1.0           |
|                                | 750                                | 18X16.5                                | 1240                                                         | 0.065                        | 0.80          |
|                                | 910                                | 16X21.5                                | 1520                                                         | 0.042                        | 0.60          |
|                                | 1200                               | 18X21.5                                | 1610                                                         | 0.040                        | 0.50          |

# TXV series

125℃ 1000~2000時間 低ESR品  
Load Life : 125℃ 1000~2000 hours Low ESR

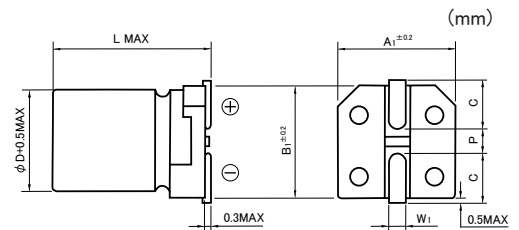
AEC-Q200



## ◆規格表／SPECIFICATIONS

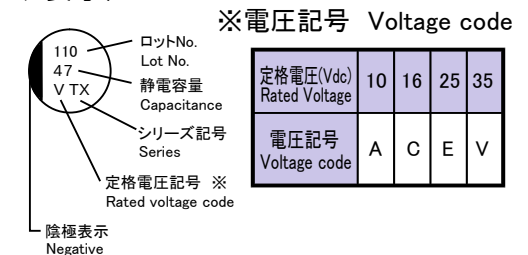
| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                   |                                                          |      |      |                 |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------|------|-----------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40~+125℃                                                                                                                                                                            |                                                          |      |      |                 |
| 定格電圧範囲<br>Rated Voltage Range                                            | 10~35Vdc                                                                                                                                                                             |                                                          |      |      |                 |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                    |                                                          |      |      |                 |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV 又は 3μA のいずれか大なる値以下 (定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage |                                                          |      |      |                 |
| 損失角の正接<br>(tan δ)<br>Dissipation Factor(MAX)                             | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                          | 10                                                       | 16   | 25   | 35 (20℃, 120Hz) |
|                                                                          | tan δ                                                                                                                                                                                | 0.30                                                     | 0.20 | 0.18 | 0.16            |
| 耐久性<br>Endurance                                                         | 125℃中で表の時間定格電圧(リプル重量)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 125℃, the capacitors shall meet the following requirements.    |                                                          |      |      |                 |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                        | 初期値の±30%以内<br>Within ±30% of the initial value.          |      |      |                 |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                         | 規格値の300%以下<br>Not more than 300% of the specified value. |      |      |                 |
|                                                                          | 漏れ電流<br>Leakage Current                                                                                                                                                              | 規格値以下<br>Not more than the specified value.              |      |      |                 |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | ケースサイズ<br>Case Size                                                                                                                                                                  | 時間(hrs)<br>LifeTime                                      |      |      |                 |
|                                                                          | φD=6.3                                                                                                                                                                               | 1000                                                     |      |      |                 |
|                                                                          | φD≥8                                                                                                                                                                                 | 2000                                                     |      |      |                 |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                          | 10                                                       | 16   | 25   | 35 (120Hz)      |
|                                                                          | Z(-40℃) / Z(20℃)                                                                                                                                                                     | 6                                                        | 4    | 4    | 3               |

## ◆寸法図／DIMENSIONS



| φD  | L    | A1   | B1   | C   | W1      | P   |
|-----|------|------|------|-----|---------|-----|
| 6.3 | 6.1  | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 6.3 | 8    | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 8   | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 |
| 10  | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 |

## ◆表示／MARKING



## ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|------|------|------|-------|
| 22~33 μF              | 0.45 | 0.75 | 0.90 | 1.00  |
| 47~100 μF             | 0.50 | 0.80 | 0.95 | 1.00  |
| 220~470 μF            | 0.60 | 0.85 | 0.95 | 1.00  |

## ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TXV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

## ◆標準品一覧表／STANDARD SIZE

Size φD×L(mm), Rated Ripple Current (mA r.m.s./125℃, 100kHz), ESR(Ω MAX/100kHz)

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR |      |
|-----|----------|-------------|--------|-----|------|
|     |          |             |        | 20℃ | -40℃ |
| 10  | 100      | 6.3×8       | 140    | 0.3 | 5    |
|     | 220      | 6.3×8       | 110    | 0.7 | 11   |
|     | 470      | 10×10.5     | 300    | 0.2 | 3    |
| 16  | 47       | 6.3×6.1     | 70     | 1   | 15   |
|     |          | 6.3×8       | 140    | 0.3 | 5    |

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR  |      |
|-----|----------|-------------|--------|------|------|
|     |          |             |        | 20℃  | -40℃ |
| 25  | 33       | 6.3×6.1     | 70     | 1    | 15   |
|     | 47       | 6.3×8       | 140    | 0.3  | 5    |
|     | 100      | 6.3×8       | 110    | 0.7  | 11   |
|     |          | 8×10.5      | 300    | 0.16 | 2.5  |
|     | 220      | 8×10.5      | 220    | 0.3  | 4.5  |
|     |          | 10×10.5     | 420    | 0.1  | 1.5  |
|     | 330      | 10×10.5     | 300    | 0.2  | 3    |

| Vdc | Cap (μF) | Size (φDXL) | Ripple | ESR  |      |
|-----|----------|-------------|--------|------|------|
|     |          |             |        | 20℃  | -40℃ |
| 35  | 22       | 6.3×6.1     | 70     | 1    | 15   |
|     | 33       | 6.3×8       | 140    | 0.3  | 5    |
|     | 47       | 6.3×8       | 110    | 0.7  | 11   |
|     |          | 8×10.5      | 300    | 0.16 | 2.5  |
|     | 100      | 8×10.5      | 220    | 0.3  | 4.5  |
|     |          | 10×10.5     | 420    | 0.1  | 1.5  |
|     | 220      | 10×10.5     | 300    | 0.2  | 3    |

## TZV series

105°C 2000時間 低インピーダンス品  
Load life : 105°C 2000 hours Low Impedance

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|----|----------------|------|------|------|------|------|------|----------------|---|---|---|---|---|---|----------------|---|---|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -55~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3~50Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                              |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor(MAX)                                 | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>tan δ</td><td>0.26</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                            | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | 50 | tan δ          | 0.26 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10                            | 16                                                | 25                           | 35                                                         | 50                      |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| tan δ                                                                    | 0.26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.19                          | 0.16                                              | 0.14                         | 0.12                                                       | 0.10                    |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で2000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 2000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Z(-55℃)/Z(20℃)</td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 6.3                                               | 10                           | 16                                                         | 25                      | 35                                          | 50 | Z(-25℃)/Z(20℃) | 2    | 2    | 2    | 2    | 2    | 2    | Z(-40℃)/Z(20℃) | 3 | 3 | 3 | 3 | 3 | 3 | Z(-55℃)/Z(20℃) | 4 | 4 | 4 | 3 | 3 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10                            | 16                                                | 25                           | 35                                                         | 50                      |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| Z(-25℃)/Z(20℃)                                                           | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2                             | 2                                                 | 2                            | 2                                                          | 2                       |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| Z(-40℃)/Z(20℃)                                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3                             | 3                                                 | 3                            | 3                                                          | 3                       |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |
| Z(-55℃)/Z(20℃)                                                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4                             | 4                                                 | 3                            | 3                                                          | 3                       |                                             |    |                |      |      |      |      |      |      |                |   |   |   |   |   |   |                |   |   |   |   |   |   |

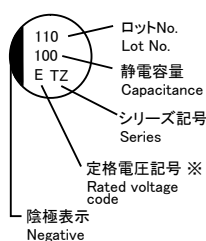
### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TZV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|------|------|------|-------|
| 4.7 μF                | 0.30 | 0.60 | 0.80 | 1.00  |
| 10~47 μF              | 0.32 | 0.75 | 0.90 | 1.00  |
| 100 μF                | 0.50 | 0.80 | 0.95 | 1.00  |
| 220~1000 μF           | 0.60 | 0.85 | 0.95 | 1.00  |

### ◆表示／MARKING

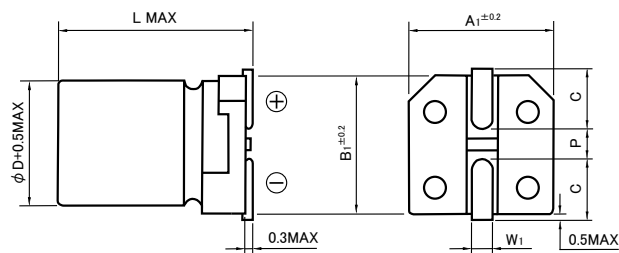


※電圧記号 Voltage code

|                             |     |    |    |    |    |    |
|-----------------------------|-----|----|----|----|----|----|
| 定格電圧 (Vdc)<br>Rated Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 |
| 電圧記号<br>Voltage code        | j   | A  | C  | E  | V  | H  |



◆寸法図／DIMENSIONS



(mm)

| φD  | L    | A1   | B1   | C   | W1      | P   |
|-----|------|------|------|-----|---------|-----|
| 4   | 6.1  | 4.3  | 4.3  | 1.8 | 0.5~0.8 | 1.0 |
| 5   | 6.1  | 5.3  | 5.3  | 2.2 | 0.5~0.8 | 1.3 |
| 6.3 | 6.1  | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 6.3 | 8    | 6.6  | 6.6  | 2.7 | 0.5~0.8 | 1.8 |
| 8   | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 |
| 10  | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 |

◆標準品一覧表／STANDARD SIZE

Size φD×L(mm), Rated Ripple Current (mA r.m.s./105°C, 100kHz), Impedance(Ω MAX/20°C, 100kHz)

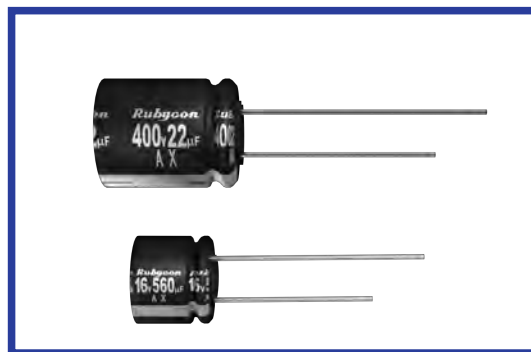
| Vdc | Cap (μF) | Size (φDXL) | Ripple | Impedance |
|-----|----------|-------------|--------|-----------|
| 6.3 | 22       | 4×6.1       | 90     | 1.35      |
|     | 47       | 4×6.1       | 90     | 1.35      |
|     |          | 5×6.1       | 170    | 0.70      |
|     | 100      | 5×6.1       | 170    | 0.70      |
|     |          | 6.3×6.1     | 250    | 0.36      |
|     | 220      | 6.3×6.1     | 250    | 0.36      |
|     |          | 6.3×8       | 300    | 0.34      |
|     | 330      | 6.3×8       | 300    | 0.34      |
| 10  | 1000     | 8×10.5      | 600    | 0.16      |
|     | 33       | 4×6.1       | 90     | 1.35      |
|     | 220      | 6.3×8       | 300    | 0.34      |
|     | 470      | 8×10.5      | 600    | 0.16      |
|     | 680      | 8×10.5      | 600    | 0.16      |
| 16  | 1000     | 10×10.5     | 850    | 0.08      |
|     | 10       | 4×6.1       | 90     | 1.35      |
|     |          | 5×6.1       | 170    | 0.70      |
|     | 22       | 4×6.1       | 90     | 1.35      |
|     |          | 5×6.1       | 170    | 0.70      |
|     | 33       | 5×6.1       | 170    | 0.70      |
|     |          | 6.3×6.1     | 250    | 0.36      |
|     | 47       | 5×6.1       | 170    | 0.70      |
|     |          | 6.3×6.1     | 250    | 0.36      |
|     | 100      | 6.3×6.1     | 250    | 0.36      |
|     |          | 6.3×8       | 300    | 0.34      |
|     | 220      | 6.3×8       | 300    | 0.34      |
|     | 330      | 8×10.5      | 600    | 0.16      |
|     | 470      | 8×10.5      | 600    | 0.16      |
|     | 680      | 10×10.5     | 850    | 0.08      |

| Vdc | Cap (μF) | Size (φDXL) | Ripple | Impedance |
|-----|----------|-------------|--------|-----------|
| 25  | 33       | 5×6.1       | 170    | 0.70      |
|     |          | 6.3×6.1     | 250    | 0.36      |
|     | 47       | 6.3×6.1     | 250    | 0.36      |
|     |          | 6.3×8       | 300    | 0.34      |
|     | 220      | 8×10.5      | 600    | 0.16      |
|     |          | 8×10.5      | 600    | 0.16      |
|     | 470      | 10×10.5     | 850    | 0.09      |
|     |          | 10×10.5     | 850    | 0.09      |
| 35  | 4.7      | 4×6.1       | 90     | 1.45      |
|     |          | 4×6.1       | 90     | 1.45      |
|     | 10       | 5×6.1       | 170    | 0.70      |
|     |          | 5×6.1       | 170    | 0.70      |
|     | 22       | 5×6.1       | 170    | 0.70      |
|     |          | 6.3×6.1     | 250    | 0.36      |
|     | 33       | 6.3×6.1     | 250    | 0.36      |
|     |          | 6.3×6.1     | 250    | 0.36      |
|     | 47       | 6.3×6.1     | 250    | 0.36      |
|     |          | 6.3×8       | 300    | 0.34      |
|     | 100      | 6.3×8       | 300    | 0.34      |
|     |          | 8×10.5      | 600    | 0.16      |
| 50  | 220      | 8×10.5      | 600    | 0.16      |
|     |          | 10×10.5     | 850    | 0.09      |
|     | 330      | 10×10.5     | 850    | 0.09      |
|     |          | 10×10.5     | 850    | 0.09      |
|     | 4.7      | 4×6.1       | 60     | 2.90      |
|     |          | 4×6.1       | 60     | 2.90      |
|     | 10       | 5×6.1       | 85     | 1.52      |
|     |          | 6.3×6.1     | 165    | 0.88      |
|     | 22       | 6.3×6.1     | 165    | 0.88      |
|     |          | 6.3×6.1     | 165    | 0.88      |
|     | 33       | 6.3×8       | 195    | 0.68      |
|     |          | 6.3×8       | 195    | 0.68      |
|     | 47       | 6.3×8       | 195    | 0.68      |
|     |          | 6.3×8       | 195    | 0.68      |
|     | 100      | 8×10.5      | 350    | 0.34      |
|     |          | 8×10.5      | 350    | 0.34      |
|     | 220      | 10×10.5     | 670    | 0.18      |
|     |          | 10×10.5     | 670    | 0.18      |

## AX series

105°C 1000~2000時間品 超小形化品  
Load Life: 105°C, 1000~2000 hours, Ultra Miniaturized

・携帯機器 ACアダプタ用  
Suitable for AC-adaptor of portable device.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                      |                                                                                                                                                                                           |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40~+105°C                                                                                                                                                                              |                                                                                                                                                                                           |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3~35, 400Vdc                                                                                                                                                                          |                                                                                                                                                                                           |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20°C, 120Hz)                                                                                                                                                                       |                                                                                                                                                                                           |
| 漏れ電流<br>Leakage Current (MAX)                                            | 6.3~35Vdc                                                                                                                                                                               | 400Vdc                                                                                                                                                                                    |
|                                                                          | I=0.01CV又は3μAのいずれか大なる値以下<br>(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater.<br>(After 2 minutes)                                                                                   | I=0.04CV+100μA以下(定格電圧印加1分後)<br>I=0.04CV+100μA (After 1 minute application of rated voltage)<br>I=0.02CV+25μA以下(定格電圧印加5分後)<br>I=0.02CV+25μA (After 5 minutes application of rated voltage) |
|                                                                          | I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                          |                                                                                                                                                                                           |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                              | 6.3 8 10 16 25 35 400 (20°C, 120Hz)                                                                                                                                                       |
|                                                                          | tan δ                                                                                                                                                                                   | 0.22 0.20 0.19 0.16 0.14 0.12 0.25                                                                                                                                                        |
| 耐久性<br>Endurance                                                         | 105°C中で右表の時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105°C,<br>the capacitors shall meet the following requirements. |                                                                                                                                                                                           |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                           | 初期値の±25%以内<br>Within ±25% of the initial value.                                                                                                                                           |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                            | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 漏れ電流<br>Leakage Current                                                                                                                                                                 | 規格値以下<br>Not more than the specified value.                                                                                                                                               |
|                                                                          | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                              | 6.3 8 10 16 25 35 400 (120Hz)                                                                                                                                                             |
|                                                                          | Z(-25°C)/Z(+20°C)                                                                                                                                                                       | 2 2 2 2 2 2 6                                                                                                                                                                             |
|                                                                          | Z(-40°C)/Z(+20°C)                                                                                                                                                                       | 12 12 12 10 8 6 10                                                                                                                                                                        |
|                                                                          |                                                                                                                                                                                         |                                                                                                                                                                                           |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | AX              | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

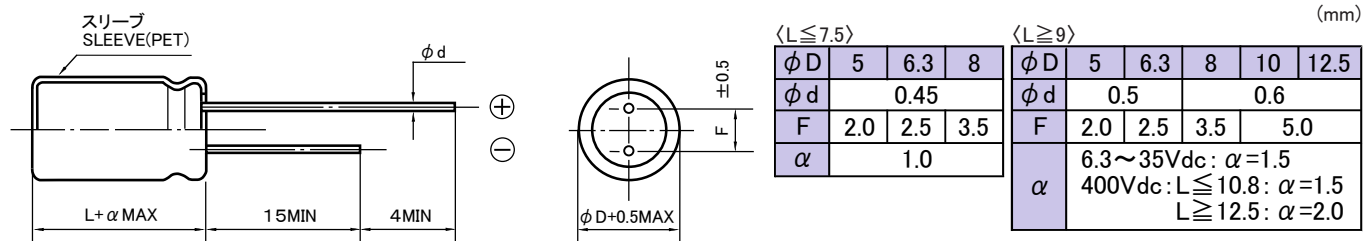
### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve

### ◆リプル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

| 6.3~35Vdc         |            |      |      |      |       | 400Vdc            |           |        |      |      |      |      |
|-------------------|------------|------|------|------|-------|-------------------|-----------|--------|------|------|------|------|
| Frequency (Hz)    |            | 120  | 1k   | 10k  | 100k≤ | Frequency (Hz)    |           | 60(50) | 120  | 500  | 1k   | 10k≤ |
| 係数<br>Coefficient | 68~82μF    | 0.21 | 0.73 | 0.92 | 1.00  | 係数<br>Coefficient | 4.7~8.2μF | 0.65   | 1.00 | 1.20 | 1.30 | 1.50 |
|                   | 150~270μF  | 0.36 | 0.73 | 0.92 | 1.00  |                   | 10~24μF   | 0.80   | 1.00 | 1.20 | 1.30 | 1.50 |
|                   | 330~750μF  | 0.55 | 0.77 | 0.94 | 1.00  |                   |           |        |      |      |      |      |
|                   | 820~1200μF | 0.60 | 0.80 | 0.96 | 1.00  |                   |           |        |      |      |      |      |

◆寸法図／DIMENSIONS



◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz), Impedance (Ω MAX/20°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current | インピーダンス<br>Impedance |
|--------------------------------|-----------------------------|---------------------------|----------------------------------------|----------------------|
| 6.3                            | 82                          | 5×7                       | 510                                    | 0.25                 |
|                                | 220                         | 5×11                      | 800                                    | 0.14                 |
|                                |                             | 6.3×7                     | 720                                    | 0.13                 |
|                                | 470                         | 6.3×11                    | 1140                                   | 0.067                |
|                                |                             | 8×7.5                     | 1080                                   | 0.065                |
|                                | 680                         | 8×9                       | 1360                                   | 0.049                |
|                                | 820                         | 8×10.8                    | 1600                                   | 0.042                |
|                                | 1000                        | 8×16                      | 2010                                   | 0.027                |
| 8                              | 1000                        | 10×9                      | 1540                                   | 0.036                |
|                                |                             | 10×12.5                   | 1970                                   | 0.025                |
|                                | 75                          | 5×7                       | 510                                    | 0.25                 |
|                                | 200                         | 5×11                      | 800                                    | 0.14                 |
|                                |                             | 6.3×7                     | 720                                    | 0.13                 |
|                                | 390                         | 8×7.5                     | 1080                                   | 0.065                |
|                                | 430                         | 6.3×11                    | 1140                                   | 0.067                |
|                                | 620                         | 8×9                       | 1360                                   | 0.049                |
| 10                             | 750                         | 8×10.8                    | 1600                                   | 0.042                |
|                                | 910                         | 8×16                      | 2010                                   | 0.027                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
|                                | 1100                        | 10×12.5                   | 1970                                   | 0.025                |
|                                | 68                          | 5×7                       | 510                                    | 0.25                 |
|                                | 180                         | 5×11                      | 800                                    | 0.14                 |
|                                |                             | 6.3×7                     | 720                                    | 0.13                 |
|                                | 330                         | 8×7.5                     | 1080                                   | 0.065                |
| 16                             | 390                         | 6.3×11                    | 1140                                   | 0.067                |
|                                | 560                         | 8×9                       | 1360                                   | 0.049                |
|                                | 680                         | 8×10.8                    | 1600                                   | 0.042                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
|                                | 1000                        | 8×16                      | 2010                                   | 0.027                |
|                                |                             | 10×12.5                   | 1970                                   | 0.025                |
|                                | 1000                        | 10×16                     | 2480                                   | 0.019                |
|                                |                             | 10×16                     | 2480                                   | 0.019                |
| 25                             | 220                         | 8×9                       | 1360                                   | 0.049                |
|                                | 270                         | 8×10.8                    | 1600                                   | 0.042                |
|                                | 390                         | 8×16                      | 2010                                   | 0.027                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
|                                | 470                         | 10×12.5                   | 1970                                   | 0.025                |
|                                | 680                         | 10×16                     | 2480                                   | 0.019                |
|                                | 150                         | 8×9                       | 1360                                   | 0.049                |
|                                | 180                         | 8×10.8                    | 1600                                   | 0.042                |
| 35                             | 220                         | 8×16                      | 2010                                   | 0.027                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
|                                | 270                         | 10×12.5                   | 1970                                   | 0.025                |
|                                | 390                         | 10×16                     | 2480                                   | 0.019                |
|                                | 150                         | 8×9                       | 1360                                   | 0.049                |
|                                | 180                         | 8×10.8                    | 1600                                   | 0.042                |
|                                | 220                         | 8×16                      | 2010                                   | 0.027                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
| 400                            | 270                         | 10×12.5                   | 1970                                   | 0.025                |
|                                | 390                         | 10×16                     | 2480                                   | 0.019                |
|                                | 68                          | 5×7                       | 510                                    | 0.25                 |
|                                | 180                         | 5×11                      | 800                                    | 0.14                 |
|                                |                             | 6.3×7                     | 720                                    | 0.13                 |
|                                | 330                         | 8×7.5                     | 1080                                   | 0.065                |
|                                | 390                         | 6.3×11                    | 1140                                   | 0.067                |
|                                | 560                         | 8×9                       | 1360                                   | 0.049                |
| 6.3                            | 680                         | 8×10.8                    | 1600                                   | 0.042                |
|                                | 820                         | 8×16                      | 2010                                   | 0.027                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
|                                | 1000                        | 10×12.5                   | 1970                                   | 0.025                |
|                                | 68                          | 5×7                       | 510                                    | 0.25                 |
|                                | 180                         | 5×11                      | 800                                    | 0.14                 |
|                                |                             | 6.3×7                     | 720                                    | 0.13                 |
|                                | 330                         | 8×7.5                     | 1080                                   | 0.065                |
| 8                              | 390                         | 6.3×11                    | 1140                                   | 0.067                |
|                                | 560                         | 8×9                       | 1360                                   | 0.049                |
|                                | 680                         | 8×10.8                    | 1600                                   | 0.042                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
|                                | 820                         | 8×16                      | 2010                                   | 0.027                |
|                                |                             | 10×9                      | 1540                                   | 0.036                |
|                                | 1000                        | 10×12.5                   | 1970                                   | 0.025                |
|                                | 1100                        | 10×12.5                   | 1970                                   | 0.025                |

Rated Ripple Current (mA r.m.s./105°C, 120Hz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current |
|--------------------------------|-----------------------------|---------------------------|----------------------------------------|
| 400                            | 4.7                         | 8×9                       | 50                                     |
|                                | 6.8                         | 8×10.8                    | 70                                     |
|                                | 7.5                         | 8×10.8                    | 75                                     |
|                                | 8.2                         | 8×16                      | 85                                     |
|                                |                             | 10×9                      |                                        |
|                                | 10                          | 8×16                      | 90                                     |
|                                |                             | 10×12.5                   | 100                                    |
|                                | 12                          | 8×20                      | 120                                    |
|                                |                             | 10×12.5                   | 110                                    |
|                                | 15                          | 8×20                      | 130                                    |
|                                |                             | 10×16                     | 150                                    |
|                                | 18                          | 10×16                     | 150                                    |
|                                | 22                          | 12.5×16                   | 180                                    |
|                                | 24                          | 12.5×16                   | 190                                    |

## HBX series

125°C 3000時間品  
Load Life: 125°C 3000 hours

- ・高リップル、低ESR 車載専用高信頼性。  
High Ripple Current, Low ESR, High Reliability.
  - ・高圧インバータ等のDCリンクに最適。  
Suitable for DC Link of high voltage inverter.
- AEC-Q200.



車載専用 Automotive Only



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|------|------|-----------------|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 250～290Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.04CV+100 μ A以下 (定格電圧印加1分後)<br>I=0.04CV+100 μ A (After 1 minute)<br>I=漏れ電流 (μ A) C=静電容量 (μ F) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>250</td><td>275</td><td>290</td></tr><tr><td>tan δ</td><td>0.15</td><td>0.15</td><td>0.15</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 250                                               | 275                          | 290                                                        | tan δ                   | 0.15                                        | 0.15 | 0.15 |                 |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 275                           | 290                                               |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| tan δ                                                                    | 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.15                          | 0.15                                              |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 耐久性<br>Endurance                                                         | 125℃中で3000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 3000 hours at 125℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      |      |                 |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>250</td><td>275</td><td>290</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>6</td><td>6</td><td>6</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                       | 定格電圧 (Vdc)<br>Rated Voltage   | 250                                               | 275                          | 290                                                        | Z(-25℃)/Z(+20℃)         | 3                                           | 3    | 3    | Z(-40℃)/Z(+20℃) | 6 | 6 | 6 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 275                           | 290                                               |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3                             | 3                                                 |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6                             | 6                                                 |                              |                                                            |                         |                                             |      |      |                 |   |   |   |

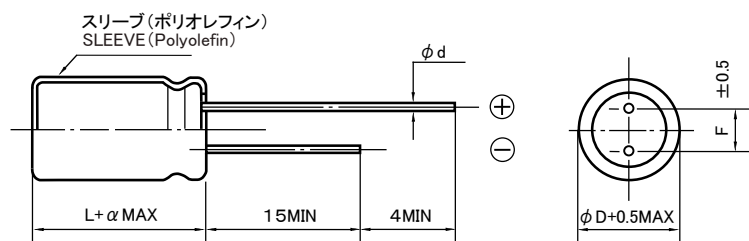
### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | HBX             | □□□□□               | M                                | SPA           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

|                       |      |      |      |       |
|-----------------------|------|------|------|-------|
| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
| 係数 Coefficient        | 0.45 | 0.80 | 1.00 | 1.00  |

◆寸法図／DIMENSIONS



| (mm) |     |      |     |
|------|-----|------|-----|
| φD   | 10  | 12.5 | 16  |
| φd   | 0.8 |      |     |
| F    | 5.0 |      | 7.5 |
| α    | 2.0 |      |     |

◆標準品一覧表／STANDARD SIZE

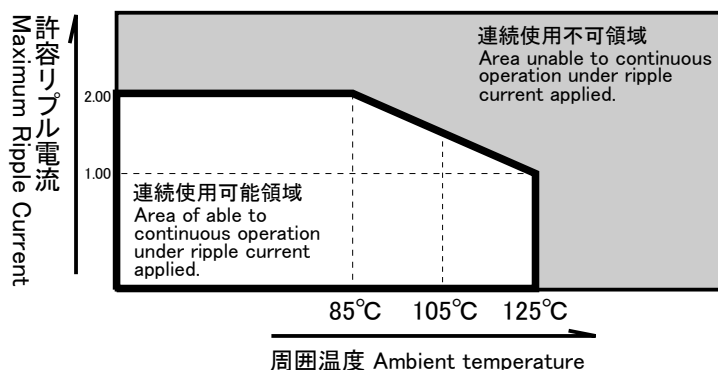
| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L(mm) | 定格リプル電流 I <sub>0</sub><br>Rated ripple current<br>I <sub>0</sub> (mA r.m.s./<br>125°C, 100kHz) | 許容リプル電流 IMAX<br>MAX ripple current<br>IMAX (mA r.m.s./<br>125°C, 100kHz) | 許容リプル電流 IMAX<br>MAX ripple current<br>IMAX (mA r.m.s./<br>105°C, 100kHz) |
|--------------------------------|-----------------------------|--------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 250                            | 30                          | 12.5×20                  | 1100                                                                                           | 1100                                                                     | 1870                                                                     |
|                                | 36                          | 10×30                    | 1330                                                                                           | 1330                                                                     | 2260                                                                     |
|                                | 43                          | 10×35                    | 1550                                                                                           | 1550                                                                     | 2630                                                                     |
|                                | 43                          | 12.5×25                  | 1410                                                                                           | 1410                                                                     | 2390                                                                     |
|                                | 51                          | 10×40                    | 1760                                                                                           | 1760                                                                     | 2990                                                                     |
|                                | 51                          | 16×20                    | 1440                                                                                           | 1440                                                                     | 2440                                                                     |
|                                | 56                          | 12.5×30                  | 1710                                                                                           | 1710                                                                     | 2900                                                                     |
| 275                            | 30                          | 12.5×20                  | 1020                                                                                           | 1020                                                                     | 1730                                                                     |
|                                | 36                          | 10×30                    | 1240                                                                                           | 1240                                                                     | 2100                                                                     |
|                                | 43                          | 10×35                    | 1440                                                                                           | 1440                                                                     | 2440                                                                     |
|                                | 43                          | 12.5×25                  | 1310                                                                                           | 1310                                                                     | 2220                                                                     |
|                                | 51                          | 10×40                    | 1640                                                                                           | 1640                                                                     | 2780                                                                     |
|                                | 51                          | 16×20                    | 1350                                                                                           | 1350                                                                     | 2290                                                                     |
|                                | 56                          | 12.5×30                  | 1590                                                                                           | 1590                                                                     | 2700                                                                     |
| 290                            | 24                          | 12.5×20                  | 830                                                                                            | 830                                                                      | 1410                                                                     |
|                                | 30                          | 10×30                    | 1000                                                                                           | 1000                                                                     | 1700                                                                     |
|                                | 36                          | 10×35                    | 1160                                                                                           | 1160                                                                     | 1970                                                                     |
|                                | 36                          | 12.5×25                  | 1060                                                                                           | 1060                                                                     | 1800                                                                     |
|                                | 43                          | 10×40                    | 1320                                                                                           | 1320                                                                     | 2240                                                                     |
|                                | 43                          | 16×20                    | 1100                                                                                           | 1100                                                                     | 1870                                                                     |
|                                | 43                          | 12.5×30                  | 1290                                                                                           | 1290                                                                     | 2190                                                                     |

定格リプル電流I<sub>0</sub>: 耐久性規格を満たす、連続印加可能なリプル電流。

Rated ripple current I<sub>0</sub>: Ripple current continuous operation within endurance lifetime.

許容リプル電流IMAX: 連続印加可能なリプル電流最大値。寿命推定時間は、寿命計算式に従う。

Maximum ripple current IMAX: Maximum ripple current continuous operation. Estimated lifetime complies with our lifetime calculation formula.



## HGX series

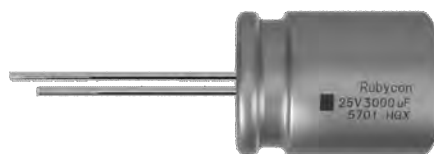
125℃ 3000時間、135℃ 3000時間品  
Load Life: 125℃ 3000 hours, 135℃ 3000 hours

・低圧インバータ等のDCリンク用に最適。  
Suitable for DC Link of low voltage inverter

AEC-Q200.



車載専用 Automotive Only



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|------|------|------|------|-----------------|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+135℃(150℃)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 25～70Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.03CV又は4μAのいずれか大なる値以下(定格電圧印加1分後)<br>I=0.03CV or 4μA whichever is greater. (After 1 minute)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td><td>70</td></tr><tr><td>tan δ</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.10</td></tr></table> (20℃, 120Hz)<br>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.                                                                                                                                                                                                                        | 定格電圧 (Vdc)<br>Rated Voltage   | 25                                              | 35                           | 50                                                         | 70                      | tan δ                                       | 0.14 | 0.12 | 0.10 | 0.10 |                 |   |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 35                            | 50                                              | 70                           |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| tan δ                                                                    | 0.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.12                          | 0.10                                            | 0.10                         |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 耐久性<br>Endurance                                                         | 125℃又は135℃において3000時間(≧50Vdc:2000時間)定格電圧(定格リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 3000 hours(≧50Vdc:2000 hours) at each temperature, the capacitors shall meet the following requirements.<br><table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±30%以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±30%以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      |      |      |      |                 |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30%以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 過温度耐性<br>Over temperature proof                                          | 150℃において500時間定格電圧印加後、下記項目を満足すること。<br>After applying rated voltage for 500 hours at 150℃, the capacitors shall meet the following requirements.<br><table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±30%以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table>                                                                                           | 静電容量変化率<br>Capacitance Change | 初期値の±30%以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      |      |      |      |                 |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30%以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                 |                              |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td><td>70</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                    | 定格電圧 (Vdc)<br>Rated Voltage   | 25                                              | 35                           | 50                                                         | 70                      | Z(-25℃)/Z(+20℃)                             | 2    | 2    | 2    | 2    | Z(-40℃)/Z(+20℃) | 3 | 3 | 3 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 35                            | 50                                              | 70                           |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2                             | 2                                               | 2                            |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 3                             | 3                                               | 3                            |                                                            |                         |                                             |      |      |      |      |                 |   |   |   |   |

### ◆呼称方法／PART NUMBER

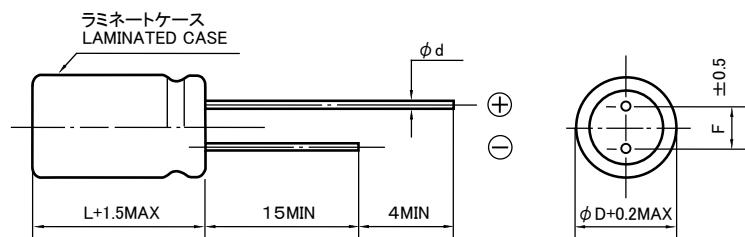
|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | HGX             | □□□□□               | M                                | SPA           | □□                      | D×L                 |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

|                      |      |      |      |       |
|----------------------|------|------|------|-------|
| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
| 係数 Coefficient       | 0.45 | 0.80 | 1.00 | 1.00  |



◆寸法図／DIMENSIONS



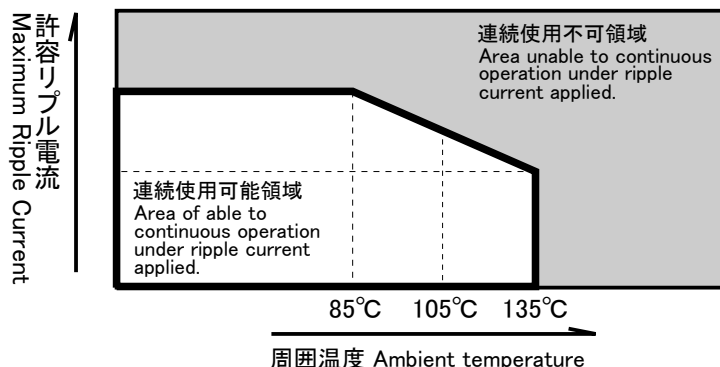
|      |      |     |    |
|------|------|-----|----|
| (mm) |      |     |    |
| φD   | 12.5 | 16  | 18 |
| φd   | 0.8  |     |    |
| F    | 5.0  | 7.5 |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L(mm) | 定格リプル電流 $I_o$<br>Rated ripple current<br>$I_o$ (mA r.m.s./100kHz) |       | ESR<br>(Ω MAX /<br>20°C, 100kHz) | 許容リプル電流 $I_{MAX}$<br>MAX ripple current<br>$I_{MAX}$ (mA r.m.s./100kHz) |       |       |
|--------------------------------|-----------------------------|--------------------------|-------------------------------------------------------------------|-------|----------------------------------|-------------------------------------------------------------------------|-------|-------|
|                                |                             |                          | 135°C                                                             | 125°C |                                  | 135°C                                                                   | 125°C | 105°C |
| 25                             | 910                         | 12.5×20                  | 2060                                                              | 2870  | 0.046                            | 2260                                                                    | 2920  | 3910  |
|                                | 1300                        | 12.5×25                  | 2610                                                              | 3640  | 0.034                            | 2860                                                                    | 3700  | 4960  |
|                                | 1600                        | 12.5×20                  | 2060                                                              | 2870  | 0.046                            | 2260                                                                    | 2920  | 3910  |
|                                | 1600                        | 12.5×30                  | 3030                                                              | 4230  | 0.029                            | 3330                                                                    | 4300  | 5770  |
|                                | 1600                        | 16×20                    | 2320                                                              | 3240  | 0.034                            | 2550                                                                    | 3300  | 4420  |
|                                | 2000                        | 18×20                    | 2490                                                              | 3470  | 0.033                            | 2730                                                                    | 3520  | 4730  |
|                                | 2200                        | 16×25                    | 2930                                                              | 4090  | 0.025                            | 3210                                                                    | 4150  | 5570  |
|                                | 2400                        | 12.5×25                  | 2610                                                              | 3640  | 0.034                            | 2860                                                                    | 3700  | 4960  |
|                                | 2700                        | 16×30                    | 3280                                                              | 4580  | 0.021                            | 3610                                                                    | 4660  | 6250  |
|                                | 2700                        | 18×25                    | 3120                                                              | 4360  | 0.025                            | 3430                                                                    | 4430  | 5940  |
|                                | 3000                        | 12.5×30                  | 3030                                                              | 4230  | 0.029                            | 3330                                                                    | 4300  | 5770  |
|                                | 3000                        | 16×20                    | 2320                                                              | 3240  | 0.034                            | 2550                                                                    | 3300  | 4420  |
|                                | 3600                        | 18×30                    | 3460                                                              | 4840  | 0.021                            | 3800                                                                    | 4910  | 6590  |
|                                | 3900                        | 18×20                    | 2490                                                              | 3470  | 0.033                            | 2730                                                                    | 3520  | 4730  |
|                                | 4300                        | 16×25                    | 2930                                                              | 4090  | 0.025                            | 3210                                                                    | 4150  | 5570  |
|                                | 5600                        | 16×30                    | 3280                                                              | 4580  | 0.021                            | 3610                                                                    | 4660  | 6250  |
|                                | 5600                        | 18×25                    | 3120                                                              | 4360  | 0.025                            | 3430                                                                    | 4430  | 5940  |
|                                | 6800                        | 18×30                    | 3460                                                              | 4840  | 0.021                            | 3800                                                                    | 4910  | 6590  |
| 35                             | 750                         | 12.5×20                  | 2060                                                              | 2870  | 0.046                            | 2260                                                                    | 2920  | 3910  |
|                                | 1000                        | 12.5×25                  | 2610                                                              | 3640  | 0.034                            | 2860                                                                    | 3700  | 4960  |
|                                | 1200                        | 12.5×20                  | 2060                                                              | 2870  | 0.046                            | 2260                                                                    | 2920  | 3910  |
|                                | 1300                        | 12.5×30                  | 3030                                                              | 4230  | 0.029                            | 3330                                                                    | 4300  | 5770  |
|                                | 1300                        | 16×20                    | 2320                                                              | 3240  | 0.034                            | 2550                                                                    | 3300  | 4420  |
|                                | 1600                        | 12.5×25                  | 2610                                                              | 3640  | 0.034                            | 2860                                                                    | 3700  | 4960  |
|                                | 1600                        | 18×20                    | 2490                                                              | 3470  | 0.033                            | 2730                                                                    | 3520  | 4730  |
|                                | 1800                        | 16×25                    | 2930                                                              | 4090  | 0.025                            | 3210                                                                    | 4150  | 5570  |
|                                | 2000                        | 16×20                    | 2320                                                              | 3240  | 0.034                            | 2550                                                                    | 3300  | 4420  |
|                                | 2200                        | 12.5×30                  | 3030                                                              | 4230  | 0.029                            | 3330                                                                    | 4300  | 5770  |
|                                | 2400                        | 16×30                    | 3280                                                              | 4580  | 0.021                            | 3610                                                                    | 4660  | 6250  |
|                                | 2400                        | 18×25                    | 3120                                                              | 4360  | 0.025                            | 3430                                                                    | 4430  | 5940  |
|                                | 2700                        | 18×20                    | 2490                                                              | 3470  | 0.033                            | 2730                                                                    | 3520  | 4730  |
|                                | 3000                        | 16×25                    | 2930                                                              | 4090  | 0.025                            | 3210                                                                    | 4150  | 5570  |
|                                | 3000                        | 18×30                    | 3460                                                              | 4840  | 0.021                            | 3800                                                                    | 4910  | 6590  |
|                                | 3600                        | 16×30                    | 3280                                                              | 4580  | 0.021                            | 3610                                                                    | 4660  | 6250  |
|                                | 3600                        | 18×25                    | 3120                                                              | 4360  | 0.025                            | 3430                                                                    | 4430  | 5940  |
|                                | 4700                        | 18×30                    | 3460                                                              | 4840  | 0.021                            | 3800                                                                    | 4910  | 6590  |

### ◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>$\phi D \times L$ (mm) | 定格リプル電流 $I_o$<br>Rated ripple current<br>$I_o$ (mA r.m.s./100kHz) |       | ESR<br>( $\Omega$ MAX /<br>20°C, 100kHz) | 許容リプル電流 $I_{MAX}$<br>MAX ripple current<br>$I_{MAX}$ (mA r.m.s./100kHz) |       |       |
|--------------------------------|-----------------------------------|----------------------------------------|-------------------------------------------------------------------|-------|------------------------------------------|-------------------------------------------------------------------------|-------|-------|
|                                |                                   |                                        | 135°C                                                             | 125°C |                                          | 135°C                                                                   | 125°C | 105°C |
| 50                             | 510                               | 12.5×20                                | 1530                                                              | 2280  | 0.072                                    | 1860                                                                    | 2400  | 3220  |
|                                | 620                               | 12.5×20                                | 1490                                                              | 2220  | 0.076                                    | 1800                                                                    | 2330  | 3130  |
|                                | 680                               | 12.5×25                                | 1950                                                              | 2900  | 0.052                                    | 2360                                                                    | 3050  | 4090  |
|                                | 910                               | 12.5×25                                | 1890                                                              | 2820  | 0.055                                    | 2290                                                                    | 2960  | 3980  |
|                                | 910                               | 12.5×30                                | 2320                                                              | 3460  | 0.042                                    | 2810                                                                    | 3630  | 4880  |
|                                | 910                               | 16×20                                  | 1890                                                              | 2820  | 0.049                                    | 2290                                                                    | 2960  | 3980  |
|                                | 1100                              | 12.5×30                                | 2250                                                              | 3370  | 0.044                                    | 2730                                                                    | 3530  | 4740  |
|                                | 1100                              | 16×20                                  | 1860                                                              | 2780  | 0.051                                    | 2260                                                                    | 2920  | 3910  |
|                                | 1100                              | 18×20                                  | 2060                                                              | 3070  | 0.047                                    | 2490                                                                    | 3220  | 4320  |
|                                | 1300                              | 16×25                                  | 2390                                                              | 3570  | 0.036                                    | 2900                                                                    | 3750  | 5030  |
|                                | 1300                              | 18×20                                  | 2040                                                              | 3050  | 0.047                                    | 2470                                                                    | 3200  | 4290  |
|                                | 1600                              | 16×25                                  | 2350                                                              | 3510  | 0.037                                    | 2860                                                                    | 3690  | 4950  |
|                                | 1600                              | 16×30                                  | 2840                                                              | 4240  | 0.029                                    | 3440                                                                    | 4450  | 5970  |
|                                | 1600                              | 18×25                                  | 2600                                                              | 3880  | 0.034                                    | 3150                                                                    | 4070  | 5470  |
|                                | 2000                              | 16×30                                  | 2790                                                              | 4170  | 0.030                                    | 3390                                                                    | 4370  | 5870  |
|                                | 2000                              | 18×25                                  | 2580                                                              | 3850  | 0.034                                    | 3130                                                                    | 4040  | 5420  |
|                                | 2000                              | 18×30                                  | 3080                                                              | 4600  | 0.027                                    | 3740                                                                    | 4830  | 6480  |
|                                | 2400                              | 18×30                                  | 3050                                                              | 4560  | 0.028                                    | 3700                                                                    | 4780  | 6420  |
| 70                             | 240                               | 12.5×20                                | 1340                                                              | 2000  | 0.093                                    | 1630                                                                    | 2100  | 2820  |
|                                | 360                               | 12.5×20                                | 1300                                                              | 1940  | 0.099                                    | 1580                                                                    | 2040  | 2740  |
|                                | 360                               | 12.5×25                                | 1710                                                              | 2550  | 0.067                                    | 2070                                                                    | 2680  | 3600  |
|                                | 430                               | 16×20                                  | 1690                                                              | 2530  | 0.062                                    | 2050                                                                    | 2650  | 3560  |
|                                | 470                               | 12.5×30                                | 2040                                                              | 3040  | 0.054                                    | 2470                                                                    | 3190  | 4290  |
|                                | 510                               | 12.5×25                                | 1660                                                              | 2470  | 0.072                                    | 2010                                                                    | 2600  | 3490  |
|                                | 560                               | 18×20                                  | 1860                                                              | 2780  | 0.057                                    | 2260                                                                    | 2920  | 3920  |
|                                | 620                               | 12.5×30                                | 1980                                                              | 2950  | 0.057                                    | 2400                                                                    | 3100  | 4150  |
|                                | 620                               | 16×20                                  | 1660                                                              | 2480  | 0.064                                    | 2010                                                                    | 2600  | 3490  |
|                                | 620                               | 16×25                                  | 2150                                                              | 3200  | 0.045                                    | 2600                                                                    | 3360  | 4510  |
|                                | 750                               | 18×20                                  | 1840                                                              | 2750  | 0.058                                    | 2230                                                                    | 2880  | 3870  |
|                                | 820                               | 16×30                                  | 2550                                                              | 3800  | 0.036                                    | 3090                                                                    | 3990  | 5360  |
|                                | 820                               | 18×25                                  | 2350                                                              | 3510  | 0.042                                    | 2860                                                                    | 3690  | 4950  |
|                                | 910                               | 16×25                                  | 2100                                                              | 3140  | 0.047                                    | 2550                                                                    | 3300  | 4420  |
|                                | 1000                              | 18×30                                  | 2790                                                              | 4170  | 0.033                                    | 3390                                                                    | 4380  | 5870  |
|                                | 1100                              | 16×30                                  | 2500                                                              | 3730  | 0.038                                    | 3030                                                                    | 3910  | 5250  |
|                                | 1100                              | 18×25                                  | 2330                                                              | 3470  | 0.042                                    | 2820                                                                    | 3650  | 4890  |
|                                | 1300                              | 18×30                                  | 2760                                                              | 4120  | 0.034                                    | 3350                                                                    | 4330  | 5810  |



定格リプル電流 $I_o$ : 耐久性規格を満たす、連続印加可能なリプル電流。

Rated ripple current  $I_o$ : Ripple current continuous operation within endurance lifetime.

許容リプル電流 $I_{MAX}$ : 連続印加可能なリプル電流最大値。寿命推定時間は、寿命計算式に従う。

Maximum ripple current  $I_{MAX}$ : Maximum ripple current continuous operation. Estimated lifetime complies with our lifetime calculation formula.

## HRX series

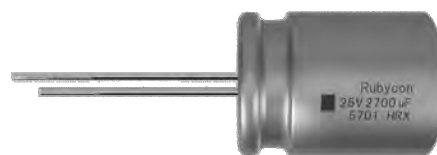
125℃ 3000時間、135℃ 2500時間品  
Load Life: 125℃ 3000 hours, 135℃ 2500 hours

・低圧インバータ等のDCリンク用に最適。  
Suitable for DC Link of low voltage inverter

AEC-Q200.



車載専用 Automotive Only



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                                                                                                   | 特性 Characteristics                                                                                                                                                                                        |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------|------|------|------|--------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                                                                                                    | -40~+135℃(150℃)                                                                                                                                                                                           |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 定格電圧範囲<br>Rated Voltage Range                                                                                                                             | 25~70Vdc                                                                                                                                                                                                  |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 静電容量許容差<br>Capacitance Tolerance                                                                                                                          | ±20%(20℃, 120Hz)                                                                                                                                                                                          |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 漏れ電流<br>Leakage Current (MAX)                                                                                                                             | I=0.03CV又は4μAのいずれか大なる値以下(定格電圧印加1分後)<br>I=0.03CV or 4μA whichever is greater. (After 1 minute)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                           |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 損失角の正接(tanδ)<br>Dissipation Factor (MAX)                                                                                                                  | (20℃, 120Hz)                                                                                                                                                                                              |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                                               | 25                                                         | 35   | 50   | 70                                                                                                                                                                     |                   |                      |      |      |      |                    |
|                                                                                                                                                           | tanδ                                                                                                                                                                                                      | 0.14                                                       | 0.12 | 0.10 | 0.10                                                                                                                                                                   |                   |                      |      |      |      |                    |
| 1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000μF. |                                                                                                                                                                                                           |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 耐久性<br>Endurance                                                                                                                                          | 125℃又は135℃において右表の時間定格電圧(定格リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at each temperature, the capacitors shall meet the following requirements. |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 静電容量変化率<br>Capacitance Change                                                                                                                                                                             | 初期値の±30%以内<br>Within ±30% of the initial value.            |      |      | <table><tr><th>温度<br/>Temperature</th><th>時間(hrs)<br/>Time(hrs)</th></tr><tr><td>125℃</td><td>3000</td></tr><tr><td>135℃</td><td>2500<br/>(70V:2000)</td></tr></table> | 温度<br>Temperature | 時間(hrs)<br>Time(hrs) | 125℃ | 3000 | 135℃ | 2500<br>(70V:2000) |
|                                                                                                                                                           | 温度<br>Temperature                                                                                                                                                                                         | 時間(hrs)<br>Time(hrs)                                       |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 125℃                                                                                                                                                                                                      | 3000                                                       |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 135℃                                                                                                                                                                                                      | 2500<br>(70V:2000)                                         |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 損失角の正接<br>Dissipation Factor                                                                                                                              | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 漏れ電流<br>Leakage Current                                                                                                                                   | 規格値以下<br>Not more than the specified value.                                                                                                                                                               |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 過温度耐性<br>Over temperature proof                                                                                                                           | 150℃において500時間定格電圧印加後、下記項目を満足すること。<br>After applying rated voltage for 500 hours at 150℃, the capacitors shall meet the following requirements.                                                            |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 静電容量変化率<br>Capacitance Change                                                                                                                                                                             | 初期値の±30%以内<br>Within ±30% of the initial value.            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 損失角の正接<br>Dissipation Factor                                                                                                                                                                              | 規格値の 300% 以下<br>Not more than 300% of the specified value. |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 漏れ電流<br>Leakage Current                                                                                                                                                                                   | 規格値以下<br>Not more than the specified value.                |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX)                                                                                  | (120Hz)                                                                                                                                                                                                   |                                                            |      |      |                                                                                                                                                                        |                   |                      |      |      |      |                    |
|                                                                                                                                                           | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                                               | 25                                                         | 35   | 50   | 70                                                                                                                                                                     |                   |                      |      |      |      |                    |
|                                                                                                                                                           | Z(-25℃)/Z(+20℃)                                                                                                                                                                                           | 2                                                          | 2    | 2    | 2                                                                                                                                                                      |                   |                      |      |      |      |                    |
|                                                                                                                                                           | Z(-40℃)/Z(+20℃)                                                                                                                                                                                           | 3                                                          | 3    | 3    | 3                                                                                                                                                                      |                   |                      |      |      |      |                    |

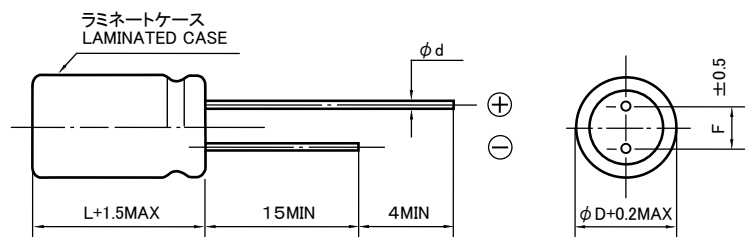
### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | HRX             | □□□□□               | M                                | SPA           | □□                      | D × L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

|                       |      |      |      |        |
|-----------------------|------|------|------|--------|
| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
| 係数 Coefficient        | 0.45 | 0.80 | 1.00 | 1.00   |

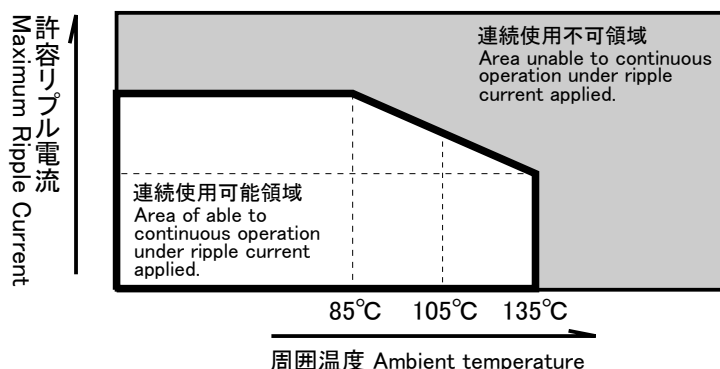
◆寸法図／DIMENSIONS



| (mm) |      |     |    |
|------|------|-----|----|
| φD   | 12.5 | 16  | 18 |
| φd   | 0.8  |     |    |
| F    | 5.0  | 7.5 |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD × L (mm) | 定格リプル電流 $I_o$<br>Rated ripple current<br>$I_o$ (mA r.m.s./100kHz) |       | ESR<br>(Ω/20°C,<br>100kHz) | 許容リプル電流 $I_{MAX}$<br>MAX ripple current<br>$I_{MAX}$ (mA r.m.s./100kHz) |       |       |
|--------------------------------|-----------------------------|-----------------------------|-------------------------------------------------------------------|-------|----------------------------|-------------------------------------------------------------------------|-------|-------|
|                                |                             |                             | 135°C                                                             | 125°C |                            | 135°C                                                                   | 125°C | 105°C |
| 25                             | 1600                        | 12.5×20                     | 1020                                                              | 1830  | 0.070                      | 1770                                                                    | 2290  | 3080  |
|                                | 2200                        | 12.5×25                     | 1980                                                              | 2660  | 0.051                      | 2260                                                                    | 2910  | 3910  |
|                                | 2700                        | 16×20                       | 1270                                                              | 2300  | 0.047                      | 2220                                                                    | 2870  | 3850  |
|                                | 3600                        | 18×20                       | 1390                                                              | 2510  | 0.044                      | 2430                                                                    | 3130  | 4210  |
|                                | 3900                        | 16×25                       | 2470                                                              | 3320  | 0.034                      | 2810                                                                    | 3630  | 4870  |
|                                | 5100                        | 18×25                       | 2690                                                              | 3620  | 0.032                      | 3060                                                                    | 3960  | 5310  |
| 35                             | 1100                        | 12.5×20                     | 1020                                                              | 1830  | 0.070                      | 1770                                                                    | 2290  | 3080  |
|                                | 1600                        | 12.5×25                     | 1980                                                              | 2660  | 0.051                      | 2260                                                                    | 2910  | 3910  |
|                                | 1800                        | 16×20                       | 1270                                                              | 2300  | 0.047                      | 2220                                                                    | 2870  | 3850  |
|                                | 2400                        | 18×20                       | 1390                                                              | 2510  | 0.044                      | 2430                                                                    | 3130  | 4210  |
|                                | 2700                        | 16×25                       | 2470                                                              | 3320  | 0.034                      | 2810                                                                    | 3630  | 4870  |
|                                | 3300                        | 18×25                       | 2690                                                              | 3620  | 0.032                      | 3060                                                                    | 3960  | 5310  |
| 50                             | 510                         | 12.5×20                     | 1040                                                              | 1880  | 0.066                      | 1820                                                                    | 2350  | 3160  |
|                                | 680                         | 12.5×25                     | 2040                                                              | 2740  | 0.048                      | 2320                                                                    | 2990  | 4020  |
|                                | 820                         | 16×20                       | 1290                                                              | 2330  | 0.045                      | 2250                                                                    | 2910  | 3910  |
|                                | 1100                        | 18×20                       | 1400                                                              | 2520  | 0.043                      | 2440                                                                    | 3160  | 4240  |
|                                | 1200                        | 16×25                       | 2500                                                              | 3360  | 0.033                      | 2850                                                                    | 3680  | 4940  |
|                                | 1600                        | 18×25                       | 2710                                                              | 3650  | 0.031                      | 3090                                                                    | 3990  | 5350  |
| 70                             | 240                         | 12.5×20                     | 880                                                               | 1360  | 0.084                      | 1540                                                                    | 1990  | 2680  |
|                                | 360                         | 12.5×25                     | 1730                                                              | 2100  | 0.061                      | 1960                                                                    | 2540  | 3410  |
|                                | 430                         | 16×20                       | 1170                                                              | 1800  | 0.056                      | 2050                                                                    | 2650  | 3550  |
|                                | 560                         | 18×20                       | 1280                                                              | 1970  | 0.052                      | 2240                                                                    | 2890  | 3880  |
|                                | 620                         | 16×25                       | 2280                                                              | 2770  | 0.041                      | 2590                                                                    | 3350  | 4490  |
|                                | 820                         | 18×25                       | 2490                                                              | 3030  | 0.038                      | 2830                                                                    | 3660  | 4910  |



定格リプル電流 $I_o$ : 耐久性規格を満たす、連続印加可能なリプル電流。

Rated ripple current  $I_o$ : Ripple current continuous operation within endurance lifetime.

許容リプル電流 $I_{MAX}$ : 連続印加可能なリプル電流最大値。寿命推定時間は、寿命計算式に従う。

Maximum ripple current  $I_{MAX}$ : Maximum ripple current continuous operation. Estimated lifetime complies with our lifetime calculation formula.

## JXF series

105℃ 6000～8000時間品 低インピーダンス品 広温度範囲品  
105℃ 6000～8000 hours. Low Impedance, Wide Temperature Range

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                 |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|--------------|------|-------------------------|---------------------------------------------|---------|------|------|------|------|------|------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -55～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                 |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 16～100Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                 |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                 |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下 (定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                 |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>(20℃, 120Hz)</td></tr><tr><td>tan δ</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.09</td><td>0.08</td><td></td></tr></table> <p>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br/>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.</p>                                                                                                                                                                                              | 定格電圧 (Vdc)<br>Rated Voltage   | 16                                              | 25                  | 35                   | 50                           | 63                                                         | 80           | 100  | (20℃, 120Hz)            | tan δ                                       | 0.16    | 0.14 | 0.12 | 0.10 | 0.09 | 0.09 | 0.08 |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25                            | 35                                              | 50                  | 63                   | 80                           | 100                                                        | (20℃, 120Hz) |      |                         |                                             |         |      |      |      |      |      |      |  |
| tan δ                                                                    | 0.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.14                          | 0.12                                            | 0.10                | 0.09                 | 0.09                         | 0.08                                                       |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 耐久性<br>Endurance                                                         | <p>105℃中で右表の時間定格電圧 (リップル重畳) 印加後、下記項目を満足すること。<br/>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±30%以内<br/>Within ±30% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td><td>φD≤10</td><td>6000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>φD≥12.5</td><td>8000</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±30%以内<br>Within ±30% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | φD≤10        | 6000 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | φD≥12.5 | 8000 |      |      |      |      |      |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30%以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ケースサイズ<br>Case Size           | 時間(hrs)<br>Time(hrs)                            |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | φD≤10                         | 6000                                            |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | φD≥12.5                       | 8000                                            |                     |                      |                              |                                                            |              |      |                         |                                             |         |      |      |      |      |      |      |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>(120Hz)</td></tr><tr><td>Z(-55℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td></td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                 | 定格電圧 (Vdc)<br>Rated Voltage   | 16                                              | 25                  | 35                   | 50                           | 63                                                         | 80           | 100  | (120Hz)                 | Z(-55℃)/Z(+20℃)                             | 3       | 3    | 3    | 3    | 3    | 3    | 3    |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25                            | 35                                              | 50                  | 63                   | 80                           | 100                                                        | (120Hz)      |      |                         |                                             |         |      |      |      |      |      |      |  |
| Z(-55℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3                             | 3                                               | 3                   | 3                    | 3                            | 3                                                          |              |      |                         |                                             |         |      |      |      |      |      |      |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | JXF             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

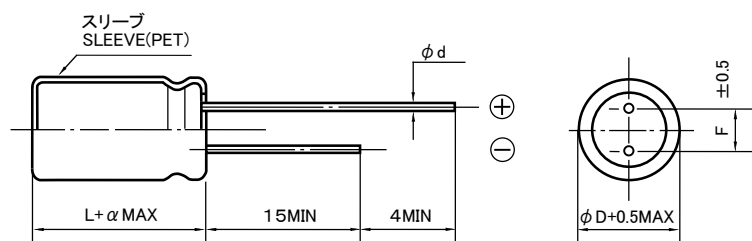
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency |               | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|---------------|------|------|------|-------|
| 係数<br>Coefficient     | 68~270 μF     | 0.50 | 0.73 | 0.92 | 1.00  |
|                       | 300~680 μF    | 0.55 | 0.77 | 0.94 | 1.00  |
|                       | 820~1800 μF   | 0.60 | 0.80 | 0.96 | 1.00  |
|                       | 2200~10000 μF | 0.70 | 0.85 | 0.98 | 1.00  |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



(mm)

| $\phi$ D | 10  | 12.5 | 16  | 18 |
|----------|-----|------|-----|----|
| $\phi$ d | 0.6 |      | 0.8 |    |
| F        | 5.0 |      | 7.5 |    |
| $\alpha$ | 2.0 |      |     |    |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz), Impedance (Ω MAX/100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法 Size<br>φ D x L (mm) | 定格リプル<br>電流<br>Rated Ripple | インピーダンス<br>(Ω MAX)<br>Impedance |       |
|--------------------------------|-----------------------------|---------------------------|-----------------------------|---------------------------------|-------|
|                                |                             |                           |                             | 20°C                            | -10°C |
| 16                             | 1000                        | 10×16                     | 1180                        | 0.061                           | 0.122 |
|                                | 1500                        | 10×20                     | 1490                        | 0.045                           | 0.090 |
|                                | 1800                        | 10×25                     | 1710                        | 0.037                           | 0.074 |
|                                | 2200                        | 12.5×20                   | 1780                        | 0.038                           | 0.076 |
|                                | 3300                        | 12.5×25                   | 2170                        | 0.030                           | 0.060 |
|                                | 3900                        | 12.5×30                   | 2540                        | 0.025                           | 0.050 |
|                                | 3900                        | 16×20                     | 2210                        | 0.028                           | 0.056 |
|                                | 5600                        | 16×25                     | 2620                        | 0.022                           | 0.044 |
|                                | 5600                        | 18×20                     | 2490                        | 0.028                           | 0.056 |
|                                | 6800                        | 16×30                     | 3060                        | 0.019                           | 0.038 |
|                                | 8200                        | 18×25                     | 2790                        | 0.020                           | 0.040 |
|                                | 10000                       | 18×30                     | 3240                        | 0.018                           | 0.036 |
| 25                             | 680                         | 10×16                     | 1180                        | 0.061                           | 0.122 |
|                                | 1000                        | 10×20                     | 1490                        | 0.045                           | 0.090 |
|                                | 1200                        | 10×25                     | 1710                        | 0.037                           | 0.074 |
|                                | 1500                        | 12.5×20                   | 1780                        | 0.038                           | 0.076 |
|                                | 2200                        | 12.5×25                   | 2170                        | 0.030                           | 0.060 |
|                                | 2700                        | 12.5×30                   | 2540                        | 0.025                           | 0.050 |
|                                | 2700                        | 16×20                     | 2210                        | 0.028                           | 0.056 |
|                                | 3300                        | 18×20                     | 2490                        | 0.028                           | 0.056 |
|                                | 3900                        | 16×25                     | 2620                        | 0.022                           | 0.044 |
|                                | 4700                        | 16×30                     | 3060                        | 0.019                           | 0.038 |
|                                | 4700                        | 18×25                     | 2790                        | 0.020                           | 0.040 |
|                                | 5600                        | 18×30                     | 3240                        | 0.018                           | 0.036 |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法 Size<br>φ D x L (mm) | 定格リプル<br>電流<br>Rated Ripple | インピーダンス<br>(Ω MAX)<br>Impedance |       |
|--------------------------------|-----------------------------|---------------------------|-----------------------------|---------------------------------|-------|
|                                |                             |                           |                             | 20°C                            | -10°C |
| 35                             | 470                         | 10×16                     | 1180                        | 0.061                           | 0.122 |
|                                | 680                         | 10×20                     | 1490                        | 0.045                           | 0.090 |
|                                | 820                         | 10×25                     | 1710                        | 0.037                           | 0.074 |
|                                | 1000                        | 12.5×20                   | 1780                        | 0.038                           | 0.076 |
|                                | 1200                        | 12.5×25                   | 2170                        | 0.030                           | 0.060 |
|                                | 1800                        | 12.5×30                   | 2540                        | 0.025                           | 0.050 |
|                                | 1800                        | 16×20                     | 2210                        | 0.028                           | 0.056 |
|                                | 2200                        | 16×25                     | 2620                        | 0.022                           | 0.044 |
|                                | 2200                        | 18×20                     | 2490                        | 0.028                           | 0.056 |
|                                | 3300                        | 16×30                     | 3060                        | 0.019                           | 0.038 |
|                                | 3300                        | 18×25                     | 2790                        | 0.020                           | 0.040 |
|                                | 3900                        | 18×30                     | 3240                        | 0.018                           | 0.036 |
| 50                             | 180                         | 10×16                     | 850                         | 0.100                           | 0.200 |
|                                | 270                         | 10×20                     | 1050                        | 0.075                           | 0.150 |
|                                | 330                         | 10×25                     | 1250                        | 0.057                           | 0.114 |
|                                | 390                         | 12.5×20                   | 1480                        | 0.059                           | 0.118 |
|                                | 560                         | 12.5×25                   | 1840                        | 0.044                           | 0.088 |
|                                | 680                         | 12.5×30                   | 2220                        | 0.036                           | 0.072 |
|                                | 820                         | 16×20                     | 1840                        | 0.044                           | 0.088 |
|                                | 1200                        | 16×25                     | 2240                        | 0.032                           | 0.064 |
|                                | 1200                        | 18×20                     | 2150                        | 0.041                           | 0.082 |
|                                | 1500                        | 16×30                     | 2700                        | 0.026                           | 0.052 |
|                                | 1500                        | 18×25                     | 2610                        | 0.029                           | 0.058 |
|                                | 2200                        | 18×30                     | 3000                        | 0.024                           | 0.048 |



### ◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz), Impedance (Ω MAX/100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法 Size<br>φDxL (mm) | 定格リプル<br>電流<br>Rated Ripple | インピーダンス<br>(Ω MAX)<br>Impedance |       |
|--------------------------------|-----------------------------|------------------------|-----------------------------|---------------------------------|-------|
|                                |                             |                        |                             | 20°C                            | -10°C |
| 63                             | 120                         | 10×16                  | 600                         | 0.160                           | 0.32  |
|                                | 180                         | 10×20                  | 890                         | 0.120                           | 0.24  |
|                                | 220                         | 10×25                  | 1050                        | 0.090                           | 0.18  |
|                                | 330                         | 12.5×20                | 1290                        | 0.085                           | 0.17  |
|                                | 390                         | 12.5×25                | 1720                        | 0.066                           | 0.132 |
|                                | 470                         | 12.5×30                | 2090                        | 0.052                           | 0.104 |
|                                | 560                         | 16×20                  | 1770                        | 0.059                           | 0.118 |
|                                | 820                         | 16×25                  | 2160                        | 0.047                           | 0.094 |
|                                | 820                         | 18×20                  | 2290                        | 0.055                           | 0.110 |
|                                | 1000                        | 16×30                  | 2670                        | 0.037                           | 0.074 |
|                                | 1000                        | 18×25                  | 2590                        | 0.040                           | 0.080 |
|                                | 1500                        | 18×30                  | 2950                        | 0.032                           | 0.064 |
| 80                             | 100                         | 10×16                  | 550                         | 0.330                           | 0.81  |
|                                | 150                         | 10×20                  | 780                         | 0.240                           | 0.59  |
|                                | 180                         | 10×25                  | 970                         | 0.190                           | 0.47  |
|                                | 180                         | 12.5×20                | 1120                        | 0.165                           | 0.39  |
|                                | 270                         | 12.5×25                | 1420                        | 0.120                           | 0.28  |
|                                | 390                         | 12.5×30                | 1690                        | 0.097                           | 0.23  |
|                                | 390                         | 16×20                  | 1560                        | 0.110                           | 0.26  |
|                                | 470                         | 18×20                  | 1660                        | 0.090                           | 0.19  |
|                                | 560                         | 16×25                  | 1980                        | 0.081                           | 0.19  |
|                                | 680                         | 16×30                  | 2350                        | 0.064                           | 0.15  |
|                                | 680                         | 18×25                  | 2100                        | 0.070                           | 0.15  |
|                                | 820                         | 18×30                  | 2490                        | 0.058                           | 0.13  |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法 Size<br>φDxL (mm) | 定格リプル<br>電流<br>Rated Ripple | インピーダンス<br>(Ω MAX)<br>Impedance |       |
|--------------------------------|-----------------------------|------------------------|-----------------------------|---------------------------------|-------|
|                                |                             |                        |                             | 20°C                            | -10°C |
| 100                            | 68                          | 10×16                  | 550                         | 0.330                           | 0.81  |
|                                | 100                         | 10×20                  | 780                         | 0.240                           | 0.59  |
|                                | 120                         | 10×25                  | 970                         | 0.190                           | 0.47  |
|                                | 120                         | 12.5×20                | 1120                        | 0.165                           | 0.39  |
|                                | 180                         | 12.5×25                | 1420                        | 0.120                           | 0.28  |
|                                | 220                         | 12.5×30                | 1690                        | 0.097                           | 0.23  |
|                                | 270                         | 16×20                  | 1560                        | 0.110                           | 0.26  |
|                                | 330                         | 16×25                  | 1980                        | 0.081                           | 0.19  |
|                                | 330                         | 18×20                  | 1660                        | 0.090                           | 0.19  |
|                                | 470                         | 16×30                  | 2350                        | 0.064                           | 0.15  |
|                                | 470                         | 18×25                  | 2100                        | 0.070                           | 0.15  |
|                                | 560                         | 18×30                  | 2490                        | 0.058                           | 0.13  |

## LEX series

125°C 3000~5000時間品  
Load Life: 125°C 3000~5000 hours

・LED照明用電源回路に最適。  
For LED Lighting.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                    |                                                            |                                                                                                           |      |                                                                                                  |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40~+125°C                                                                                                                                                                            |                                                            |                                                                                                           |      |                                                                                                  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160~450Vdc                                                                                                                                                                            |                                                            |                                                                                                           |      |                                                                                                  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20°C, 120Hz)                                                                                                                                                                     |                                                            |                                                                                                           |      |                                                                                                  |
| 漏れ電流<br>Leakage Current (MAX)                                            | CV ≤ 1000                                                                                                                                                                             |                                                            | CV > 1000                                                                                                 |      | I = 漏れ電流(μA)<br>Leakage Current<br>C = 静電容量(μF)<br>Capacitance<br>V = 定格電圧(Vdc)<br>Rated Voltage |
|                                                                          | I=0.1CV+40 μA以下(1分値)<br>I=0.1CV+40 μA (1minute)<br>I=0.03CV+15 μA以下(5分値)<br>I=0.03CV+15 μA (5minutes)                                                                                 |                                                            | I=0.04CV+100 μA以下(1分値)<br>I=0.04CV+100 μA (1minute)<br>I=0.02CV+25 μA以下(5分値)<br>I=0.02CV+25 μA (5minutes) |      |                                                                                                  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                           | 160                                                        | 200                                                                                                       | 250  | 400 450 (20°C, 120Hz)                                                                            |
|                                                                          | tan δ                                                                                                                                                                                 | 0.24                                                       | 0.24                                                                                                      | 0.24 | 0.24                                                                                             |
| 耐久性<br>Endurance                                                         | 125°C中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 125°C, the capacitors shall meet the following requirements. |                                                            |                                                                                                           |      |                                                                                                  |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                         | 初期値の±30%以内<br>Within ±30% of the initial value.            |                                                                                                           |      | ケースサイズ<br>Case Size                                                                              |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                          | 規格値の 300% 以下<br>Not more than 300% of the specified value. |                                                                                                           |      | Time(hrs)                                                                                        |
|                                                                          | 漏れ電流<br>Leakage Current                                                                                                                                                               | 規格値以下<br>Not more than the specified value.                |                                                                                                           |      | 160~400Vdc 450Vdc                                                                                |
|                                                                          |                                                                                                                                                                                       |                                                            |                                                                                                           |      | 6.3x11, 8x9, 10x9 4000 3000                                                                      |
|                                                                          |                                                                                                                                                                                       |                                                            |                                                                                                           |      | 8x11.5 5000 3000                                                                                 |
|                                                                          |                                                                                                                                                                                       |                                                            |                                                                                                           |      | 10x12.5, 10x16, 10x20 5000 5000                                                                  |
|                                                                          |                                                                                                                                                                                       |                                                            |                                                                                                           |      | φD ≥ 12.5                                                                                        |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                           | 160                                                        | 200                                                                                                       | 250  | 400 450 (120Hz)                                                                                  |
|                                                                          | Z(-25°C)/Z(+20°C)                                                                                                                                                                     | 3                                                          | 3                                                                                                         | 6    | 6 6                                                                                              |
|                                                                          | Z(-40°C)/Z(+20°C)                                                                                                                                                                     | 8                                                          | 8                                                                                                         | 10   | 12 12                                                                                            |

### ◆呼称方法／PART NUMBER

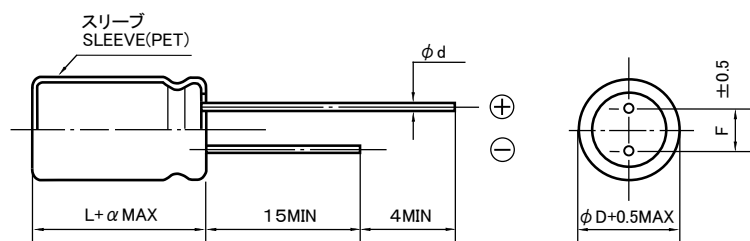
|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | LEX             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| Frequency (Hz)    | 120 | 1k  | 10k | 100k ≤ |
|-------------------|-----|-----|-----|--------|
| 係数<br>Coefficient |     |     |     |        |
| 1~5.6 μF          | 1.0 | 1.6 | 1.8 | 2.0    |
| 6.8~18 μF         | 1.0 | 1.5 | 1.7 | 1.9    |
| 22~56 μF          | 1.0 | 1.4 | 1.6 | 1.8    |

### ◆副記号／OPTION EFC : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



|          |     |     |     |      |     |    |
|----------|-----|-----|-----|------|-----|----|
| (mm)     |     |     |     |      |     |    |
| $\phi$ D | 6.3 | 8   | 10  | 12.5 | 16  | 18 |
| $\phi$ d | 0.5 | 0.6 |     |      | 0.8 |    |
| F        | 2.5 | 3.5 | 5.0 |      | 7.5 |    |
| $\alpha$ | 2.0 |     |     |      |     |    |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current ( mA r.m.s./125°C)

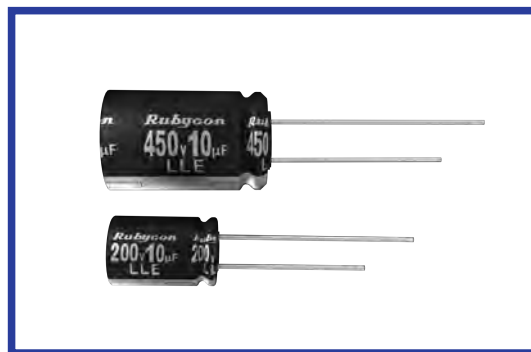
| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size<br>φ D×L (mm) | 定格リプル電流<br>Rated Ripple |        |
|--------------------------------|------------------------------|----------------------------|-------------------------|--------|
|                                |                              |                            | 120Hz                   | 100kHz |
| 160                            | 5.6                          | 6.3×11                     | 52                      | 104    |
|                                | 10                           | 8×9                        | 70                      | 133    |
|                                | 15                           | 8×11.5                     | 92                      | 174    |
|                                |                              | 10×9                       | 95                      | 180    |
|                                | 22                           | 10×12.5                    | 121                     | 217    |
|                                | 33                           | 10×16                      | 158                     | 284    |
| 200                            | 2.2                          | 6.3×11                     | 36                      | 72     |
|                                | 3.3                          | 6.3×11                     | 42                      | 84     |
|                                | 4.7                          | 6.3×11                     | 49                      | 98     |
|                                | 5.6                          | 8×9                        | 56                      | 112    |
|                                | 6.8                          | 8×9                        | 62                      | 117    |
|                                | 8.2                          | 8×9                        | 66                      | 125    |
|                                | 10                           | 8×11.5                     | 80                      | 152    |
|                                | 12                           | 10×9                       | 88                      | 167    |
|                                | 18                           | 10×12.5                    | 113                     | 214    |
|                                | 27                           | 10×16                      | 149                     | 268    |
| 250                            | 1.8                          | 6.3×11                     | 33                      | 66     |
|                                | 2.2                          | 6.3×11                     | 36                      | 72     |
|                                | 3.3                          | 6.3×11                     | 42                      | 84     |
|                                | 4.7                          | 8×9                        | 53                      | 106    |
|                                | 5.6                          | 8×11.5                     | 56                      | 112    |
|                                | 6.8                          | 8×11.5                     | 68                      | 129    |
|                                | 8.2                          | 10×9                       | 76                      | 144    |
|                                | 10                           | 10×12.5                    | 83                      | 157    |
|                                | 12                           | 10×12.5                    | 97                      | 184    |
|                                | 18                           | 10×16                      | 127                     | 241    |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size<br>φ D×L (mm) | 定格リプル電流<br>Rated Ripple |        |
|--------------------------------|------------------------------|----------------------------|-------------------------|--------|
|                                |                              |                            | 120Hz                   | 100kHz |
| 400                            | 1                            | 6.3×11                     | 24                      | 48     |
|                                | 1.2                          | 8×9                        | 28                      | 56     |
|                                | 1.5                          | 8×9                        | 30                      | 60     |
|                                | 1.8                          | 8×9                        | 33                      | 66     |
|                                | 2.2                          | 8×9                        | 36                      | 72     |
|                                |                              | 8×11.5                     | 40                      | 80     |
|                                | 2.7                          | 8×11.5                     | 43                      | 86     |
|                                | 3.3                          | 8×11.5                     | 47                      | 94     |
|                                |                              | 10×9                       | 48                      | 96     |
|                                | 3.9                          | 10×12.5                    | 57                      | 114    |
| 450                            | 4.7                          | 10×12.5                    | 61                      | 122    |
|                                | 6.8                          | 10×16                      | 85                      | 161    |
|                                | 1                            | 6.3×11                     | 24                      | 48     |
|                                | 1.5                          | 8×9                        | 30                      | 60     |
|                                | 1.8                          | 8×11.5                     | 38                      | 76     |
|                                | 2.2                          | 10×9                       | 40                      | 80     |
|                                | 2.7                          | 10×9                       | 42                      | 84     |
|                                | 3.3                          | 10×12.5                    | 52                      | 104    |
|                                | 4.7                          | 10×16                      | 68                      | 136    |
|                                | 6.8                          | 10×20                      | 88                      | 167    |
|                                | 10                           | 12.5×20                    | 110                     | 209    |
|                                | 15                           | 12.5×25                    | 150                     | 285    |
|                                | 18                           | 12.5×25                    | 160                     | 304    |
|                                | 22                           | 16×20                      | 210                     | 378    |
|                                | 27                           | 16×25                      | 250                     | 450    |
|                                | 33                           | 16×25                      | 280                     | 504    |
|                                |                              | 18×20                      | 270                     | 486    |
|                                | 39                           | 16×31.5                    | 330                     | 561    |
|                                | 47                           | 18×25                      | 350                     | 630    |
|                                | 56                           | 18×31.5                    | 410                     | 738    |

## LLE series

105°C 12000~20000時間品  
Load Life: 105°C 12000~20000 hours

・LED照明用電源回路に最適。  
For LED Lighting.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                  |                                                            |                                                                                                                               |           |                                                                                                     |                     |                      |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------|---------------------|----------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                           |                                                            |                                                                                                                               | -25～+105℃ |                                                                                                     |                     |                      |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160～400Vdc                                                                                                                                                                          |                                                            |                                                                                                                               | 450Vdc    |                                                                                                     |                     |                      |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                   |                                                            |                                                                                                                               |           |                                                                                                     |                     |                      |
| 漏れ電流<br>Leakage Current (MAX)                                            | CV ≤ 1000                                                                                                                                                                           |                                                            | CV > 1000                                                                                                                     |           | I = 漏れ電流 (μA)<br>Leakage Current<br>C = 静電容量 (μF)<br>Capacitance<br>V = 定格電圧 (Vdc)<br>Rated Voltage |                     |                      |
|                                                                          | I = 0.1CV + 40 μA 以下 (1分値)<br>I = 0.1CV + 40 μA (1minute)<br>I = 0.03CV + 15 μA 以下 (5分値)<br>I = 0.03CV + 15 μA (5minutes)                                                           |                                                            | I = 0.04CV + 100 μA 以下 (1分値)<br>I = 0.04CV + 100 μA (1minute)<br>I = 0.02CV + 25 μA 以下 (5分値)<br>I = 0.02CV + 25 μA (5minutes) |           |                                                                                                     |                     |                      |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                         | 160                                                        | 200                                                                                                                           | 250       | 400                                                                                                 | 450                 | (20℃, 120Hz)         |
|                                                                          | tan δ                                                                                                                                                                               | 0.24                                                       | 0.24                                                                                                                          | 0.24      | 0.24                                                                                                | 0.24                |                      |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. |                                                            |                                                                                                                               |           |                                                                                                     |                     |                      |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                       | 初期値の±30%以内<br>Within ±30% of the initial value.            |                                                                                                                               |           |                                                                                                     | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                        | 規格値の 300% 以下<br>Not more than 300% of the specified value. |                                                                                                                               |           |                                                                                                     | 6.3x11, 8x9, 10x9   | 12000                |
|                                                                          | 漏れ電流<br>Leakage Current                                                                                                                                                             | 規格値以下<br>Not more than the specified value.                |                                                                                                                               |           |                                                                                                     | 8x11.5, 10x12.5     | 15000                |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                         | 160                                                        | 200                                                                                                                           | 250       | 400                                                                                                 | 450                 | (120Hz)              |
|                                                                          | Z(-25℃)/Z(+20℃)                                                                                                                                                                     | 3                                                          | 3                                                                                                                             | 3         | 6                                                                                                   | 6                   |                      |
|                                                                          | Z(-40℃)/Z(+20℃)                                                                                                                                                                     | 8                                                          | 8                                                                                                                             | 8         | 10                                                                                                  | -                   |                      |
|                                                                          |                                                                                                                                                                                     |                                                            |                                                                                                                               |           |                                                                                                     |                     |                      |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | LLE             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆副記号／OPTION

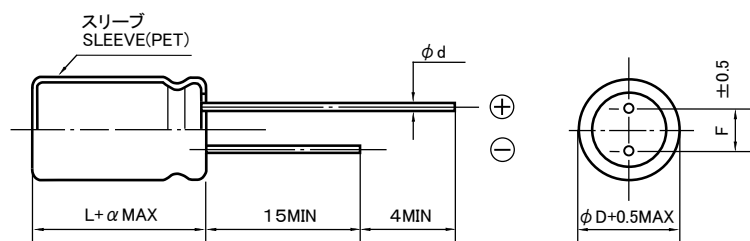
EFC: PETスリーブ PET Sleeve

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

| 160~400Vdc        |           |     |     |        |     |
|-------------------|-----------|-----|-----|--------|-----|
| Frequency (Hz)    | 120       | 1k  | 10k | 100k ≤ |     |
| 係数<br>Coefficient | 1~5.6 μF  | 1.0 | 1.6 | 1.8    | 2.0 |
|                   | 6.8~18 μF | 1.0 | 1.5 | 1.7    | 1.9 |
|                   | 22~33 μF  | 1.0 | 1.4 | 1.6    | 1.8 |

| 450Vdc            |           |     |     |        |     |
|-------------------|-----------|-----|-----|--------|-----|
| Frequency (Hz)    | 120       | 1k  | 10k | 100k ≤ |     |
| 係数<br>Coefficient | 4.7~15 μF | 0.3 | 0.6 | 0.9    | 1.0 |
|                   | 22~68 μF  | 0.4 | 0.7 | 0.9    | 1.0 |

◆寸法図／DIMENSIONS



|          |      |     |     |      |     |    |
|----------|------|-----|-----|------|-----|----|
|          | (mm) |     |     |      |     |    |
| $\phi D$ | 6.3  | 8   | 10  | 12.5 | 16  | 18 |
| $\phi d$ | 0.5  | 0.6 |     |      | 0.8 |    |
| F        | 2.5  | 3.5 | 5.0 |      | 7.5 |    |
| $\alpha$ | 2.0  |     |     |      |     |    |

◆標準品一覧表／STANDARD SIZE

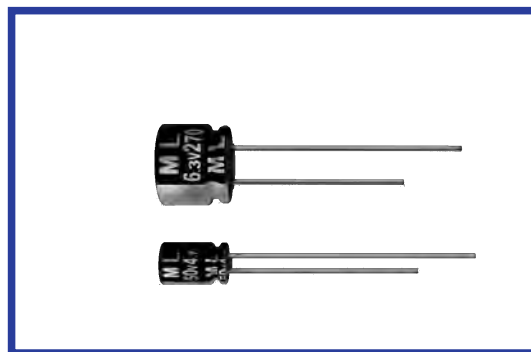
| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル電流<br>Rated Ripple |        |
|--------------------------------|-----------------------------|---------------------------|-------------------------|--------|
|                                |                             |                           | 120Hz                   | 100kHz |
| 160                            | 5.6                         | 6.3×11                    | 52                      | 104    |
|                                | 10                          | 8×9                       | 70                      | 133    |
|                                | 15                          | 8×11.5                    | 92                      | 174    |
|                                |                             | 10×9                      | 95                      | 180    |
|                                | 22                          | 10×12.5                   | 121                     | 217    |
|                                | 33                          | 10×16                     | 158                     | 284    |
| 200                            | 2.2                         | 6.3×11                    | 36                      | 72     |
|                                | 3.3                         | 6.3×11                    | 42                      | 84     |
|                                | 4.7                         | 6.3×11                    | 49                      | 98     |
|                                | 5.6                         | 8×9                       | 56                      | 112    |
|                                | 6.8                         | 8×9                       | 62                      | 117    |
|                                | 8.2                         | 8×9                       | 66                      | 125    |
|                                | 10                          | 8×11.5                    | 80                      | 152    |
|                                | 12                          | 10×9                      | 88                      | 167    |
|                                | 18                          | 10×12.5                   | 113                     | 214    |
|                                | 27                          | 10×16                     | 149                     | 268    |
| 250                            | 1.8                         | 6.3×11                    | 33                      | 66     |
|                                | 2.2                         | 6.3×11                    | 36                      | 72     |
|                                | 3.3                         | 6.3×11                    | 42                      | 84     |
|                                | 4.7                         | 8×9                       | 53                      | 106    |
|                                | 5.6                         | 8×11.5                    | 62                      | 124    |
|                                | 6.8                         | 8×11.5                    | 68                      | 129    |
|                                | 8.2                         | 10×9                      | 76                      | 144    |
|                                | 10                          | 10×12.5                   | 90                      | 171    |
|                                | 12                          | 10×12.5                   | 97                      | 184    |
|                                | 18                          | 10×16                     | 127                     | 241    |

Rated Ripple Current (mA r.m.s./105°C)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル電流<br>Rated Ripple |        |
|--------------------------------|-----------------------------|---------------------------|-------------------------|--------|
|                                |                             |                           | 120Hz                   | 100kHz |
| 400                            | 1                           | 6.3×11                    | 24                      | 48     |
|                                | 1.2                         | 8×9                       | 28                      | 56     |
|                                | 1.5                         | 8×9                       | 30                      | 60     |
|                                | 1.8                         | 8×9                       | 33                      | 66     |
|                                | 2.2                         | 8×9                       | 36                      | 72     |
|                                |                             | 8×11.5                    | 40                      | 80     |
|                                | 2.7                         | 8×11.5                    | 43                      | 86     |
|                                | 3.3                         | 8×11.5                    | 47                      | 94     |
|                                |                             | 10×9                      | 48                      | 96     |
|                                | 3.9                         | 10×12.5                   | 57                      | 114    |
| 450                            | 4.7                         | 10×12.5                   | 61                      | 122    |
|                                | 6.8                         | 10×16                     | 85                      | 161    |
|                                | 4.7                         | 10×16                     | 54                      | 180    |
|                                |                             | 10×20                     | 66                      | 220    |
|                                | 6.8                         | 10×20                     | 84                      | 280    |
|                                | 8.2                         | 10×20                     | 84                      | 280    |
|                                | 10                          | 12.5×20                   | 135                     | 450    |
|                                | 15                          | 12.5×25                   | 180                     | 600    |
|                                | 22                          | 12.5×25                   | 240                     | 600    |
|                                |                             | 16×20                     | 292                     | 730    |
| 450                            | 33                          | 16×25                     | 392                     | 980    |
|                                |                             | 18×20                     | 312                     | 780    |
|                                | 47                          | 18×25                     | 480                     | 1200   |
|                                | 68                          | 18×31.5                   | 520                     | 1300   |

## ML series

105°C 3000~5000時間品 高さ5mm~9mm  
105°C 3000~5000hours. 5mm~9mm Height



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                 |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|-------|-----------------|-------------------------|---------------------------------------------|-------|------|------|------|-----------------|----|----|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                 |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3～50Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                 |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                 |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                 |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>tan δ</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.20</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                               | 定格電圧(Vdc)<br>Rated Voltage    | 6.3                                             | 10                  | 16                   | 25                           | 35                                                         | 50    | tan δ           | 0.40                    | 0.35                                        | 0.30  | 0.25 | 0.20 | 0.20 |                 |    |    |   |   |   |   |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                            | 16                                              | 25                  | 35                   | 50                           |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| tan δ                                                                    | 0.40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.35                          | 0.30                                            | 0.25                | 0.20                 | 0.20                         |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±30%以内<br/>Within ±30% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td><td>L=5mm</td><td>3000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>L≥7mm</td><td>5000</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±30%以内<br>Within ±30% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | L=5mm | 3000            | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | L≥7mm | 5000 |      |      |                 |    |    |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30%以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ケースサイズ<br>Case Size           | 時間(hrs)<br>Time(hrs)                            |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | L=5mm                         | 3000                                            |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | L≥7mm                         | 5000                                            |                     |                      |                              |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>6</td><td>4</td><td>4</td><td>3</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>12</td><td>10</td><td>8</td><td>6</td><td>4</td><td>4</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                             | 定格電圧(Vdc)<br>Rated Voltage    | 6.3                                             | 10                  | 16                   | 25                           | 35                                                         | 50    | Z(-25℃)/Z(+20℃) | 6                       | 4                                           | 4     | 3    | 2    | 2    | Z(-40℃)/Z(+20℃) | 12 | 10 | 8 | 6 | 4 | 4 |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                            | 16                                              | 25                  | 35                   | 50                           |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4                             | 4                                               | 3                   | 2                    | 2                            |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10                            | 8                                               | 6                   | 4                    | 4                            |                                                            |       |                 |                         |                                             |       |      |      |      |                 |    |    |   |   |   |   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | ML              | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

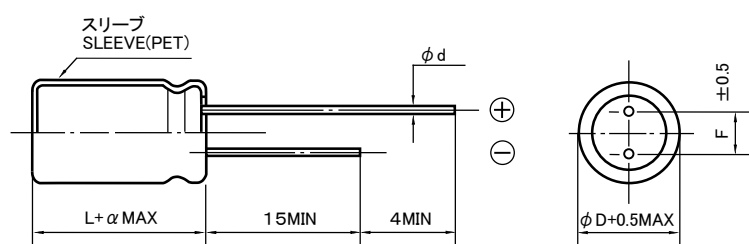
| 周波数 (Hz)<br>Frequency |             | 60(50) | 120  | 500  | 1k   | 10k≤ |
|-----------------------|-------------|--------|------|------|------|------|
| 係数<br>Coefficient     | 1 μF        | 0.50   | 1.00 | 1.20 | 1.30 | 1.50 |
|                       | 2.2~6.8 μF  | 0.65   | 1.00 | 1.20 | 1.30 | 1.50 |
|                       | 10~82 μF    | 0.80   | 1.00 | 1.20 | 1.30 | 1.50 |
|                       | 100~1000 μF | 0.80   | 1.00 | 1.10 | 1.15 | 1.20 |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve



◆寸法図／DIMENSIONS



| φ D | 4                       | 5   | 6.3                            | 8x5 | 8x7 | 8x7.5 | 8x9 | 10  |
|-----|-------------------------|-----|--------------------------------|-----|-----|-------|-----|-----|
| φ d | 0.45                    |     |                                |     |     |       |     | 0.6 |
| F   | 1.5                     | 2.0 | 2.5                            | 3.5 |     | 5.0   |     |     |
| α   | 35~100Vdc<br>160~450Vdc |     | L=7 : α = 1.0<br>L=5 : α = 1.5 |     | 1.5 | 1.0   | 2.0 |     |

◆標準品一覧表／STANDARD SIZE

Size φ D × L (mm), Rated Ripple Current (mA r.m.s./105°C, 120Hz)

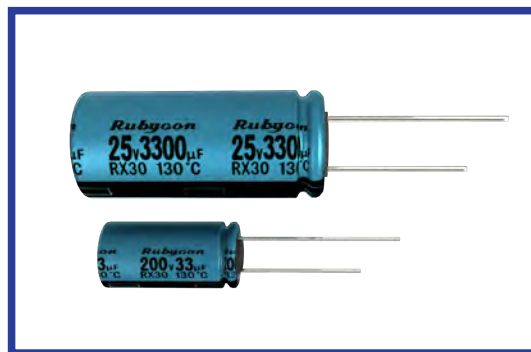
| 定格電圧<br>(Vdc)<br>静電容量<br>(μF) | 6.3   |        | 10    |        | 16    |        | 25    |        | 35    |        | 50    |        |
|-------------------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
|                               | Size  | Ripple | Size  | Ripple | Size  | Ripple | Size  | Ripple | Size  | Ripple | Size  | Ripple |
| 1                             |       |        |       |        |       |        |       |        |       |        | 4×5   | 8      |
| 2.2                           |       |        |       |        |       |        |       |        |       |        | 4×5   | 11     |
| 3.3                           |       |        |       |        |       |        |       |        |       |        | 4×5   | 14     |
| 4.7                           |       |        |       |        |       |        |       |        |       |        | 4×7   | 23     |
| 6.8                           |       |        |       |        |       |        |       |        | 4×5   | 17     | 5×5   | 25     |
| 10                            |       |        |       |        |       |        | 4×5   | 18     | 4×7   | 28     | 5×7   | 30     |
| 12                            |       |        |       |        |       |        |       |        | 5×5   | 34     | 6.3×5 | 37     |
| 15                            |       |        |       |        |       |        | 4×7   | 35     |       |        |       |        |
| 18                            |       |        |       |        | 4×5   | 20     |       |        | 5×7   | 48     | 6.3×7 | 50     |
| 22                            |       |        | 4×5   | 22     | 4×7   | 40     | 5×5   | 42     |       |        | 8×5   | 62     |
| 27                            | 4×5   | 25     |       |        |       |        | 5×7   | 57     | 6.3×5 | 58     | 6.3×7 | 62     |
| 33                            |       |        | 4×7   | 43     | 5×5   | 45     |       |        |       |        | 8×7   | 75     |
| 39                            |       |        |       |        | 5×7   | 65     |       |        | 6.3×7 | 76     |       |        |
| 47                            | 4×7   | 47     | 5×5   | 48     |       |        | 6.3×5 | 65     | 8×5   | 80     |       |        |
| 56                            | 5×5   | 50     | 5×7   | 68     |       |        | 6.3×7 | 85     | 8×7   | 105    | 8×7.5 | 115    |
| 68                            |       |        |       |        | 6.3×5 | 70     |       |        |       |        |       |        |
| 82                            | 5×7   | 75     |       |        |       |        | 8×5   | 100    |       |        | 8×9   | 160    |
| 100                           |       |        | 6.3×5 | 75     | 6.3×7 | 95     | 8×7   | 112    | 8×7.5 | 125    |       |        |
| 120                           | 6.3×5 | 80     | 6.3×7 | 100    | 8×5   | 110    |       |        |       |        | 10×9  | 315    |
| 150                           |       |        |       |        | 8×7   | 125    | 8×7.5 | 140    | 8×9   | 180    |       |        |
| 180                           | 6.3×7 | 110    | 8×5   | 120    |       |        |       |        |       |        |       |        |
| 220                           | 8×5   | 125    | 8×7   | 160    | 8×7.5 | 170    | 8×9   | 190    | 10×9  | 360    |       |        |
| 270                           | 8×7   | 165    |       |        |       |        |       |        |       |        |       |        |
| 330                           |       |        | 8×7.5 | 180    | 8×9   | 195    | 10×9  | 450    |       |        |       |        |
| 470                           | 8×7.5 | 190    | 8×9   | 210    | 10×9  | 460    |       |        |       |        |       |        |
| 560                           | 8×9   | 230    |       |        |       |        |       |        |       |        |       |        |
| 680                           |       |        | 10×9  | 470    |       |        |       |        |       |        |       |        |
| 1000                          | 10×9  | 480    |       |        |       |        |       |        |       |        |       |        |

## RX30 series

130°C 1000~4000時間品  
Load Life : 130°C 1000~4000 hours

・車載機器やLED照明に最適  
For Automotive and LED Lighting applications

AEC-Q200.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                                                                                                   | 特性 Characteristics                                                                                                                                                                     |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--|--|--|---------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------|--|---------------------|----------------------|------------|
| カテゴリ温度範囲<br>Category Temperature Range                                                                                                                    | -40～+130℃                                                                                                                                                                              |                                                          |  |  |  | -25～+130℃                                                                                         |  |                                                                                                       |  |                     |                      |            |
| 定格電圧範囲<br>Rated Voltage Range                                                                                                                             | 10～100Vdc                                                                                                                                                                              |                                                          |  |  |  | 200,400Vdc                                                                                        |  |                                                                                                       |  |                     |                      |            |
| 静電容量許容差<br>Capacitance Tolerance                                                                                                                          | ±20%(20℃, 120Hz)                                                                                                                                                                       |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
| 漏れ電流<br>Leakage Current (MAX)                                                                                                                             | I=0.01CV又は3μAのいずれか大なる値以下<br>(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater.<br>(After 2 minutes)                                                                                  |                                                          |  |  |  | CV≤1000                                                                                           |  | CV>1000                                                                                               |  |                     |                      |            |
|                                                                                                                                                           |                                                                                                                                                                                        |                                                          |  |  |  | I=0.1CV+40μA以下(1分値)<br>I=0.1CV+40μA (1minute)<br>I=0.03CV+15μA以下(5分値)<br>I=0.03CV+15μA (5minutes) |  | I=0.04CV+100μA以下(1分値)<br>I=0.04CV+100μA (1minute)<br>I=0.02CV+25μA以下(5分値)<br>I=0.02CV+25μA (5minutes) |  |                     |                      |            |
|                                                                                                                                                           |                                                                                                                                                                                        |                                                          |  |  |  | I=漏れ電流(μA) Leakage Current    C=静電容量(μF) Capacitance    V=定格電圧(Vdc) Rated Voltage                 |  |                                                                                                       |  |                     |                      |            |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                                                                                                 | 定格電圧 (Vdc) Rated Voltage    10    16    25    35    50    63    100    200    400    (20℃, 120Hz)                                                                                      |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
|                                                                                                                                                           | tan δ    0.20    0.16    0.14    0.12    0.10    0.09    0.08    0.15    0.20                                                                                                          |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
| 1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF |                                                                                                                                                                                        |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
| 耐久性<br>Endurance                                                                                                                                          | 130℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 130℃,<br>the capacitors shall meet the following requirements. |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
|                                                                                                                                                           |                                                                                                                                                                                        | 10～100Vdc                                                |  |  |  | 200,400Vdc                                                                                        |  |                                                                                                       |  | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) |            |
|                                                                                                                                                           | 静電容量変化率<br>Capacitance Change                                                                                                                                                          | 初期値の±30%以内<br>Within ±30% of the initial value.          |  |  |  | 初期値の±20%以内<br>Within ±20% of the initial value.                                                   |  |                                                                                                       |  |                     | 10～100Vdc            | 200,400Vdc |
|                                                                                                                                                           | 損失角の正接<br>Dissipation Factor                                                                                                                                                           | 規格値の300%以下<br>Not more than 300% of the specified value. |  |  |  | 規格値の200%以下<br>Not more than 200% of the specified value.                                          |  |                                                                                                       |  | φ D=6.3             | —                    | 1000       |
|                                                                                                                                                           | 漏れ電流<br>Leakage Current                                                                                                                                                                | 規格値以下<br>Not more than the specified value.              |  |  |  |                                                                                                   |  |                                                                                                       |  | φ D=8,10            | 2000                 | 2000       |
|                                                                                                                                                           |                                                                                                                                                                                        |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  | φ D≥12.5            | 4000                 | —          |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX)                                                                                  | 定格電圧 (Vdc) Rated Voltage    10    16    25    35    50    63    100    200    400    (120Hz)                                                                                           |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
|                                                                                                                                                           | Z(-25℃)/Z(+20℃)    3    2    2    2    2    2    2    3    6                                                                                                                           |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |
|                                                                                                                                                           | Z(-40℃)/Z(+20℃)    6    4    3    3    3    3    3    —    —                                                                                                                           |                                                          |  |  |  |                                                                                                   |  |                                                                                                       |  |                     |                      |            |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | RX30            | □□□□□               | M                                | □□□           | □□                      | D × L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

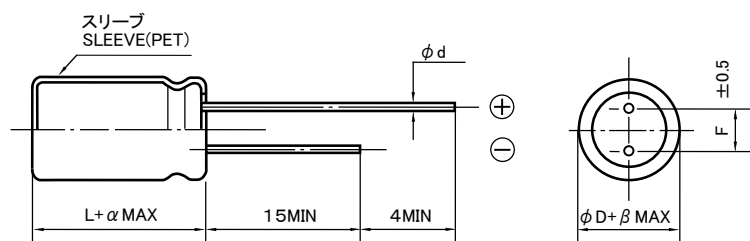
### ◆副記号／OPTION

標準品はblankです。 Standard item is blank.

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

| 10~100Vdc         |             |        |      |      |      |       | 200,400Vdc        |          |      |      |      |       |
|-------------------|-------------|--------|------|------|------|-------|-------------------|----------|------|------|------|-------|
| Frequency (Hz)    |             | 60(50) | 120  | 1k   | 10k  | 100k≦ | Frequency (Hz)    |          | 120  | 1k   | 10k  | 100k≦ |
| 係数<br>Coefficient | 4.7μF       | 0.35   | 0.42 | 0.60 | 0.80 | 1.00  | 係数<br>Coefficient | 1~5.6μF  | 0.20 | 0.40 | 0.80 | 1.00  |
|                   | 10~33μF     | 0.45   | 0.55 | 0.75 | 0.90 | 1.00  |                   | 6.8~15μF | 0.30 | 0.60 | 0.90 | 1.00  |
|                   | 47~330μF    | 0.60   | 0.70 | 0.85 | 0.95 | 1.00  |                   | 22~33μF  | 0.50 | 0.80 | 0.90 | 1.00  |
|                   | 470~1500μF  | 0.65   | 0.75 | 0.90 | 0.98 | 1.00  |                   |          |      |      |      |       |
|                   | 2200~4700μF | 0.75   | 0.80 | 0.95 | 1.00 | 1.00  |                   |          |      |      |      |       |

◆寸法図／DIMENSIONS



|          |      |     |     |      |     |    |
|----------|------|-----|-----|------|-----|----|
|          | (mm) |     |     |      |     |    |
| $\phi$ D | 6.3  | 8   | 10  | 12.5 | 16  | 18 |
| $\phi$ d | 0.5  | 0.6 |     |      | 0.8 |    |
| F        | 2.5  | 3.5 | 5.0 |      | 7.5 |    |
| $\alpha$ | 2.0  |     |     |      |     |    |
| $\beta$  | 0.5  |     |     | 1.0  |     |    |

◆標準品一覧表／STANDARD SIZE

Size φD×L(mm), Rated Ripple Current(mA r.m.s./130°C, 100kHz), Impedance(Ω MAX)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル<br>電流<br>RatedRipple<br>Current | インピーダンス<br>Impedance |        |
|--------------------------------|-----------------------------|---------------------------|---------------------------------------|----------------------|--------|
|                                |                             |                           |                                       | 20°C                 | 100kHz |
| 10                             | 330                         | 8×11.5                    | 360                                   | 0.22                 |        |
|                                | 470                         | 10×12.5                   | 620                                   | 0.15                 |        |
|                                | 1000                        | 10×20                     | 960                                   | 0.073                |        |
|                                | 2200                        | 12.5×25                   | 1430                                  | 0.040                |        |
|                                | 3300                        | 16×25                     | 1900                                  | 0.038                |        |
|                                | 4700                        | 16×31.5                   | 2300                                  | 0.034                |        |
| 16                             | 330                         | 8×11.5                    | 360                                   | 0.22                 |        |
|                                | 470                         | 10×12.5                   | 620                                   | 0.15                 |        |
|                                | 1000                        | 10×20                     | 960                                   | 0.073                |        |
|                                | 2200                        | 12.5×25                   | 1430                                  | 0.040                |        |
|                                | 3300                        | 16×31.5                   | 2300                                  | 0.034                |        |
|                                | 4700                        | 16×35.5                   | 2550                                  | 0.031                |        |
| 25                             | 220                         | 8×11.5                    | 360                                   | 0.22                 |        |
|                                | 330                         | 10×12.5                   | 620                                   | 0.15                 |        |
|                                | 470                         | 10×16                     | 800                                   | 0.10                 |        |
|                                | 1000                        | 12.5×20                   | 1100                                  | 0.055                |        |
|                                | 2200                        | 16×31.5                   | 2300                                  | 0.034                |        |
|                                | 3300                        | 16×35.5                   | 2550                                  | 0.031                |        |
| 35                             | 100                         | 8×11.5                    | 360                                   | 0.22                 |        |
|                                | 220                         | 10×12.5                   | 620                                   | 0.15                 |        |
|                                | 330                         | 10×16                     | 800                                   | 0.10                 |        |
|                                | 470                         | 10×20                     | 960                                   | 0.073                |        |
|                                | 1000                        | 12.5×25                   | 1430                                  | 0.040                |        |
|                                | 2200                        | 16×35.5                   | 2550                                  | 0.031                |        |
|                                | 3300                        | 18×35.5                   | 2800                                  | 0.028                |        |
|                                |                             |                           |                                       |                      |        |
| 50                             | 4.7                         | 8×11.5                    | 100                                   | 0.85                 |        |
|                                | 10                          | 8×11.5                    | 200                                   | 0.60                 |        |
|                                | 22                          | 8×11.5                    | 260                                   | 0.35                 |        |
|                                | 33                          | 8×11.5                    | 300                                   | 0.28                 |        |
|                                | 47                          | 8×11.5                    | 300                                   | 0.28                 |        |
|                                | 100                         | 10×12.5                   | 520                                   | 0.18                 |        |
|                                | 220                         | 10×20                     | 890                                   | 0.082                |        |
|                                | 330                         | 12.5×20                   | 1000                                  | 0.065                |        |
|                                | 470                         | 12.5×25                   | 1200                                  | 0.051                |        |
|                                | 1000                        | 16×31.5                   | 2180                                  | 0.037                |        |
|                                | 2200                        | 18×40                     | 2800                                  | 0.029                |        |
|                                |                             |                           |                                       |                      |        |
| 63                             | 33                          | 8×11.5                    | 250                                   | 0.40                 |        |
|                                | 47                          | 10×12.5                   | 400                                   | 0.27                 |        |
|                                | 100                         | 10×16                     | 450                                   | 0.20                 |        |
|                                | 220                         | 12.5×20                   | 820                                   | 0.10                 |        |
|                                | 330                         | 12.5×25                   | 1000                                  | 0.072                |        |
|                                | 470                         | 16×25                     | 1500                                  | 0.069                |        |
|                                | 1000                        | 16×31.5                   | 1850                                  | 0.056                |        |
|                                | 1500                        | 18×40                     | 2350                                  | 0.043                |        |

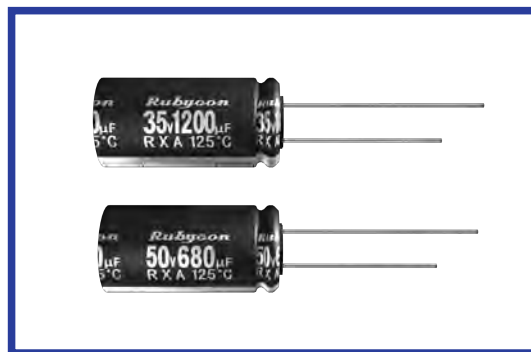
| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル<br>電流<br>RatedRipple<br>Current | インピーダンス<br>Impedance |        |
|--------------------------------|-----------------------------|---------------------------|---------------------------------------|----------------------|--------|
|                                |                             |                           |                                       | 20°C                 | 100kHz |
| 100                            | 4.7                         | 8×11.5                    | 100                                   | 1.3                  |        |
|                                | 10                          | 8×11.5                    | 200                                   | 1.0                  |        |
|                                | 22                          | 8×11.5                    | 220                                   | 0.67                 |        |
|                                | 33                          | 10×12.5                   | 260                                   | 0.45                 |        |
|                                | 47                          | 10×16                     | 330                                   | 0.33                 |        |
|                                | 100                         | 12.5×20                   | 670                                   | 0.17                 |        |
|                                | 220                         | 16×25                     | 1100                                  | 0.13                 |        |
|                                | 330                         | 16×31.5                   | 1300                                  | 0.10                 |        |
|                                | 470                         | 18×31.5                   | 1600                                  | 0.092                |        |
|                                |                             |                           |                                       |                      |        |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル<br>電流<br>RatedRipple<br>Current |
|--------------------------------|-----------------------------|---------------------------|---------------------------------------|
|                                |                             |                           |                                       |
| 200                            | 4.7                         | 6.3×11                    | 100                                   |
|                                |                             | 8×11.5                    | 120                                   |
|                                | 5.6                         | 8×11.5                    | 130                                   |
|                                |                             | 8×16                      | 180                                   |
|                                | 6.8                         | 8×11.5                    | 130                                   |
|                                |                             | 8×16                      | 180                                   |
|                                | 10                          | 8×16                      | 200                                   |
|                                |                             | 8×20                      | 240                                   |
|                                | 15                          | 8×16                      | 200                                   |
|                                |                             | 8×20                      | 240                                   |
|                                | 22                          | 8×20                      | 300                                   |
|                                |                             | 10×16                     | 240                                   |
| 400                            | 33                          | 10×20                     | 320                                   |
|                                | 1                           | 6.3×11                    | 60                                    |
|                                |                             | 8×11.5                    | 65                                    |
|                                | 1.5                         | 8×11.5                    | 75                                    |
|                                |                             | 8×16                      | 80                                    |
|                                | 1.8                         | 8×11.5                    | 75                                    |
|                                |                             | 8×16                      | 85                                    |
|                                | 2.2                         | 8×11.5                    | 75                                    |
|                                |                             | 8×16                      | 90                                    |
|                                |                             | 8×20                      | 110                                   |
|                                | 2.7                         | 8×16                      | 95                                    |
|                                |                             | 8×20                      | 115                                   |
|                                | 3.3                         | 8×16                      | 100                                   |
|                                |                             | 8×20                      | 120                                   |
|                                | 4.7                         | 8×20                      | 120                                   |
|                                |                             | 10×16                     | 125                                   |
|                                | 5.6                         | 10×16                     | 130                                   |
|                                |                             | 10×20                     | 145                                   |
|                                | 6.8                         | 10×20                     | 150                                   |

## RXA series

125°C 2000~3000時間, 小形化品  
Load Life : 125°C 2000~3000hours, Miniaturized

AEC-Q200.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|--|-------------------------------|-------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|-----------------------|----------------------|----------|------|-----------------|------|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40 ~ +125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 25 ~ 70Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV以下 (定格電圧印加2分後)<br>I=0.01CV MAX (After 2 minute)<br>I=漏れ電流 (μ A) C=静電容量 (μ F) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td><td>70</td></tr><tr><td>tan δ</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.10</td></tr></table> (20℃, 120Hz)<br>1000 μ Fを越えるものは1000 μ F増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000 μ F, tan δ shall be added 0.02 to the listed value with increase of every 1000 μ F.                                                                                                                                                                                                                                                                                                                             |      |      |      |  | 定格電圧 (Vdc)<br>Rated Voltage   | 25                                              | 35                           | 50                                                         | 70                      | tan δ                                       | 0.14                  | 0.12                 | 0.10     | 0.10 |                 |      |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 35   | 50   | 70   |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| tan δ                                                                    | 0.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.12 | 0.10 | 0.10 |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 耐久性<br>Endurance                                                         | 125℃中で右表の時間定格電圧 (定格リップル重畳) 印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 125℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±30%以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> <table><tr><td>定格電圧<br/>Rated Voltage</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>25~50Vdc</td><td>3000</td></tr><tr><td>70Vdc</td><td>2000</td></tr></table> |      |      |      |  | 静電容量変化率<br>Capacitance Change | 初期値の±30%以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | 定格電圧<br>Rated Voltage | 時間(hrs)<br>Time(hrs) | 25~50Vdc | 3000 | 70Vdc           | 2000 |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30%以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 定格電圧<br>Rated Voltage                                                    | 時間(hrs)<br>Time(hrs)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 25~50Vdc                                                                 | 3000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 70Vdc                                                                    | 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |      |      |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td><td>70</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |      |      |  | 定格電圧 (Vdc)<br>Rated Voltage   | 25                                              | 35                           | 50                                                         | 70                      | Z(-25℃)/Z(+20℃)                             | 2                     | 2                    | 2        | 2    | Z(-40℃)/Z(+20℃) | 3    | 3 | 3 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 35   | 50   | 70   |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2    | 2    | 2    |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3    | 3    | 3    |  |                               |                                                 |                              |                                                            |                         |                                             |                       |                      |          |      |                 |      |   |   |   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | RXA             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

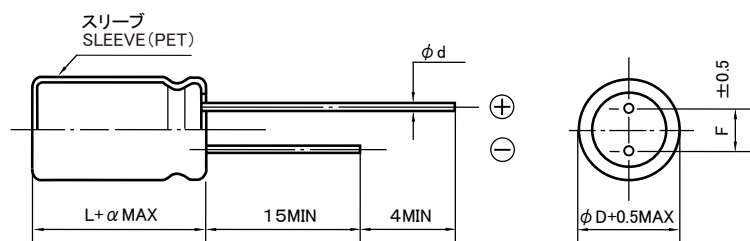
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
|-----------------------|------|------|------|--------|
| 係数<br>Coefficient     |      |      |      |        |
| 240~680 μF            | 0.55 | 0.78 | 0.95 | 1.00   |
| 750~1800 μF           | 0.60 | 0.80 | 0.96 | 1.00   |
| 2000~5600 μF          | 0.70 | 0.86 | 0.98 | 1.00   |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



|          |      |     |    |
|----------|------|-----|----|
|          | (mm) |     |    |
| $\phi D$ | 12.5 | 16  | 18 |
| $\phi d$ | 0.6  | 0.8 |    |
| F        | 5.0  | 7.5 |    |
| $\alpha$ | 2.0  |     |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル電流<br>Rated Ripple Current | 等価直列抵抗<br>ESR |       |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------|-------|
|                                |                             |                           |                                 | 20°C          | -40°C |
| 25                             | 1300                        | 12.5×20                   | 1510                            | 0.068         | 0.71  |
|                                | 1600                        | 12.5×20                   | 1470                            | 0.072         | 0.77  |
|                                | 1800                        | 12.5×25                   | 1900                            | 0.050         | 0.52  |
|                                | 2000                        | 16×20                     | 1820                            | 0.049         | 0.43  |
|                                | 2200                        | 12.5×25                   | 1850                            | 0.053         | 0.57  |
|                                | 2200                        | 12.5×30                   | 2190                            | 0.043         | 0.45  |
|                                | 2700                        | 12.5×30                   | 2130                            | 0.046         | 0.49  |
|                                | 2700                        | 16×20                     | 1800                            | 0.051         | 0.46  |
|                                | 2700                        | 16×25                     | 2250                            | 0.038         | 0.33  |
|                                | 2700                        | 18×20                     | 1990                            | 0.046         | 0.34  |
|                                | 3300                        | 18×20                     | 1970                            | 0.047         | 0.37  |
|                                | 3600                        | 16×25                     | 2220                            | 0.039         | 0.35  |
|                                | 3600                        | 16×31.5                   | 2720                            | 0.029         | 0.25  |
|                                | 3900                        | 18×25                     | 2510                            | 0.033         | 0.25  |
|                                | 4700                        | 16×31.5                   | 2670                            | 0.030         | 0.27  |
|                                | 4700                        | 18×25                     | 2490                            | 0.034         | 0.26  |
| 35                             | 4700                        | 18×31.5                   | 2940                            | 0.028         | 0.20  |
|                                | 5600                        | 18×31.5                   | 2910                            | 0.028         | 0.22  |
|                                | 910                         | 12.5×20                   | 1510                            | 0.068         | 0.71  |
|                                | 1100                        | 12.5×20                   | 1470                            | 0.072         | 0.77  |
|                                | 1200                        | 12.5×25                   | 1900                            | 0.050         | 0.52  |
|                                | 1500                        | 12.5×25                   | 1850                            | 0.053         | 0.57  |
|                                | 1500                        | 12.5×30                   | 2190                            | 0.043         | 0.45  |
|                                | 1500                        | 16×20                     | 1820                            | 0.049         | 0.43  |
|                                | 1800                        | 12.5×30                   | 2130                            | 0.046         | 0.49  |
|                                | 1800                        | 16×20                     | 1800                            | 0.051         | 0.46  |
|                                | 1800                        | 18×20                     | 1990                            | 0.046         | 0.34  |
|                                | 2000                        | 16×25                     | 2250                            | 0.038         | 0.33  |
|                                | 2200                        | 18×20                     | 1970                            | 0.047         | 0.37  |
|                                | 2400                        | 16×25                     | 2220                            | 0.039         | 0.35  |
|                                | 2400                        | 16×31.5                   | 2720                            | 0.029         | 0.25  |
|                                | 2700                        | 18×25                     | 2510                            | 0.033         | 0.25  |
|                                | 3000                        | 16×31.5                   | 2670                            | 0.030         | 0.27  |
|                                | 3300                        | 18×25                     | 2490                            | 0.034         | 0.26  |
|                                | 3300                        | 18×31.5                   | 2940                            | 0.028         | 0.20  |
|                                | 3900                        | 18×31.5                   | 2910                            | 0.028         | 0.22  |

Rated Ripple Current (mA r.m.s./125°C, 100kHz) ESR (Ω MAX/ 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φD×L (mm) | 定格リプル電流<br>Rated Ripple Current | 等価直列抵抗<br>ESR |       |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------|-------|
|                                |                             |                           |                                 | 20°C          | -40°C |
| 50                             | 510                         | 12.5×20                   | 1510                            | 0.068         | 0.72  |
|                                | 620                         | 12.5×20                   | 1470                            | 0.072         | 0.78  |
|                                | 680                         | 12.5×25                   | 1900                            | 0.050         | 0.53  |
|                                | 820                         | 12.5×25                   | 1850                            | 0.053         | 0.57  |
|                                | 820                         | 12.5×30                   | 2190                            | 0.043         | 0.45  |
|                                | 820                         | 16×20                     | 1820                            | 0.049         | 0.43  |
|                                | 1000                        | 12.5×30                   | 2130                            | 0.046         | 0.49  |
|                                | 1000                        | 16×20                     | 1800                            | 0.051         | 0.46  |
|                                | 1000                        | 18×20                     | 1990                            | 0.046         | 0.35  |
|                                | 1100                        | 16×25                     | 2250                            | 0.038         | 0.33  |
|                                | 1300                        | 16×25                     | 2220                            | 0.039         | 0.35  |
|                                | 1300                        | 18×20                     | 1970                            | 0.047         | 0.37  |
|                                | 1500                        | 16×31.5                   | 2720                            | 0.029         | 0.25  |
|                                | 1500                        | 18×25                     | 2510                            | 0.033         | 0.25  |
|                                | 1800                        | 16×31.5                   | 2670                            | 0.030         | 0.27  |
|                                | 1800                        | 18×25                     | 2490                            | 0.034         | 0.27  |
| 70                             | 1800                        | 18×31.5                   | 2940                            | 0.028         | 0.20  |
|                                | 2200                        | 18×31.5                   | 2910                            | 0.028         | 0.22  |
|                                | 240                         | 12.5×20                   | 1270                            | 0.096         | 0.72  |
|                                | 360                         | 12.5×20                   | 1230                            | 0.100         | 0.78  |
|                                | 360                         | 12.5×25                   | 1600                            | 0.070         | 0.53  |
|                                | 430                         | 12.5×30                   | 1850                            | 0.061         | 0.46  |
|                                | 430                         | 16×20                     | 1560                            | 0.067         | 0.44  |
|                                | 510                         | 12.5×25                   | 1550                            | 0.075         | 0.57  |
|                                | 510                         | 18×20                     | 1730                            | 0.061         | 0.36  |
|                                | 560                         | 12.5×30                   | 1790                            | 0.065         | 0.49  |
|                                | 560                         | 16×20                     | 1530                            | 0.070         | 0.47  |
|                                | 560                         | 16×25                     | 1930                            | 0.051         | 0.33  |
|                                | 750                         | 16×25                     | 1890                            | 0.053         | 0.36  |
|                                | 750                         | 16×31.5                   | 2330                            | 0.040         | 0.26  |
|                                | 750                         | 18×20                     | 1710                            | 0.063         | 0.38  |
|                                | 750                         | 18×25                     | 2190                            | 0.044         | 0.25  |
|                                | 1000                        | 16×31.5                   | 2280                            | 0.042         | 0.27  |
|                                | 1000                        | 18×25                     | 2160                            | 0.045         | 0.27  |
|                                | 1000                        | 18×31.5                   | 2560                            | 0.036         | 0.21  |
|                                | 1300                        | 18×31.5                   | 2530                            | 0.037         | 0.22  |

## RXF series

125℃ 2000～5000時間品 高リップル、小形化品。  
125℃ 2000～5000 hours High Ripple Current, Miniaturized.

AEC-Q200.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                 |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|-----------------|------|-------------------------|---------------------------------------------|-------|------|--|--|--------------------|------|--|--|--------------------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -55～+125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                 |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 25～80Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                 |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                 |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV以下(定格電圧印加2分後)<br>I=0.01CV MAX. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                 |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td></tr><tr><td>tan δ</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.09</td></tr></table> <p>(20℃, 120Hz)</p> <p>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br/>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.</p>                                                                                                                                                                                                                                                                                                                                                                                                | 定格電圧 (Vdc)<br>Rated Voltage   | 25                                              | 35                  | 50                   | 63                           | 80                                                         | tan δ           | 0.14 | 0.12                    | 0.10                                        | 0.09  | 0.09 |  |  |                    |      |  |  |                    |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 35                            | 50                                              | 63                  | 80                   |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| tan δ                                                                    | 0.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.12                          | 0.10                                            | 0.09                | 0.09                 |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 耐久性<br>Endurance                                                         | <p>125℃中で右表の時間定格電圧(定格リップル重畳)印加後、下記項目を満足すること。<br/>After applying rated voltage with rated ripple current for specified time at 125℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±30%以内<br/>Within ±30% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td><td>10x16, 10x20</td><td>2000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>10x25</td><td>3000</td></tr><tr><td></td><td></td><td>φD≥12.5 (63~80Vdc)</td><td>5000</td></tr><tr><td></td><td></td><td>φD≥12.5 (25~50Vdc)</td><td></td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±30%以内<br>Within ±30% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 10x16, 10x20    | 2000 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | 10x25 | 3000 |  |  | φD≥12.5 (63~80Vdc) | 5000 |  |  | φD≥12.5 (25~50Vdc) |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±30%以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ケースサイズ<br>Case Size           | 時間(hrs)<br>Time(hrs)                            |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10x16, 10x20                  | 2000                                            |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10x25                         | 3000                                            |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | φD≥12.5 (63~80Vdc)            | 5000                                            |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | φD≥12.5 (25~50Vdc)            |                                                 |                     |                      |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td></tr><tr><td>Z(-55℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> <p>(120Hz)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 定格電圧 (Vdc)<br>Rated Voltage   | 25                                              | 35                  | 50                   | 63                           | 80                                                         | Z(-55℃)/Z(+20℃) | 3    | 3                       | 3                                           | 3     | 3    |  |  |                    |      |  |  |                    |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 35                            | 50                                              | 63                  | 80                   |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |
| Z(-55℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3                             | 3                                               | 3                   | 3                    |                              |                                                            |                 |      |                         |                                             |       |      |  |  |                    |      |  |  |                    |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | RXF             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

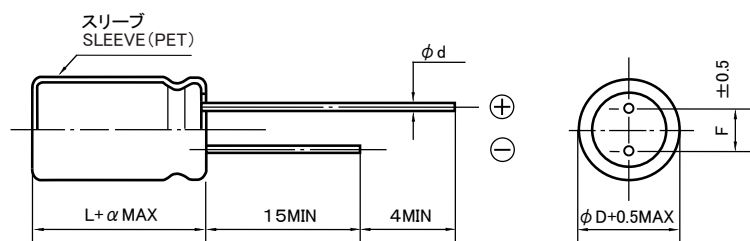
| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|----------------------|------|------|------|-------|
| 240μF                | 0.50 | 0.73 | 0.92 | 1.00  |
| 330～680μF            | 0.55 | 0.77 | 0.94 | 1.00  |
| 750～1800μF           | 0.60 | 0.80 | 0.96 | 1.00  |
| 2000～7500μF          | 0.70 | 0.85 | 0.98 | 1.00  |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve



◆寸法図／DIMENSIONS



(mm)

|          |     |      |     |    |
|----------|-----|------|-----|----|
| $\phi D$ | 10  | 12.5 | 16  | 18 |
| $\phi d$ | 0.6 |      | 0.8 |    |
| F        | 5.0 |      | 7.5 |    |
| $\alpha$ | 2.0 |      |     |    |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./125°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>Rated Ripple Current | 等価直列抵抗<br>ESR (Ω MAX) |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|-----------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz          | -40°C, 100kHz |
| 25                             | 750                         | 10×16                     | 1300                            | 0.078                 | 0.520         |
|                                | 1200                        | 10×20                     | 1540                            | 0.058                 | 0.390         |
|                                | 1500                        | 10×25                     | 1880                            | 0.042                 | 0.300         |
|                                | 1800                        | 12.5×20                   | 1590                            | 0.038                 | 0.220         |
|                                | 2700                        | 12.5×25                   | 2280                            | 0.030                 | 0.160         |
|                                | 3000                        | 16×20                     | 1890                            | 0.029                 | 0.130         |
|                                | 3300                        | 12.5×30                   | 2760                            | 0.025                 | 0.130         |
|                                | 4300                        | 16×25                     | 3030                            | 0.022                 | 0.092         |
|                                | 4300                        | 18×20                     | 1930                            | 0.028                 | 0.110         |
|                                | 5100                        | 16×30                     | 3330                            | 0.018                 | 0.071         |
|                                | 5600                        | 18×25                     | 3200                            | 0.020                 | 0.081         |
|                                | 7500                        | 18×30                     | 3480                            | 0.016                 | 0.066         |
| 35                             | 510                         | 10×16                     | 1300                            | 0.078                 | 0.520         |
|                                | 680                         | 10×20                     | 1540                            | 0.058                 | 0.390         |
|                                | 820                         | 10×25                     | 1880                            | 0.042                 | 0.300         |
|                                | 1100                        | 12.5×20                   | 1590                            | 0.038                 | 0.220         |
|                                | 1500                        | 12.5×25                   | 2280                            | 0.030                 | 0.160         |
|                                | 2000                        | 12.5×30                   | 2760                            | 0.025                 | 0.130         |
|                                | 2000                        | 16×20                     | 1890                            | 0.029                 | 0.130         |
|                                | 2400                        | 16×25                     | 3030                            | 0.022                 | 0.092         |
|                                | 2400                        | 18×20                     | 1930                            | 0.028                 | 0.110         |
|                                | 3300                        | 16×30                     | 3330                            | 0.018                 | 0.071         |
|                                | 3300                        | 18×25                     | 3200                            | 0.020                 | 0.081         |
|                                | 4300                        | 18×30                     | 3480                            | 0.016                 | 0.066         |
| 50                             | 240                         | 10×16                     | 1080                            | 0.120                 | 0.940         |
|                                | 330                         | 10×20                     | 1290                            | 0.088                 | 0.690         |
|                                | 430                         | 10×25                     | 1740                            | 0.062                 | 0.480         |
|                                | 510                         | 12.5×20                   | 1410                            | 0.060                 | 0.410         |
|                                | 750                         | 12.5×25                   | 2030                            | 0.044                 | 0.300         |
|                                | 910                         | 16×20                     | 1740                            | 0.042                 | 0.210         |
|                                | 1000                        | 12.5×30                   | 2510                            | 0.036                 | 0.250         |
|                                | 1200                        | 18×20                     | 1830                            | 0.040                 | 0.200         |
|                                | 1300                        | 16×25                     | 2690                            | 0.030                 | 0.160         |
|                                | 1600                        | 16×30                     | 3150                            | 0.025                 | 0.130         |
|                                | 1800                        | 18×25                     | 2900                            | 0.029                 | 0.150         |
|                                | 2200                        | 18×30                     | 3330                            | 0.024                 | 0.120         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>Rated Ripple Current | 等価直列抵抗<br>ESR (Ω MAX) |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|-----------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz          | -40°C, 100kHz |
| 63                             | 390                         | 12.5×20                   | 1310                            | 0.094                 | 0.480         |
|                                | 510                         | 12.5×25                   | 1880                            | 0.069                 | 0.360         |
|                                | 620                         | 16×20                     | 1630                            | 0.062                 | 0.240         |
|                                | 680                         | 12.5×30                   | 2410                            | 0.052                 | 0.290         |
|                                | 820                         | 18×20                     | 1750                            | 0.055                 | 0.220         |
|                                | 910                         | 16×25                     | 2300                            | 0.047                 | 0.180         |
|                                | 1100                        | 16×30                     | 2940                            | 0.037                 | 0.140         |
|                                | 1200                        | 18×25                     | 2440                            | 0.042                 | 0.160         |
|                                | 1500                        | 18×30                     | 3100                            | 0.034                 | 0.130         |
|                                | 180                         | 10×20                     | 1250                            | 0.150                 | —             |
|                                | 240                         | 10×25                     | 1530                            | 0.110                 | —             |
|                                | 270                         | 12.5×20                   | 1310                            | 0.110                 | —             |
| 80                             | 330                         | 12.5×25                   | 1880                            | 0.080                 | —             |
|                                | 470                         | 12.5×30                   | 2410                            | 0.065                 | —             |
|                                | 470                         | 16×20                     | 1630                            | 0.069                 | —             |
|                                | 680                         | 16×25                     | 2300                            | 0.050                 | —             |
|                                | 820                         | 16×30                     | 2940                            | 0.040                 | —             |
|                                | 620                         | 18×20                     | 1790                            | 0.060                 | —             |
|                                | 820                         | 18×25                     | 2440                            | 0.044                 | —             |
|                                | 1000                        | 18×30                     | 3100                            | 0.035                 | —             |

## RXG series

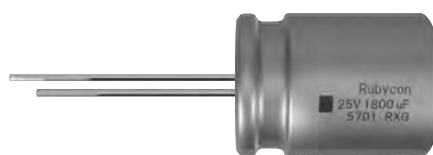
150℃ 1500時間品  
Load Life : 150℃ 1500hours

・車載機器等の高温用途に最適  
Solution for high temperature application such as automobile electronics.

AEC-Q200



車載専用 Automotive Only



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|------|------|-----------------|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+150℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 25～50Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td></tr><tr><td>tan δ</td><td>0.14</td><td>0.12</td><td>0.10</td></tr></table> (20℃, 120Hz)<br>1000uFを超えるものは1000uF増す毎に上記の表に0.02を加えた値とする。                                                                                                                                                                                                                                                                                                              | 定格電圧(Vdc)<br>Rated Voltage    | 25                                                | 35                           | 50                                                         | tan δ                   | 0.14                                        | 0.12 | 0.10 |                 |   |   |   |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 35                            | 50                                                |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| tan δ                                                                    | 0.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.12                          | 0.10                                              |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 耐久性<br>Endurance                                                         | 150℃中で1500時間定格電圧(定格リップル重畳)印加後、下記規格を満足すること。<br>After applying rated voltage with rated ripple current for 1500 hours at 150℃, the capacitors shall meet the following requirements.<br><table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      |      |                 |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>25</td><td>35</td><td>50</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>4</td><td>4</td><td>4</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                | 定格電圧(Vdc)<br>Rated Voltage    | 25                                                | 35                           | 50                                                         | Z(-25℃)/Z(+20℃)         | 2                                           | 2    | 2    | Z(-40℃)/Z(+20℃) | 4 | 4 | 4 |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 35                            | 50                                                |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2                             | 2                                                 |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4                             | 4                                                 |                              |                                                            |                         |                                             |      |      |                 |   |   |   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | RXG             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

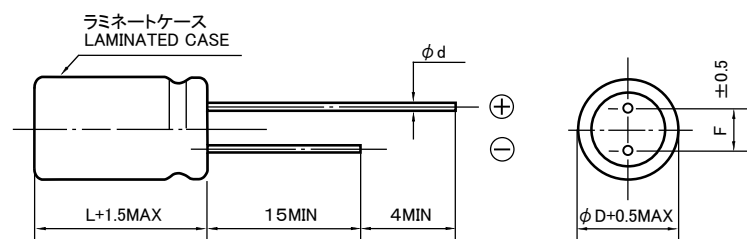
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|----------------------|------|------|------|-------|
| 係数<br>Coefficient    |      |      |      |       |
| 390~560μF            | 0.50 | 0.74 | 0.94 | 1.00  |
| 680~1800μF           | 0.60 | 0.74 | 0.94 | 1.00  |
| 2000~3600μF          | 0.64 | 0.75 | 0.95 | 1.00  |

### ◆副記号／OPTION

標準品はブランクとなります。  
Standard item is blank

### ◆寸法図／DIMENSIONS



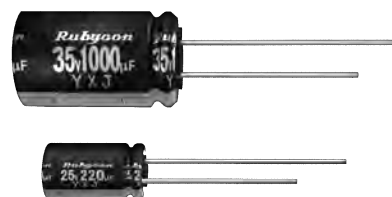
|          | (mm) |     |    |
|----------|------|-----|----|
| $\phi D$ | 12.5 | 16  | 18 |
| $\phi d$ | 0.6  | 0.8 |    |
| F        | 5.0  | 7.5 |    |

### ◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法 Size<br>$\phi D \times L$<br>(mm) | 定格リプル電流<br>Rated ripple current<br>(mA r.m.s./150°C,100kHz) | 等価直列抵抗<br>ESR( $\Omega$ MAX) |              |
|--------------------------------|------------------------------------|----------------------------------------|-------------------------------------------------------------|------------------------------|--------------|
|                                |                                    |                                        |                                                             | 20°C,100kHz                  | -40°C,100kHz |
| 25                             | 1100                               | 12.5X20                                | 1150                                                        | 0.070                        | 1.0          |
|                                | 1600                               | 12.5X25                                | 1400                                                        | 0.050                        | 0.75         |
|                                | 1800                               | 16X20                                  | 1520                                                        | 0.045                        | 0.60         |
|                                | 2400                               | 18X20                                  | 1610                                                        | 0.040                        | 0.50         |
|                                | 2700                               | 16X25                                  | 1750                                                        | 0.035                        | 0.43         |
|                                | 3600                               | 18X25                                  | 1850                                                        | 0.030                        | 0.35         |
| 35                             | 560                                | 12.5X20                                | 1150                                                        | 0.070                        | 1.0          |
|                                | 820                                | 12.5X25                                | 1400                                                        | 0.050                        | 0.75         |
|                                | 1000                               | 16X20                                  | 1520                                                        | 0.045                        | 0.60         |
|                                | 1300                               | 18X20                                  | 1610                                                        | 0.040                        | 0.50         |
|                                | 1400                               | 16X25                                  | 1750                                                        | 0.035                        | 0.43         |
|                                | 2000                               | 18X25                                  | 1850                                                        | 0.030                        | 0.35         |
| 50                             | 390                                | 12.5X20                                | 860                                                         | 0.12                         | 2.5          |
|                                | 560                                | 12.5X25                                | 1100                                                        | 0.085                        | 2.0          |
|                                | 680                                | 16X20                                  | 1100                                                        | 0.075                        | 1.5          |
|                                | 910                                | 18X20                                  | 1170                                                        | 0.065                        | 1.2          |
|                                | 1000                               | 16X25                                  | 1400                                                        | 0.055                        | 1.1          |
|                                | 1300                               | 18X25                                  | 1500                                                        | 0.045                        | 1.0          |

## YXJ series

105°C 4000~10000時間品 小形化 長寿命品  
Load Life : 105°C 4000~10000 hours. Miniaturized, Long Life



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|------|-----------|-----------|-----------|-----------------|------|----------|----------|------|-------|-------|-------|-------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|---|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3～100Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>tan δ</td><td>0.22</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.08</td></tr></table> (20℃, 120Hz)<br>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.                                                                                                                                                                                                                                                                                                                                                                                                                          | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                                                                                                                                                  | 6.3                                                                        | 10                                                                                                                                                                                                                                                                                                          | 16                   | 25                   | 35   | 50        | 63        | 100       | tan δ           | 0.22 | 0.19     | 0.16     | 0.14 | 0.12  | 0.10  | 0.09  | 0.08  |                              |                                                            |                         |                                             |   |   |   |   |   |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10                                                                                                                                                                                                                                                                                                          | 16                                                                         | 25                                                                                                                                                                                                                                                                                                          | 35                   | 50                   | 63   | 100       |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| tan δ                                                                    | 0.22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.19                                                                                                                                                                                                                                                                                                        | 0.16                                                                       | 0.14                                                                                                                                                                                                                                                                                                        | 0.12                 | 0.10                 | 0.09 | 0.08      |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±25%以内(6.3Vdc: ±30%)<br/>Within ±25% of the initial value(6.3Vdc: ±30%)</td><td rowspan="3"><table><tr><td>ケースサイズ<br/>Case Size</td><td colspan="2">時間(hrs)<br/>Time(hrs)</td></tr><tr><td></td><td>6.3～10Vdc</td><td>16～100Vdc</td></tr><tr><td>φD=5</td><td>4000</td><td>5000</td></tr><tr><td>φD=6.3,8</td><td>6000</td><td>7000</td></tr><tr><td>φD≥10</td><td>8000</td><td>10000</td></tr></table></td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change                                                                                                                                                                                                                                                                               | 初期値の±25%以内(6.3Vdc: ±30%)<br>Within ±25% of the initial value(6.3Vdc: ±30%) | <table><tr><td>ケースサイズ<br/>Case Size</td><td colspan="2">時間(hrs)<br/>Time(hrs)</td></tr><tr><td></td><td>6.3～10Vdc</td><td>16～100Vdc</td></tr><tr><td>φD=5</td><td>4000</td><td>5000</td></tr><tr><td>φD=6.3,8</td><td>6000</td><td>7000</td></tr><tr><td>φD≥10</td><td>8000</td><td>10000</td></tr></table> | ケースサイズ<br>Case Size  | 時間(hrs)<br>Time(hrs) |      |           | 6.3～10Vdc | 16～100Vdc | φD=5            | 4000 | 5000     | φD=6.3,8 | 6000 | 7000  | φD≥10 | 8000  | 10000 | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |   |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±25%以内(6.3Vdc: ±30%)<br>Within ±25% of the initial value(6.3Vdc: ±30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <table><tr><td>ケースサイズ<br/>Case Size</td><td colspan="2">時間(hrs)<br/>Time(hrs)</td></tr><tr><td></td><td>6.3～10Vdc</td><td>16～100Vdc</td></tr><tr><td>φD=5</td><td>4000</td><td>5000</td></tr><tr><td>φD=6.3,8</td><td>6000</td><td>7000</td></tr><tr><td>φD≥10</td><td>8000</td><td>10000</td></tr></table> | ケースサイズ<br>Case Size                                                        |                                                                                                                                                                                                                                                                                                             | 時間(hrs)<br>Time(hrs) |                      |      | 6.3～10Vdc | 16～100Vdc | φD=5      | 4000            | 5000 | φD=6.3,8 | 6000     | 7000 | φD≥10 | 8000  | 10000 |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| ケースサイズ<br>Case Size                                                      | 時間(hrs)<br>Time(hrs)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
|                                                                          | 6.3～10Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                             | 16～100Vdc                                                                  |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| φD=5                                                                     | 4000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5000                                                                                                                                                                                                                                                                                                        |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| φD=6.3,8                                                                 | 6000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 7000                                                                                                                                                                                                                                                                                                        |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| φD≥10                                                                    | 8000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10000                                                                                                                                                                                                                                                                                                       |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                             |                                                                            |                                                                                                                                                                                                                                                                                                             |                      |                      |      |           |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                                                                                                                                                  | 6.3                                                                        | 10                                                                                                                                                                                                                                                                                                          | 16                   | 25                   | 35   | 50        | 63        | 100       | Z(-25℃)/Z(+20℃) | 4    | 3        | 2        | 2    | 2     | 2     | 2     | 2     | Z(-40℃)/Z(+20℃)              | 8                                                          | 6                       | 4                                           | 3 | 3 | 3 | 3 | 3 |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10                                                                                                                                                                                                                                                                                                          | 16                                                                         | 25                                                                                                                                                                                                                                                                                                          | 35                   | 50                   | 63   | 100       |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3                                                                                                                                                                                                                                                                                                           | 2                                                                          | 2                                                                                                                                                                                                                                                                                                           | 2                    | 2                    | 2    | 2         |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6                                                                                                                                                                                                                                                                                                           | 4                                                                          | 3                                                                                                                                                                                                                                                                                                           | 3                    | 3                    | 3    | 3         |           |           |                 |      |          |          |      |       |       |       |       |                              |                                                            |                         |                                             |   |   |   |   |   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | YXJ             | □□□□□               | M                                | □□□           | □□                      | D×L                 |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆副記号／OPTION

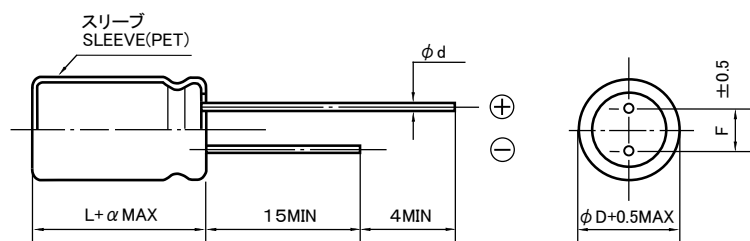
標準品はブランクとなります。Standard item is blank.

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

| Frequency (Hz)    |              | 120  | 1k   | 10k  | 100k≤ |
|-------------------|--------------|------|------|------|-------|
| 係数<br>Coefficient | 1μF          | 0.35 | 0.60 | 0.80 | 1.00  |
|                   | 2.2~10μF     | 0.42 | 0.60 | 0.80 | 1.00  |
|                   | 22~47μF      | 0.55 | 0.75 | 0.90 | 1.00  |
|                   | 100~330μF    | 0.70 | 0.85 | 0.95 | 1.00  |
|                   | 470~1000μF   | 0.75 | 0.90 | 0.98 | 1.00  |
|                   | 2200~15000μF | 0.80 | 0.95 | 1.00 | 1.00  |

| Frequency (Hz) |           | 120  | 1k   | 10k  | 100k≤ |
|----------------|-----------|------|------|------|-------|
| Coefficient    | 63~100Vdc | 0.42 | 0.60 | 0.80 | 1.00  |

◆寸法図／DIMENSIONS



(mm)

|          |                                                       |     |     |     |      |     |
|----------|-------------------------------------------------------|-----|-----|-----|------|-----|
| $\phi D$ | 5                                                     | 6.3 | 8   | 10  | 12.5 | 16  |
| $\phi d$ | 0.5                                                   |     | 0.6 |     |      | 0.8 |
| F        | 2.0                                                   | 2.5 | 3.5 | 5.0 |      | 7.5 |
| $\alpha$ | $L \leq 16 : \alpha = 1.5$ $L \geq 20 : \alpha = 2.0$ |     |     |     |      |     |

◆標準品一覧表／STANDARD SIZE

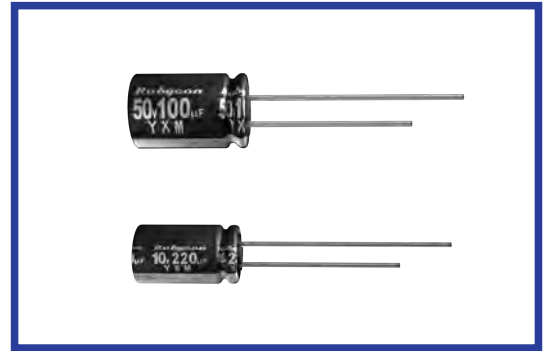
Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current | インピーダンス(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|----------------------------------------|-----------------------------|---------------|
|                                |                             |                           |                                        | 20°C, 100kHz                | -10°C, 100kHz |
| 6.3                            | 100                         | 5×11                      | 150                                    | 0.90                        | 3.6           |
|                                | 220                         | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 330                         | 6.3×11                    | 340                                    | 0.22                        | 0.87          |
|                                | 470                         | 6.3×11                    | 400                                    | 0.22                        | 0.87          |
|                                | 1000                        | 8×11.5                    | 640                                    | 0.13                        | 0.52          |
|                                | 2200                        | 10×16                     | 1300                                   | 0.062                       | 0.25          |
|                                | 3300                        | 10×20                     | 1400                                   | 0.046                       | 0.18          |
|                                | 4700                        | 12.5×25                   | 2230                                   | 0.032                       | 0.11          |
|                                | 6800                        | 12.5×25                   | 2230                                   | 0.032                       | 0.11          |
|                                | 10000                       | 16×25                     | 2930                                   | 0.021                       | 0.060         |
| 10                             | 15000                       | 16×35.5                   | 3610                                   | 0.015                       | 0.044         |
|                                | 100                         | 5×11                      | 150                                    | 0.90                        | 3.6           |
|                                | 220                         | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 330                         | 6.3×11                    | 400                                    | 0.22                        | 0.87          |
|                                | 470                         | 6.3×11                    | 400                                    | 0.22                        | 0.87          |
|                                | 1000                        | 10×12.5                   | 865                                    | 0.08                        | 0.32          |
|                                | 2200                        | 10×20                     | 1400                                   | 0.046                       | 0.18          |
|                                | 3300                        | 12.5×20                   | 1900                                   | 0.041                       | 0.14          |
|                                | 4700                        | 12.5×25                   | 2230                                   | 0.032                       | 0.11          |
|                                | 6800                        | 16×25                     | 2930                                   | 0.021                       | 0.060         |
| 16                             | 10000                       | 16×31.5                   | 3450                                   | 0.019                       | 0.056         |
|                                | 47                          | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 100                         | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 220                         | 6.3×11                    | 400                                    | 0.22                        | 0.87          |
|                                | 330                         | 6.3×11                    | 400                                    | 0.22                        | 0.87          |
|                                | 470                         | 8×11.5                    | 640                                    | 0.13                        | 0.52          |
|                                | 1000                        | 10×16                     | 1210                                   | 0.062                       | 0.25          |
|                                | 2200                        | 12.5×20                   | 1900                                   | 0.041                       | 0.14          |
|                                | 3300                        | 12.5×25                   | 2230                                   | 0.032                       | 0.11          |
|                                | 4700                        | 16×25                     | 2930                                   | 0.021                       | 0.060         |
| 25                             | 6800                        | 16×31.5                   | 3450                                   | 0.019                       | 0.056         |
|                                | 33                          | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 47                          | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 100                         | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 220                         | 6.3×11                    | 400                                    | 0.22                        | 0.87          |
|                                | 330                         | 8×11.5                    | 640                                    | 0.13                        | 0.52          |
|                                | 470                         | 10×12.5                   | 865                                    | 0.08                        | 0.32          |
|                                | 1000                        | 10×20                     | 1400                                   | 0.046                       | 0.18          |
|                                | 2200                        | 12.5×25                   | 2230                                   | 0.032                       | 0.11          |
|                                | 3300                        | 16×25                     | 2930                                   | 0.021                       | 0.060         |
|                                | 4700                        | 16×31.5                   | 3450                                   | 0.019                       | 0.056         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current | インピーダンス(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|----------------------------------------|-----------------------------|---------------|
|                                |                             |                           |                                        | 20°C, 100kHz                | -10°C, 100kHz |
| 35                             | 33                          | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 47                          | 5×11                      | 250                                    | 0.40                        | 1.2           |
|                                | 100                         | 6.3×11                    | 400                                    | 0.22                        | 0.87          |
|                                | 220                         | 8×11.5                    | 640                                    | 0.13                        | 0.52          |
|                                | 330                         | 10×12.5                   | 865                                    | 0.08                        | 0.32          |
|                                | 470                         | 10×16                     | 1210                                   | 0.062                       | 0.25          |
|                                | 1000                        | 12.5×20                   | 1900                                   | 0.041                       | 0.14          |
|                                | 2200                        | 16×25                     | 2930                                   | 0.021                       | 0.060         |
|                                | 3300                        | 16×31.5                   | 3450                                   | 0.019                       | 0.056         |
|                                | 1                           | 5×11                      | 30                                     | 4.0                         | 8.0           |
| 50                             | 2.2                         | 5×11                      | 43                                     | 2.5                         | 6.0           |
|                                | 3.3                         | 5×11                      | 53                                     | 2.2                         | 5.6           |
|                                | 4.7                         | 5×11                      | 88                                     | 1.9                         | 5.0           |
|                                | 10                          | 5×11                      | 100                                    | 1.5                         | 4.0           |
|                                | 22                          | 5×11                      | 180                                    | 0.7                         | 2.8           |
|                                | 33                          | 5×11                      | 250                                    | 0.7                         | 2.8           |
|                                | 47                          | 6.3×11                    | 295                                    | 0.3                         | 1.2           |
|                                | 100                         | 8×11.5                    | 555                                    | 0.17                        | 0.68          |
|                                | 220                         | 10×16                     | 1050                                   | 0.084                       | 0.34          |
|                                | 330                         | 10×20                     | 1220                                   | 0.06                        | 0.24          |
| 63                             | 470                         | 12.5×20                   | 1660                                   | 0.045                       | 0.15          |
|                                | 1000                        | 16×25                     | 2730                                   | 0.032                       | 0.096         |
|                                | 2200                        | 16×35.5                   | 3150                                   | 0.019                       | 0.057         |
|                                | 10                          | 5×11                      | 173                                    | 0.88                        | 3.5           |
|                                | 22                          | 5×11                      | 173                                    | 0.88                        | 3.5           |
|                                | 33                          | 6.3×11                    | 278                                    | 0.35                        | 1.4           |
|                                | 47                          | 6.3×11                    | 278                                    | 0.35                        | 1.4           |
|                                | 100                         | 10×12.5                   | 725                                    | 0.15                        | 0.60          |
|                                | 220                         | 10×20                     | 1200                                   | 0.078                       | 0.31          |
|                                | 330                         | 12.5×20                   | 1570                                   | 0.06                        | 0.19          |
| 100                            | 470                         | 12.5×25                   | 1990                                   | 0.043                       | 0.14          |
|                                | 1000                        | 16×25                     | 2730                                   | 0.032                       | 0.096         |
|                                | 1                           | 5×11                      | 20                                     | 4.5                         | 15.0          |
|                                | 2.2                         | 5×11                      | 30                                     | 3.0                         | 13.0          |
|                                | 3.3                         | 5×11                      | 40                                     | 2.7                         | 11.0          |
|                                | 4.7                         | 5×11                      | 65                                     | 2.5                         | 10.0          |
|                                | 10                          | 6.3×11                    | 267                                    | 0.57                        | 2.3           |
|                                | 22                          | 6.3×11                    | 267                                    | 0.57                        | 2.3           |
|                                | 33                          | 8×11.5                    | 462                                    | 0.36                        | 1.4           |
|                                | 47                          | 8×16                      | 585                                    | 0.25                        | 1.0           |
|                                | 100                         | 10×20                     | 1040                                   | 0.12                        | 0.52          |
|                                | 220                         | 12.5×25                   | 1620                                   | 0.06                        | 0.23          |
|                                | 330                         | 16×25                     | 2210                                   | 0.044                       | 0.16          |

## YXM series

105°C 10000時間品 小形化品, -40°C対応  
Load Life : 105°C 10000 hours, Miniaturized, -40°C~+105°C



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|--------------|-----|--------------|-----------------|------|------|------|------|------|------|------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 10～100Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>(20℃, 120Hz)</td></tr><tr><td>tan δ</td><td>0.45</td><td>0.35</td><td>0.30</td><td>0.22</td><td>0.19</td><td>0.17</td><td>0.15</td><td></td></tr></table>                                                                                                                                                                                                                                        | 定格電圧(Vdc)<br>Rated Voltage    | 10                                                | 16                           | 25                                                         | 35                      | 50                                          | 63           | 100 | (20℃, 120Hz) | tan δ           | 0.45 | 0.35 | 0.30 | 0.22 | 0.19 | 0.17 | 0.15 |  |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16                            | 25                                                | 35                           | 50                                                         | 63                      | 100                                         | (20℃, 120Hz) |     |              |                 |      |      |      |      |      |      |      |  |
| tan δ                                                                    | 0.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.35                          | 0.30                                              | 0.22                         | 0.19                                                       | 0.17                    | 0.15                                        |              |     |              |                 |      |      |      |      |      |      |      |  |
| 耐久性<br>Endurance                                                         | 105℃中で10000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 10000hours at 105℃, the capacitors shall meet the following requirements.<br><table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±25% 以内<br/>Within ±25% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±25% 以内<br>Within ±25% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |              |     |              |                 |      |      |      |      |      |      |      |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±25% 以内<br>Within ±25% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                              |                                                            |                         |                                             |              |     |              |                 |      |      |      |      |      |      |      |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>(120Hz)</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>8</td><td>6</td><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td><td></td></tr></table>                                                                                                                                                                                                                                                        | 定格電圧(Vdc)<br>Rated Voltage    | 10                                                | 16                           | 25                                                         | 35                      | 50                                          | 63           | 100 | (120Hz)      | Z(-25℃)/Z(+20℃) | 8    | 6    | 4    | 4    | 3    | 3    | 3    |  |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16                            | 25                                                | 35                           | 50                                                         | 63                      | 100                                         | (120Hz)      |     |              |                 |      |      |      |      |      |      |      |  |
| Z(-25℃)/Z(+20℃)                                                          | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 6                             | 4                                                 | 4                            | 3                                                          | 3                       | 3                                           |              |     |              |                 |      |      |      |      |      |      |      |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | YXM             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

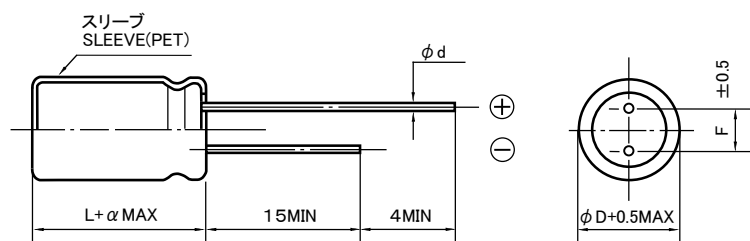
| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|----------------------|------|------|------|-------|
| 係数<br>Coefficient    |      |      |      |       |
| 1~10μF               | 0.42 | 0.60 | 0.80 | 1.00  |
| 22~33μF              | 0.55 | 0.75 | 0.90 | 1.00  |
| 47~330μF             | 0.70 | 0.85 | 0.95 | 1.00  |

### ◆副記号／OPTION

EFR : PETスリーブ PET Sleeve



◆寸法図／DIMENSIONS



(mm)

|          |     |     |     |
|----------|-----|-----|-----|
| $\phi D$ | 5   | 6.3 | 8   |
| $\phi d$ | 0.5 |     | 0.6 |
| F        | 2.0 | 2.5 | 3.5 |
| $\alpha$ | 1.5 |     |     |

◆標準品一覧表／STANDARD SIZE

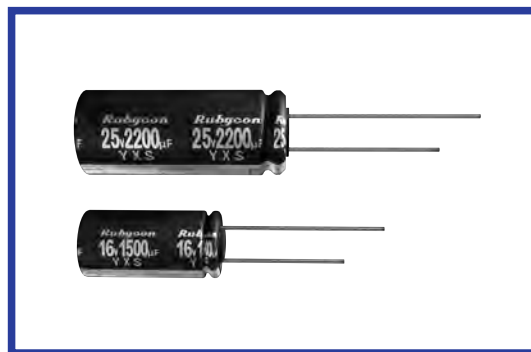
Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法<br>Size $\phi D \times L$<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current |
|--------------------------------|------------------------------------|----------------------------------------|----------------------------------------|
| 10                             | 100                                | 5×11                                   | 130                                    |
|                                | 220                                | 6.3×11                                 | 210                                    |
|                                | 330                                | 8×11.5                                 | 330                                    |
| 16                             | 47                                 | 5×11                                   | 130                                    |
|                                | 100                                | 6.3×11                                 | 210                                    |
|                                | 220                                | 8×11.5                                 | 330                                    |
| 25                             | 33                                 | 5×11                                   | 130                                    |
|                                | 47                                 | 5×11                                   | 130                                    |
|                                | 100                                | 6.3×11                                 | 210                                    |
| 35                             | 33                                 | 5×11                                   | 130                                    |
|                                | 47                                 | 6.3×11                                 | 210                                    |
|                                | 100                                | 8×11.5                                 | 330                                    |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法<br>Size $\phi D \times L$<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current |
|--------------------------------|------------------------------------|----------------------------------------|----------------------------------------|
| 50                             | 1                                  | 5×11                                   | 25                                     |
|                                | 2.2                                | 5×11                                   | 35                                     |
|                                | 3.3                                | 5×11                                   | 70                                     |
|                                | 4.7                                | 5×11                                   | 80                                     |
|                                | 10                                 | 5×11                                   | 90                                     |
|                                | 22                                 | 5×11                                   | 135                                    |
|                                | 33                                 | 6.3×11                                 | 190                                    |
|                                | 47                                 | 6.3×11                                 | 190                                    |
| 63                             | 100                                | 8×11.5                                 | 270                                    |
|                                | 10                                 | 5×11                                   | 80                                     |
|                                | 22                                 | 6.3×11                                 | 170                                    |
|                                | 33                                 | 6.3×11                                 | 170                                    |
| 100                            | 47                                 | 8×11.5                                 | 240                                    |
|                                | 1                                  | 5×11                                   | 40                                     |
|                                | 2.2                                | 5×11                                   | 50                                     |
|                                | 3.3                                | 5×11                                   | 60                                     |
|                                | 4.7                                | 5×11                                   | 70                                     |
|                                | 10                                 | 6.3×11                                 | 150                                    |
|                                | 22                                 | 8×11.5                                 | 230                                    |

## YXS series

105°C 3000~6000時間品 小形化 低インピーダンス品  
Load Life : 105°C 3000~6000 hours. Miniaturized, Low Impedance



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                                                                                                                                        | 特性 Characteristics                                                                                                                                                                                                       |                                                                                          |      |      |      |      |                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------|------|------|------|----------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                                                                                                                                         | -40~+105°C                                                                                                                                                                                                               |                                                                                          |      |      |      |      |                      |
| 定格電圧範囲<br>Rated Voltage Range                                                                                                                                                                  | 6.3~50Vdc                                                                                                                                                                                                                |                                                                                          |      |      |      |      |                      |
| 静電容量許容差<br>Capacitance Tolerance                                                                                                                                                               | ±20%(20°C, 120Hz)                                                                                                                                                                                                        |                                                                                          |      |      |      |      |                      |
| 漏れ電流<br>Leakage Current (MAX)                                                                                                                                                                  | $I=0.01CV$ 又は $3\mu A$ のいずれか大なる値以下(定格電圧印加2分後)<br>$I=0.01CV$ or $3\mu A$ whichever is greater. (After 2 minutes)<br>$I$ =漏れ電流( $\mu A$ ) $C$ =静電容量( $\mu F$ ) $V$ =定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage |                                                                                          |      |      |      |      |                      |
| 損失角の正接( $\tan \delta$ )<br>Dissipation Factor (MAX)                                                                                                                                            | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                                                               | 6.3                                                                                      | 10   | 16   | 25   | 35   | 50                   |
|                                                                                                                                                                                                | $\tan \delta$                                                                                                                                                                                                            | 0.22                                                                                     | 0.19 | 0.16 | 0.14 | 0.12 | 0.10                 |
| 1000 $\mu F$ を越えるものは1000 $\mu F$ 増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000 $\mu F$ , $\tan \delta$ shall be added 0.02 to the listed value with increase of every 1000 $\mu F$ . |                                                                                                                                                                                                                          |                                                                                          |      |      |      |      |                      |
| 耐久性<br>Endurance                                                                                                                                                                               | 105°C中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105°C, the capacitors shall meet the following requirements.                                    |                                                                                          |      |      |      |      |                      |
|                                                                                                                                                                                                | 静電容量変化率<br>Capacitance Change                                                                                                                                                                                            | 初期値の±25%以内(6.3Vdc, 10Vdc: ±30%)<br>Within ±25% of the initial value(6.3Vdc, 10Vdc: ±30%) |      |      |      |      | ケースサイズ<br>Case Size  |
|                                                                                                                                                                                                | 損失角の正接<br>Dissipation Factor                                                                                                                                                                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                               |      |      |      |      | 時間(hrs)<br>Time(hrs) |
|                                                                                                                                                                                                | 漏れ電流<br>Leakage Current                                                                                                                                                                                                  | 規格値以下<br>Not more than the specified value.                                              |      |      |      |      |                      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX)                                                                                                                       | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                                                               | 6.3                                                                                      | 10   | 16   | 25   | 35   | 50                   |
|                                                                                                                                                                                                | $Z(-25^{\circ}C)/Z(+20^{\circ}C)$                                                                                                                                                                                        | 4                                                                                        | 3    | 2    | 2    | 2    | 2                    |
|                                                                                                                                                                                                | $Z(-40^{\circ}C)/Z(+20^{\circ}C)$                                                                                                                                                                                        | 8                                                                                        | 6    | 4    | 3    | 3    | 3                    |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | YXS             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

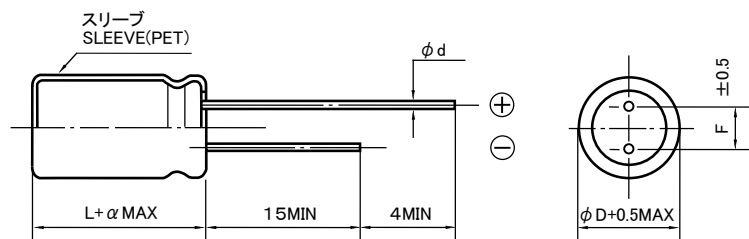
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|----------------------|------|------|------|-------|
| 22~33 $\mu F$        | 0.42 | 0.70 | 0.90 | 1.00  |
| 47~270 $\mu F$       | 0.50 | 0.73 | 0.92 | 1.00  |
| 330~680 $\mu F$      | 0.55 | 0.77 | 0.94 | 1.00  |
| 820~1800 $\mu F$     | 0.60 | 0.80 | 0.96 | 1.00  |
| 2200~22000 $\mu F$   | 0.70 | 0.85 | 0.98 | 1.00  |

### ◆副記号／OPTION

EFG : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



(mm)

|          |                                                           |     |     |     |      |     |    |
|----------|-----------------------------------------------------------|-----|-----|-----|------|-----|----|
| $\phi D$ | 5                                                         | 6.3 | 8   | 10  | 12.5 | 16  | 18 |
| $\phi d$ | 0.5                                                       |     | 0.6 |     |      | 0.8 |    |
| F        | 2.0                                                       | 2.5 | 3.5 | 5.0 |      | 7.5 |    |
| $\alpha$ | $L \leq 16 : \alpha = 1.5 \quad L \geq 20 : \alpha = 2.0$ |     |     |     |      |     |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz                    | -10°C, 100kHz |
| 6.3                            | 150                         | 5×11                      | 210                             | 0.58                            | 2.3           |
|                                | 220                         | 5×11                      | 210                             | 0.58                            | 2.3           |
|                                | 330                         | 6.3×11                    | 340                             | 0.22                            | 0.87          |
|                                | 470                         | 6.3×11                    | 340                             | 0.22                            | 0.87          |
|                                | 680                         | 8×11.5                    | 730                             | 0.12                            | 0.48          |
|                                | 820                         | 8×16                      | 1050                            | 0.069                           | 0.27          |
|                                | 1000                        | 8×11.5                    | 730                             | 0.120                           | 0.48          |
|                                | 1200                        | 8×16                      | 1050                            | 0.069                           | 0.27          |
|                                | 1200                        | 10×12.5                   | 1210                            | 0.060                           | 0.24          |
|                                | 1500                        | 10×16                     | 1450                            | 0.046                           | 0.18          |
|                                | 1800                        | 10×20                     | 1720                            | 0.037                           | 0.15          |
|                                | 2200                        | 10×20                     | 1720                            | 0.037                           | 0.15          |
|                                | 2700                        | 10×23                     | 1910                            | 0.031                           | 0.12          |
|                                | 2700                        | 12.5×16                   | 1730                            | 0.04                            | 0.12          |
|                                | 3300                        | 12.5×16                   | 1730                            | 0.04                            | 0.12          |
|                                | 3900                        | 12.5×20                   | 2160                            | 0.028                           | 0.089         |
|                                | 3900                        | 16×16                     | 1940                            | 0.042                           | 0.110         |
|                                | 4700                        | 12.5×25                   | 2650                            | 0.024                           | 0.065         |
|                                | 5600                        | 12.5×25                   | 2650                            | 0.024                           | 0.065         |
|                                | 5600                        | 12.5×30                   | 2880                            | 0.020                           | 0.065         |
|                                | 6800                        | 12.5×35                   | 3350                            | 0.017                           | 0.063         |
|                                | 6800                        | 16×20                     | 2540                            | 0.021                           | 0.060         |
|                                | 8200                        | 16×25                     | 3060                            | 0.017                           | 0.050         |
|                                | 10000                       | 16×31.5                   | 3610                            | 0.017                           | 0.044         |
|                                | 10000                       | 18×20                     | 2860                            | 0.026                           | 0.060         |
| 10                             | 100                         | 5×11                      | 210                             | 0.58                            | 2.3           |
|                                | 220                         | 5×11                      | 210                             | 0.58                            | 2.3           |
|                                | 220                         | 6.3×11                    | 340                             | 0.22                            | 0.87          |
|                                | 470                         | 6.3×11                    | 340                             | 0.22                            | 0.87          |
|                                | 680                         | 8×11.5                    | 730                             | 0.12                            | 0.48          |
|                                | 680                         | 8×16                      | 1050                            | 0.069                           | 0.27          |
|                                | 1000                        | 8×16                      | 1050                            | 0.069                           | 0.27          |
|                                | 1000                        | 10×12.5                   | 1210                            | 0.060                           | 0.24          |
|                                | 1200                        | 10×16                     | 1450                            | 0.046                           | 0.18          |
|                                | 1500                        | 8×20                      | 1650                            | 0.042                           | 0.17          |
|                                | 1500                        | 10×16                     | 1450                            | 0.046                           | 0.18          |
|                                | 1500                        | 10×20                     | 1720                            | 0.037                           | 0.15          |
|                                | 1800                        | 10×20                     | 1720                            | 0.037                           | 0.15          |
|                                | 2200                        | 10×23                     | 1910                            | 0.031                           | 0.12          |
|                                | 2200                        | 12.5×16                   | 1730                            | 0.04                            | 0.12          |

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz                    | -10°C, 100kHz |
| 10                             | 2700                        | 16×16                     | 1940                            | 0.042                           | 0.110         |
|                                | 3300                        | 12.5×20                   | 2160                            | 0.028                           | 0.089         |
|                                | 3900                        | 12.5×25                   | 2650                            | 0.024                           | 0.065         |
|                                | 4700                        | 12.5×30                   | 2880                            | 0.020                           | 0.065         |
|                                | 5600                        | 12.5×35                   | 3350                            | 0.017                           | 0.063         |
|                                | 5600                        | 16×20                     | 2540                            | 0.021                           | 0.060         |
|                                | 6800                        | 16×25                     | 3060                            | 0.017                           | 0.050         |
|                                | 6800                        | 18×20                     | 2860                            | 0.026                           | 0.060         |
|                                | 8200                        | 16×31.5                   | 3610                            | 0.017                           | 0.044         |
|                                | 8200                        | 18×25                     | 3140                            | 0.019                           | 0.045         |
|                                | 10000                       | 16×35.5                   | 4080                            | 0.015                           | 0.038         |
|                                | 10000                       | 18×31.5                   | 4170                            | 0.015                           | 0.038         |
|                                | 12000                       | 18×35.5                   | 4280                            | 0.014                           | 0.032         |
|                                | 15000                       | 18×40                     | 4550                            | 0.012                           | 0.030         |
|                                | 56                          | 5×11                      | 210                             | 0.58                            | 2.3           |
|                                | 120                         | 5×11                      | 210                             | 0.58                            | 2.3           |
| 16                             | 330                         | 6.3×11                    | 340                             | 0.22                            | 0.87          |
|                                | 470                         | 8×11.5                    | 730                             | 0.12                            | 0.48          |
|                                | 470                         | 8×16                      | 1050                            | 0.069                           | 0.27          |
|                                | 680                         | 8×16                      | 1050                            | 0.069                           | 0.27          |
|                                | 680                         | 10×12.5                   | 1210                            | 0.060                           | 0.24          |
|                                | 1000                        | 8×20                      | 1650                            | 0.042                           | 0.17          |
|                                | 1000                        | 10×16                     | 1450                            | 0.046                           | 0.18          |
|                                | 1000                        | 10×20                     | 1720                            | 0.037                           | 0.15          |
|                                | 1200                        | 10×20                     | 1720                            | 0.037                           | 0.15          |
|                                | 1500                        | 10×20                     | 1720                            | 0.037                           | 0.15          |
|                                | 1500                        | 10×23                     | 1910                            | 0.031                           | 0.12          |
|                                | 1500                        | 12.5×16                   | 1730                            | 0.040                           | 0.12          |
|                                | 1800                        | 10×23                     | 1910                            | 0.031                           | 0.12          |
|                                | 2200                        | 10×25                     | 2230                            | 0.027                           | 0.089         |
|                                | 2200                        | 12.5×20                   | 2160                            | 0.028                           | 0.089         |
|                                | 2200                        | 16×16                     | 1940                            | 0.042                           | 0.110         |
|                                | 2700                        | 12.5×25                   | 2650                            | 0.024                           | 0.065         |
|                                | 3300                        | 12.5×30                   | 2880                            | 0.020                           | 0.065         |
|                                | 3900                        | 12.5×35                   | 3350                            | 0.017                           | 0.063         |
|                                | 3900                        | 16×20                     | 2540                            | 0.021                           | 0.060         |
|                                | 4700                        | 16×25                     | 3060                            | 0.017                           | 0.050         |
|                                | 4700                        | 18×20                     | 2860                            | 0.026                           | 0.060         |
|                                | 5600                        | 16×31.5                   | 3610                            | 0.017                           | 0.044         |
|                                | 5600                        | 18×25                     | 3140                            | 0.019                           | 0.045         |
|                                | 6800                        | 16×35.5                   | 4080                            | 0.015                           | 0.038         |
|                                | 8200                        | 18×31.5                   | 4170                            | 0.015                           | 0.038         |
|                                | 10000                       | 18×35.5                   | 4280                            | 0.014                           | 0.032         |
|                                | 12000                       | 18×40                     | 4550                            | 0.012                           | 0.030         |

### ◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>RatedRipple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|--------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                | 20°C, 100kHz                    | -10°C, 100kHz |
| 25                             | 47                          | 5×11                      | 210                            | 0.58                            | 2.3           |
|                                | 100                         | 5×11                      | 210                            | 0.58                            | 2.3           |
|                                | 220                         | 6.3×11                    | 340                            | 0.22                            | 0.87          |
|                                | 330                         | 8×11.5                    | 730                            | 0.12                            | 0.48          |
|                                | 330                         | 8×16                      | 1050                           | 0.069                           | 0.27          |
|                                | 390                         | 8×16                      | 1050                           | 0.069                           | 0.27          |
|                                | 470                         | 8×16                      | 1050                           | 0.069                           | 0.27          |
|                                | 470                         | 10×12.5                   | 1210                           | 0.060                           | 0.24          |
|                                | 560                         | 8×20                      | 1650                           | 0.042                           | 0.17          |
|                                | 680                         | 10×16                     | 1450                           | 0.046                           | 0.18          |
|                                | 680                         | 10×20                     | 1720                           | 0.037                           | 0.15          |
|                                | 820                         | 10×20                     | 1720                           | 0.037                           | 0.15          |
|                                | 1000                        | 10×20                     | 1720                           | 0.037                           | 0.15          |
|                                | 1000                        | 10×23                     | 1910                           | 0.031                           | 0.12          |
|                                | 1000                        | 12.5×16                   | 1730                           | 0.040                           | 0.12          |
|                                | 1200                        | 16×16                     | 1940                           | 0.042                           | 0.11          |
|                                | 1500                        | 12.5×20                   | 2160                           | 0.028                           | 0.089         |
|                                | 1800                        | 12.5×25                   | 2650                           | 0.024                           | 0.065         |
|                                | 2200                        | 12.5×30                   | 2880                           | 0.020                           | 0.065         |
|                                | 2200                        | 16×20                     | 2540                           | 0.021                           | 0.060         |
|                                | 2700                        | 12.5×35                   | 3350                           | 0.017                           | 0.063         |
|                                | 2700                        | 16×20                     | 2540                           | 0.021                           | 0.060         |
|                                | 3300                        | 16×25                     | 3060                           | 0.017                           | 0.050         |
|                                | 3300                        | 18×20                     | 2860                           | 0.026                           | 0.060         |
|                                | 3900                        | 16×31.5                   | 3610                           | 0.017                           | 0.044         |
|                                | 3900                        | 18×25                     | 3140                           | 0.019                           | 0.045         |
|                                | 4700                        | 16×35.5                   | 4080                           | 0.015                           | 0.038         |
|                                | 4700                        | 18×31.5                   | 4170                           | 0.015                           | 0.038         |
|                                | 5600                        | 18×35.5                   | 4280                           | 0.014                           | 0.032         |
|                                | 6800                        | 18×40                     | 4550                           | 0.012                           | 0.030         |
| 35                             | 33                          | 5×11                      | 210                            | 0.58                            | 2.3           |
|                                | 56                          | 5×11                      | 210                            | 0.58                            | 2.3           |
|                                | 150                         | 8×11.5                    | 730                            | 0.12                            | 0.48          |
|                                | 220                         | 8×11.5                    | 730                            | 0.12                            | 0.48          |
|                                | 220                         | 8×16                      | 1050                           | 0.069                           | 0.27          |
|                                | 270                         | 8×16                      | 1050                           | 0.069                           | 0.27          |
|                                | 330                         | 10×12.5                   | 1210                           | 0.060                           | 0.24          |
|                                | 390                         | 8×20                      | 1650                           | 0.042                           | 0.17          |
|                                | 470                         | 10×16                     | 1450                           | 0.046                           | 0.18          |
|                                | 470                         | 10×20                     | 1720                           | 0.037                           | 0.15          |
|                                | 560                         | 10×20                     | 1720                           | 0.037                           | 0.15          |
|                                | 680                         | 10×23                     | 1910                           | 0.031                           | 0.12          |
|                                | 680                         | 12.5×16                   | 1730                           | 0.040                           | 0.12          |
|                                | 1000                        | 12.5×20                   | 2160                           | 0.028                           | 0.089         |
|                                | 1000                        | 16×16                     | 1940                           | 0.042                           | 0.110         |
|                                | 1200                        | 12.5×25                   | 2650                           | 0.024                           | 0.065         |
|                                | 1500                        | 12.5×30                   | 2880                           | 0.020                           | 0.065         |
|                                | 1800                        | 12.5×35                   | 3350                           | 0.017                           | 0.063         |
|                                | 1800                        | 16×20                     | 2540                           | 0.021                           | 0.060         |
|                                | 2200                        | 16×25                     | 3060                           | 0.017                           | 0.050         |
|                                | 2200                        | 18×20                     | 2860                           | 0.026                           | 0.060         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>RatedRipple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|--------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                | 20°C, 100kHz                    | -10°C, 100kHz |
| 35                             | 2700                        | 16×31.5                   | 3610                           | 0.017                           | 0.044         |
|                                | 2700                        | 18×25                     | 3140                           | 0.019                           | 0.045         |
|                                | 3300                        | 16×35.5                   | 4080                           | 0.015                           | 0.038         |
|                                | 3300                        | 18×31.5                   | 4170                           | 0.015                           | 0.038         |
|                                | 3900                        | 18×35.5                   | 4280                           | 0.014                           | 0.032         |
|                                | 4700                        | 18×40                     | 4550                           | 0.012                           | 0.030         |
| 50                             | 22                          | 5×11                      | 210                            | 0.58                            | 2.3           |
|                                | 56                          | 6.3×11                    | 340                            | 0.22                            | 0.87          |
|                                | 100                         | 8×11.5                    | 730                            | 0.12                            | 0.48          |
|                                | 120                         | 8×11.5                    | 730                            | 0.12                            | 0.48          |
|                                | 150                         | 8×16                      | 910                            | 0.091                           | 0.36          |
|                                | 180                         | 8×16                      | 910                            | 0.091                           | 0.36          |
|                                | 220                         | 10×12.5                   | 1050                           | 0.084                           | 0.34          |
|                                | 270                         | 10×16                     | 1220                           | 0.060                           | 0.24          |
|                                | 270                         | 10×20                     | 1440                           | 0.055                           | 0.22          |
|                                | 330                         | 10×20                     | 1440                           | 0.055                           | 0.22          |
|                                | 470                         | 10×23                     | 1690                           | 0.043                           | 0.17          |
|                                | 470                         | 12.5×16                   | 1670                           | 0.045                           | 0.15          |
|                                | 560                         | 12.5×20                   | 1950                           | 0.034                           | 0.11          |
|                                | 560                         | 16×16                     | 1830                           | 0.054                           | 0.15          |
|                                | 680                         | 12.5×25                   | 2510                           | 0.025                           | 0.083         |
|                                | 820                         | 12.5×25                   | 2510                           | 0.025                           | 0.083         |
|                                | 820                         | 12.5×30                   | 2680                           | 0.024                           | 0.077         |
|                                | 1000                        | 12.5×35                   | 2920                           | 0.021                           | 0.069         |
|                                | 1000                        | 16×20                     | 2460                           | 0.025                           | 0.075         |
|                                | 1200                        | 16×25                     | 2980                           | 0.022                           | 0.066         |
|                                | 1200                        | 18×20                     | 2490                           | 0.030                           | 0.070         |
|                                | 1500                        | 16×31.5                   | 3150                           | 0.019                           | 0.057         |
|                                | 1800                        | 16×35.5                   | 3710                           | 0.016                           | 0.048         |
|                                | 1800                        | 18×25                     | 3150                           | 0.022                           | 0.057         |
|                                | 2200                        | 18×31.5                   | 3680                           | 0.018                           | 0.046         |
|                                | 2700                        | 18×35.5                   | 3800                           | 0.014                           | 0.038         |
|                                | 3300                        | 18×40                     | 4170                           | 0.013                           | 0.033         |

## ZLH series

105°C 6000~10000時間品 小形化 長寿命 低インピーダンス品  
105°C 6000~10000 hours. Miniaturized, Long Life, Low Impedance



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                                                          |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|---------|------|-------------------------|---------------------------------------------|--------------|-----------------|------|------|--------|-------|------|------|------|------|------|--|-----------------|---|---|---|---|---|---|---|---|---|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                                                          |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3～100Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                                                          |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                                                          |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                                                          |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>(20℃, 120Hz)</td></tr><tr><td>tan δ</td><td>0.22</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.08</td><td>0.08</td><td></td></tr></table> <p>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br/>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.</p>                                                                                                                                                                                                                                            | 定格電圧(Vdc)<br>Rated Voltage    | 6.3                                                                                      | 10                  | 16                   | 25                           | 35                                                         | 50      | 63   | 80                      | 100                                         | (20℃, 120Hz) | tan δ           | 0.22 | 0.19 | 0.16   | 0.14  | 0.12 | 0.10 | 0.09 | 0.08 | 0.08 |  |                 |   |   |   |   |   |   |   |   |   |  |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10                            | 16                                                                                       | 25                  | 35                   | 50                           | 63                                                         | 80      | 100  | (20℃, 120Hz)            |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| tan δ                                                                    | 0.22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.19                          | 0.16                                                                                     | 0.14                | 0.12                 | 0.10                         | 0.09                                                       | 0.08    | 0.08 |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 耐久性<br>Endurance                                                         | <p>105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br/>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±25%以内(6.3Vdc, 10Vdc: ±30%)<br/>Within ±25% of the initial value(6.3Vdc, 10Vdc: ±30%)</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td><td>φD≤ 6.3</td><td>6000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>φD=8</td><td>8000</td></tr><tr><td></td><td></td><td>φD≥ 10</td><td>10000</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±25%以内(6.3Vdc, 10Vdc: ±30%)<br>Within ±25% of the initial value(6.3Vdc, 10Vdc: ±30%) | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | φD≤ 6.3 | 6000 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | φD=8         | 8000            |      |      | φD≥ 10 | 10000 |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±25%以内(6.3Vdc, 10Vdc: ±30%)<br>Within ±25% of the initial value(6.3Vdc, 10Vdc: ±30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ケースサイズ<br>Case Size           | 時間(hrs)<br>Time(hrs)                                                                     |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | φD≤ 6.3                       | 6000                                                                                     |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | φD=8                          | 8000                                                                                     |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | φD≥ 10                        | 10000                                                                                    |                     |                      |                              |                                                            |         |      |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>(120Hz)</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td></td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td></td></tr></table>                                                                                                                                                                                                                                                                                                 | 定格電圧(Vdc)<br>Rated Voltage    | 6.3                                                                                      | 10                  | 16                   | 25                           | 35                                                         | 50      | 63   | 80                      | 100                                         | (120Hz)      | Z(-25℃)/Z(+20℃) | 2    | 2    | 2      | 2     | 2    | 2    | 2    | 2    | 2    |  | Z(-40℃)/Z(+20℃) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |  |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10                            | 16                                                                                       | 25                  | 35                   | 50                           | 63                                                         | 80      | 100  | (120Hz)                 |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| Z(-25℃)/Z(+20℃)                                                          | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2                             | 2                                                                                        | 2                   | 2                    | 2                            | 2                                                          | 2       | 2    |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |
| Z(-40℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3                             | 3                                                                                        | 3                   | 3                    | 3                            | 3                                                          | 3       | 3    |                         |                                             |              |                 |      |      |        |       |      |      |      |      |      |  |                 |   |   |   |   |   |   |   |   |   |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | ZLH             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

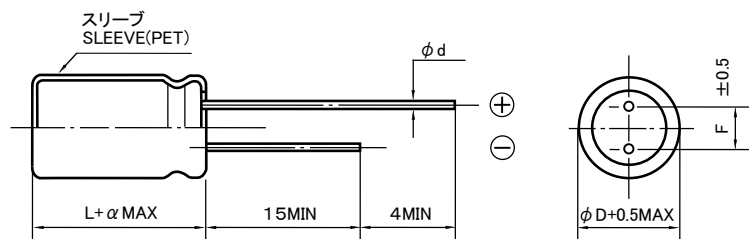
#### MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency |              | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|--------------|------|------|------|-------|
| 係数<br>Coefficient     | 8.2~33 μF    | 0.42 | 0.70 | 0.90 | 1.00  |
|                       | 47~270 μF    | 0.50 | 0.73 | 0.92 | 1.00  |
|                       | 330~680 μF   | 0.55 | 0.77 | 0.94 | 1.00  |
|                       | 820~1800 μF  | 0.60 | 0.80 | 0.96 | 1.00  |
|                       | 2200~8200 μF | 0.70 | 0.85 | 0.98 | 1.00  |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



(mm)

|          |                                                           |     |     |     |      |     |    |
|----------|-----------------------------------------------------------|-----|-----|-----|------|-----|----|
| $\phi D$ | 5                                                         | 6.3 | 8   | 10  | 12.5 | 16  | 18 |
| $\phi d$ | 0.5                                                       |     | 0.6 |     |      | 0.8 |    |
| F        | 2.0                                                       | 2.5 | 3.5 | 5.0 |      | 7.5 |    |
| $\alpha$ | $L \leq 16 : \alpha = 1.5 \quad L \geq 20 : \alpha = 2.0$ |     |     |     |      |     |    |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size φ D×L<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|------------------------------|----------------------------|----------------------------------------|---------------------------------|---------------|
|                                |                              |                            |                                        | 20°C, 100kHz                    | -10°C, 100kHz |
| 6.3                            | 220                          | 5×11                       | 345                                    | 0.22                            | 0.80          |
|                                | 470                          | 6.3×11                     | 540                                    | 0.094                           | 0.35          |
|                                | 820                          | 8×11.5                     | 945                                    | 0.056                           | 0.19          |
|                                | 1200                         | 8×16                       | 1250                                   | 0.045                           | 0.15          |
|                                | 1200                         | 10×12.5                    | 1330                                   | 0.039                           | 0.14          |
|                                | 1500                         | 8×20                       | 1500                                   | 0.029                           | 0.11          |
|                                | 1800                         | 10×16                      | 1760                                   | 0.028                           | 0.10          |
|                                | 2200                         | 10×20                      | 1960                                   | 0.020                           | 0.060         |
|                                | 2700                         | 10×23                      | 2250                                   | 0.018                           | 0.054         |
|                                | 3900                         | 12.5×20                    | 2480                                   | 0.017                           | 0.043         |
|                                | 4700                         | 12.5×25                    | 2900                                   | 0.015                           | 0.038         |
|                                | 5600                         | 12.5×30                    | 3450                                   | 0.013                           | 0.033         |
|                                | 6800                         | 16×20                      | 3250                                   | 0.015                           | 0.038         |
|                                | 6800                         | 12.5×35                    | 3570                                   | 0.012                           | 0.031         |
| 10                             | 8200                         | 16×25                      | 3630                                   | 0.013                           | 0.035         |
|                                | 150                          | 5×11                       | 345                                    | 0.22                            | 0.80          |
|                                | 330                          | 6.3×11                     | 540                                    | 0.094                           | 0.35          |
|                                | 680                          | 8×11.5                     | 945                                    | 0.056                           | 0.19          |
|                                | 1000                         | 8×16                       | 1250                                   | 0.045                           | 0.15          |
|                                | 1000                         | 10×12.5                    | 1330                                   | 0.039                           | 0.14          |
|                                | 1500                         | 8×20                       | 1500                                   | 0.029                           | 0.11          |
|                                | 1500                         | 10×16                      | 1760                                   | 0.028                           | 0.10          |
|                                | 1800                         | 10×20                      | 1960                                   | 0.020                           | 0.060         |
|                                | 2200                         | 10×23                      | 2250                                   | 0.018                           | 0.054         |
|                                | 3300                         | 12.5×20                    | 2480                                   | 0.017                           | 0.043         |
|                                | 3900                         | 12.5×25                    | 2900                                   | 0.015                           | 0.038         |
|                                | 4700                         | 12.5×30                    | 3450                                   | 0.013                           | 0.033         |
|                                | 4700                         | 16×20                      | 3250                                   | 0.015                           | 0.038         |
| 16                             | 5600                         | 12.5×35                    | 3570                                   | 0.012                           | 0.031         |
|                                | 6800                         | 16×25                      | 3630                                   | 0.013                           | 0.035         |
|                                | 100                          | 5×11                       | 345                                    | 0.22                            | 0.80          |
|                                | 220                          | 6.3×11                     | 540                                    | 0.094                           | 0.35          |
|                                | 470                          | 8×11.5                     | 945                                    | 0.056                           | 0.19          |
|                                | 680                          | 8×16                       | 1250                                   | 0.045                           | 0.15          |
|                                | 680                          | 10×12.5                    | 1330                                   | 0.039                           | 0.14          |
|                                | 1000                         | 8×20                       | 1500                                   | 0.029                           | 0.11          |
|                                | 1000                         | 10×16                      | 1760                                   | 0.028                           | 0.10          |
|                                | 1500                         | 10×20                      | 1960                                   | 0.020                           | 0.06          |
|                                | 1800                         | 10×23                      | 2250                                   | 0.018                           | 0.054         |
|                                | 2200                         | 12.5×20                    | 2480                                   | 0.017                           | 0.043         |
|                                | 2700                         | 12.5×25                    | 2900                                   | 0.015                           | 0.038         |
|                                | 3300                         | 12.5×30                    | 3450                                   | 0.013                           | 0.033         |
|                                | 3300                         | 16×20                      | 3250                                   | 0.015                           | 0.038         |
|                                | 3900                         | 12.5×35                    | 3570                                   | 0.012                           | 0.031         |
|                                | 4700                         | 16×25                      | 3630                                   | 0.013                           | 0.035         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size φ D×L<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|------------------------------|----------------------------|----------------------------------------|---------------------------------|---------------|
|                                |                              |                            |                                        | 20°C, 100kHz                    | -10°C, 100kHz |
| 25                             | 68                           | 5×11                       | 345                                    | 0.220                           | 0.80          |
|                                | 150                          | 6.3×11                     | 540                                    | 0.094                           | 0.35          |
|                                | 330                          | 8×11.5                     | 945                                    | 0.056                           | 0.19          |
|                                | 390                          | 8×16                       | 1250                                   | 0.045                           | 0.15          |
|                                | 470                          | 10×12.5                    | 1330                                   | 0.039                           | 0.14          |
|                                | 560                          | 8×20                       | 1500                                   | 0.029                           | 0.11          |
|                                | 680                          | 10×16                      | 1760                                   | 0.028                           | 0.10          |
|                                | 820                          | 10×20                      | 1960                                   | 0.020                           | 0.060         |
|                                | 1000                         | 10×23                      | 2250                                   | 0.018                           | 0.054         |
|                                | 1500                         | 12.5×20                    | 2480                                   | 0.017                           | 0.043         |
|                                | 1800                         | 12.5×25                    | 2900                                   | 0.015                           | 0.038         |
|                                | 2200                         | 12.5×30                    | 3450                                   | 0.013                           | 0.033         |
|                                | 2200                         | 16×20                      | 3250                                   | 0.015                           | 0.038         |
|                                | 2700                         | 12.5×35                    | 3570                                   | 0.012                           | 0.031         |
| 35                             | 3300                         | 16×25                      | 3630                                   | 0.013                           | 0.035         |
|                                | 47                           | 5×11                       | 345                                    | 0.220                           | 0.80          |
|                                | 100                          | 6.3×11                     | 540                                    | 0.094                           | 0.35          |
|                                | 220                          | 8×11.5                     | 945                                    | 0.056                           | 0.19          |
|                                | 270                          | 8×16                       | 1250                                   | 0.045                           | 0.15          |
|                                | 330                          | 10×12.5                    | 1330                                   | 0.039                           | 0.14          |
|                                | 390                          | 8×20                       | 1500                                   | 0.029                           | 0.11          |
|                                | 470                          | 10×16                      | 1760                                   | 0.028                           | 0.10          |
|                                | 560                          | 10×20                      | 1960                                   | 0.020                           | 0.060         |
|                                | 680                          | 10×23                      | 2250                                   | 0.018                           | 0.054         |
|                                | 1000                         | 12.5×20                    | 2480                                   | 0.017                           | 0.043         |
|                                | 1200                         | 12.5×25                    | 2900                                   | 0.015                           | 0.038         |
|                                | 1500                         | 12.5×30                    | 3450                                   | 0.013                           | 0.033         |
|                                | 1500                         | 16×20                      | 3250                                   | 0.015                           | 0.038         |
| 50                             | 1800                         | 12.5×35                    | 3570                                   | 0.012                           | 0.031         |
|                                | 2200                         | 16×25                      | 3630                                   | 0.013                           | 0.035         |
|                                | 27                           | 5×11                       | 238                                    | 0.34                            | 1.18          |
|                                | 56                           | 6.3×11                     | 385                                    | 0.14                            | 0.50          |
|                                | 100                          | 8×11.5                     | 724                                    | 0.074                           | 0.22          |
|                                | 120                          | 8×16                       | 950                                    | 0.061                           | 0.18          |
|                                | 150                          | 10×12.5                    | 979                                    | 0.061                           | 0.18          |
|                                | 180                          | 8×20                       | 1190                                   | 0.046                           | 0.14          |
|                                | 220                          | 10×16                      | 1370                                   | 0.042                           | 0.12          |
|                                | 270                          | 10×20                      | 1580                                   | 0.030                           | 0.09          |
|                                | 330                          | 10×23                      | 1870                                   | 0.028                           | 0.085         |
|                                | 470                          | 12.5×20                    | 2050                                   | 0.027                           | 0.068         |
|                                | 560                          | 12.5×25                    | 2410                                   | 0.023                           | 0.059         |
|                                | 680                          | 12.5×30                    | 2860                                   | 0.021                           | 0.052         |
|                                | 820                          | 12.5×35                    | 2960                                   | 0.019                           | 0.051         |
|                                | 820                          | 16×20                      | 2730                                   | 0.023                           | 0.059         |
|                                | 1000                         | 16×25                      | 3010                                   | 0.021                           | 0.056         |



### ◆標準品一覧表／STANDARD SIZE

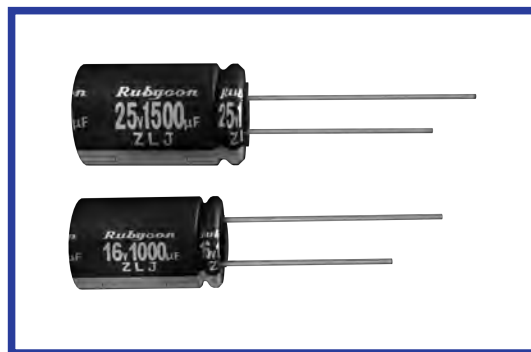
Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ D $\times$ L<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>( $\Omega$ MAX)<br>Impedance |               |
|--------------------------------|-----------------------------------|------------------------------------------|---------------------------------|-----------------------------------------|---------------|
|                                |                                   |                                          |                                 | 20°C, 100kHz                            | -10°C, 100kHz |
| 63                             | 18                                | 5 $\times$ 11                            | 173                             | 0.88                                    | 3.5           |
|                                | 47                                | 6.3 $\times$ 11                          | 278                             | 0.35                                    | 1.4           |
|                                | 82                                | 8 $\times$ 11.5                          | 525                             | 0.22                                    | 0.88          |
|                                | 100                               | 8 $\times$ 16                            | 688                             | 0.16                                    | 0.64          |
|                                | 120                               | 10 $\times$ 12.5                         | 725                             | 0.15                                    | 0.6           |
|                                | 150                               | 8 $\times$ 20                            | 861                             | 0.12                                    | 0.48          |
|                                | 180                               | 10 $\times$ 16                           | 998                             | 0.11                                    | 0.44          |
|                                | 270                               | 10 $\times$ 20                           | 1200                            | 0.078                                   | 0.31          |
|                                | 270                               | 12.5 $\times$ 16                         | 1200                            | 0.082                                   | 0.27          |
|                                | 330                               | 10 $\times$ 23                           | 1410                            | 0.069                                   | 0.28          |
|                                | 390                               | 12.5 $\times$ 20                         | 1570                            | 0.060                                   | 0.19          |
|                                | 470                               | 12.5 $\times$ 25                         | 1990                            | 0.043                                   | 0.14          |
|                                | 560                               | 12.5 $\times$ 30                         | 2410                            | 0.035                                   | 0.13          |
|                                | 560                               | 16 $\times$ 20                           | 2100                            | 0.043                                   | 0.14          |
|                                | 680                               | 12.5 $\times$ 35                         | 2620                            | 0.033                                   | 0.11          |
|                                | 820                               | 12.5 $\times$ 40                         | 2940                            | 0.027                                   | 0.09          |
|                                | 820                               | 16 $\times$ 25                           | 2730                            | 0.032                                   | 0.096         |
|                                | 820                               | 18 $\times$ 20                           | 2500                            | 0.038                                   | 0.100         |
|                                | 1200                              | 16 $\times$ 31.5                         | 2990                            | 0.024                                   | 0.068         |
|                                | 1200                              | 18 $\times$ 25                           | 2800                            | 0.031                                   | 0.084         |
|                                | 1500                              | 16 $\times$ 35.5                         | 3040                            | 0.021                                   | 0.057         |
|                                | 1500                              | 18 $\times$ 31.5                         | 3300                            | 0.025                                   | 0.068         |
|                                | 1800                              | 16 $\times$ 40                           | 3570                            | 0.019                                   | 0.057         |
|                                | 1800                              | 18 $\times$ 35.5                         | 3570                            | 0.020                                   | 0.054         |
|                                | 2200                              | 18 $\times$ 40                           | 3670                            | 0.018                                   | 0.049         |
| 80                             | 12                                | 5 $\times$ 11                            | 163                             | 1.4                                     | 5.6           |
|                                | 33                                | 6.3 $\times$ 11                          | 267                             | 0.57                                    | 2.3           |
|                                | 56                                | 8 $\times$ 11.5                          | 462                             | 0.36                                    | 1.4           |
|                                | 68                                | 8 $\times$ 16                            | 585                             | 0.25                                    | 1.0           |
|                                | 82                                | 10 $\times$ 12.5                         | 624                             | 0.23                                    | 0.96          |
|                                | 100                               | 8 $\times$ 20                            | 735                             | 0.19                                    | 0.76          |
|                                | 120                               | 10 $\times$ 16                           | 780                             | 0.17                                    | 0.72          |
|                                | 180                               | 10 $\times$ 20                           | 1040                            | 0.12                                    | 0.52          |
|                                | 180                               | 12.5 $\times$ 16                         | 975                             | 0.13                                    | 0.43          |
|                                | 220                               | 10 $\times$ 23                           | 1170                            | 0.11                                    | 0.47          |
|                                | 270                               | 12.5 $\times$ 20                         | 1430                            | 0.085                                   | 0.31          |
|                                | 330                               | 12.5 $\times$ 25                         | 1620                            | 0.060                                   | 0.23          |
|                                | 390                               | 12.5 $\times$ 30                         | 1950                            | 0.051                                   | 0.21          |
|                                | 390                               | 16 $\times$ 20                           | 1750                            | 0.058                                   | 0.21          |
|                                | 470                               | 12.5 $\times$ 35                         | 2140                            | 0.043                                   | 0.17          |
|                                | 560                               | 12.5 $\times$ 40                         | 2340                            | 0.036                                   | 0.15          |
|                                | 560                               | 16 $\times$ 25                           | 2210                            | 0.044                                   | 0.16          |
|                                | 560                               | 18 $\times$ 20                           | 1950                            | 0.054                                   | 0.18          |
|                                | 680                               | 16 $\times$ 31.5                         | 2400                            | 0.033                                   | 0.12          |
|                                | 820                               | 16 $\times$ 35.5                         | 2600                            | 0.029                                   | 0.10          |
|                                | 820                               | 18 $\times$ 25                           | 2270                            | 0.038                                   | 0.13          |
|                                | 1000                              | 16 $\times$ 40                           | 2860                            | 0.027                                   | 0.09          |
|                                | 1000                              | 18 $\times$ 31.5                         | 2470                            | 0.031                                   | 0.11          |
|                                | 1200                              | 18 $\times$ 35.5                         | 2860                            | 0.027                                   | 0.084         |
|                                | 1500                              | 18 $\times$ 40                           | 3510                            | 0.026                                   | 0.076         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ D $\times$ L<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>( $\Omega$ MAX)<br>Impedance |               |
|--------------------------------|-----------------------------------|------------------------------------------|---------------------------------|-----------------------------------------|---------------|
|                                |                                   |                                          |                                 | 20°C, 100kHz                            | -10°C, 100kHz |
| 100                            | 8.2                               | 5 $\times$ 11                            | 163                             | 1.4                                     | 5.6           |
|                                | 18                                | 6.3 $\times$ 11                          | 267                             | 0.57                                    | 2.3           |
|                                | 33                                | 8 $\times$ 11.5                          | 462                             | 0.36                                    | 1.4           |
|                                | 47                                | 8 $\times$ 16                            | 585                             | 0.25                                    | 1.0           |
|                                | 56                                | 10 $\times$ 12.5                         | 624                             | 0.23                                    | 0.96          |
|                                | 68                                | 8 $\times$ 20                            | 735                             | 0.19                                    | 0.76          |
|                                | 82                                | 10 $\times$ 16                           | 780                             | 0.17                                    | 0.72          |
|                                | 100                               | 10 $\times$ 20                           | 1040                            | 0.12                                    | 0.52          |
|                                | 100                               | 12.5 $\times$ 16                         | 975                             | 0.13                                    | 0.43          |
|                                | 120                               | 10 $\times$ 23                           | 1170                            | 0.11                                    | 0.47          |
|                                | 150                               | 12.5 $\times$ 20                         | 1430                            | 0.085                                   | 0.31          |
|                                | 220                               | 12.5 $\times$ 25                         | 1620                            | 0.060                                   | 0.23          |
|                                | 270                               | 12.5 $\times$ 30                         | 1950                            | 0.051                                   | 0.21          |
|                                | 270                               | 16 $\times$ 20                           | 1750                            | 0.058                                   | 0.21          |
|                                | 330                               | 12.5 $\times$ 35                         | 2140                            | 0.043                                   | 0.17          |
|                                | 390                               | 12.5 $\times$ 40                         | 2340                            | 0.036                                   | 0.15          |
|                                | 390                               | 16 $\times$ 25                           | 2210                            | 0.044                                   | 0.16          |
|                                | 390                               | 18 $\times$ 20                           | 1950                            | 0.054                                   | 0.18          |
|                                | 470                               | 16 $\times$ 31.5                         | 2400                            | 0.033                                   | 0.12          |
|                                | 470                               | 18 $\times$ 25                           | 2270                            | 0.038                                   | 0.13          |
|                                | 560                               | 16 $\times$ 35.5                         | 2600                            | 0.029                                   | 0.10          |
|                                | 560                               | 18 $\times$ 31.5                         | 2470                            | 0.031                                   | 0.11          |
|                                | 680                               | 16 $\times$ 40                           | 2860                            | 0.027                                   | 0.09          |
|                                | 680                               | 18 $\times$ 35.5                         | 2860                            | 0.027                                   | 0.084         |
|                                | 820                               | 18 $\times$ 40                           | 3510                            | 0.026                                   | 0.076         |

## ZLJ series

105℃ 6000～10000時間品 高リプル 長寿命 低インピーダンス品  
105℃ 6000～10000 hours. High Ripple Current, Long Life, Low Impedance



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                  |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------|------|------|------------|---------------------|------|----------|-------|------------------|-------------------|---|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                           |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3～120Vdc                                                                                                                                                                          |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                    |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage    |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | (20℃, 120Hz)                                                                                                                                                                        |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
|                                                                          | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                         | 6.3                                                                       | 10   | 16   | 25   | 35         | 50                  | 63   | 80       | 100   | 120              |                   |   |  |
|                                                                          | tan δ                                                                                                                                                                               | 0.22                                                                      | 0.19 | 0.16 | 0.14 | 0.12       | 0.10                | 0.09 | 0.08     | 0.08  | 0.08             |                   |   |  |
| 1000uFを超えるものは1000uF増す毎に上記の表に0.02を加えた値とする。                                |                                                                                                                                                                                     |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リップル重畳)印加後、下記規格を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                       | 初期値の ±25%以内<br>(6.3Vdc, 10Vdc: ±30%)<br>Within ±25% of the initial value. |      |      |      |            | ケースサイズ<br>Case Size |      |          |       |                  | 時間(hrs) Life Time |   |  |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                        | 規格値の200%以下<br>Not more than 200% of the specified value.                  |      |      |      |            | 6.3Vdc              |      | 10～50Vdc |       | 63～100Vdc 120Vdc |                   |   |  |
|                                                                          |                                                                                                                                                                                     |                                                                           |      |      |      |            | φD≤6.3              |      | 7000     |       | 6000             |                   | - |  |
|                                                                          |                                                                                                                                                                                     |                                                                           |      |      |      |            | 8X11.5              |      | 9000     |       | 8000             |                   | - |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                         |                                                                           |      |      |      | 10X12.5    |                     | 9000 |          | 9000  |                  | -                 |   |  |
|                                                                          |                                                                                                                                                                                     |                                                                           |      |      |      | 8X16, 8X20 |                     | 9000 |          | 10000 |                  | 9000 9000         |   |  |
| 10X16, 10X20, 10X25<br>φD≥12.5                                           |                                                                                                                                                                                     |                                                                           |      |      |      |            |                     |      |          |       |                  | 10000             |   |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | (120Hz)                                                                                                                                                                             |                                                                           |      |      |      |            |                     |      |          |       |                  |                   |   |  |
|                                                                          | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                         | 6.3                                                                       | 10   | 16   | 25   | 35         | 50                  | 63   | 80       | 100   | 120              |                   |   |  |
|                                                                          | Z(-25℃)/Z(+20℃)                                                                                                                                                                     | 2                                                                         | 2    | 2    | 2    | 2          | 2                   | 2    | 2        | 2     | 3                |                   |   |  |
|                                                                          | Z(-40℃)/Z(+20℃)                                                                                                                                                                     | 3                                                                         | 3    | 3    | 3    | 3          | 3                   | 3    | 3        | 3     | 4                |                   |   |  |

### ◆呼称方法／PART NUMBER

ZLJ    M    D x L  
 定格電圧 シリーズ名 静電容量 静電容量許容差 副記号 リード加工記号 ケースサイズ  
 Rated Voltage Series Capacitance Capacitance Tolerance Option Lead Forming Case Size

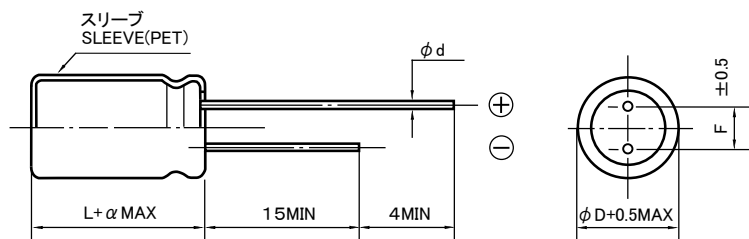
### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
|----------------------|------|------|------|-------|
| 8.2～33μF             | 0.42 | 0.70 | 0.90 | 1.00  |
| 47～270μF             | 0.50 | 0.73 | 0.92 | 1.00  |
| 330～680μF            | 0.55 | 0.77 | 0.94 | 1.00  |
| 820～1800μF           | 0.60 | 0.80 | 0.96 | 1.00  |
| 2200～8200μF          | 0.70 | 0.85 | 0.98 | 1.00  |

### ◆副記号／OPTION

ブランク : 標準品  
 EFU : 低インピーダンス仕様品  
 Blank : Standard item  
 EFU : Low Impedance items

◆寸法図／DIMENSIONS



(mm)

|          |                                                           |     |     |     |      |     |    |
|----------|-----------------------------------------------------------|-----|-----|-----|------|-----|----|
| $\phi D$ | 5                                                         | 6.3 | 8   | 10  | 12.5 | 16  | 18 |
| $\phi d$ | 0.5                                                       |     | 0.6 |     |      | 0.8 |    |
| F        | 2.0                                                       | 2.5 | 3.5 | 5.0 |      | 7.5 |    |
| $\alpha$ | $L \leq 16 : \alpha = 1.5 \quad L \geq 20 : \alpha = 2.0$ |     |     |     |      |     |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リップル<br>電流<br>Rated Ripple<br>Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|-----------------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                         | 20°C, 100kHz                    | -10°C, 100kHz |
| 6.3                            | 220                         | 5×11                      | 345                                     | 0.40                            | 1.2           |
|                                | 470                         | 6.3×11                    | 540                                     | 0.17                            | 0.51          |
|                                | 820                         | 8×11.5                    | 945                                     | 0.075                           | 0.23          |
|                                | 1000                        | 8×16                      | 1250                                    | 0.059                           | 0.18          |
|                                | 1200                        | 10×12.5                   | 1330                                    | 0.053                           | 0.16          |
|                                | 1500                        | 8×20                      | 1500                                    | 0.041                           | 0.13          |
|                                | 1800                        | 10×16                     | 1760                                    | 0.038                           | 0.12          |
|                                | 2700                        | 10×20                     | 1960                                    | 0.028                           | 0.084         |
|                                | 3300                        | 10×25                     | 2250                                    | 0.024                           | 0.072         |
|                                | 3900                        | 12.5×20                   | 2480                                    | 0.025                           | 0.075         |
|                                | 4700                        | 12.5×25                   | 2900                                    | 0.019                           | 0.057         |
|                                | 5600                        | 12.5×30                   | 3450                                    | 0.018                           | 0.054         |
|                                | 6800                        | 12.5×35                   | 3570                                    | 0.016                           | 0.048         |
|                                | 6800                        | 16×20                     | 3250                                    | 0.021                           | 0.063         |
|                                | 8200                        | 16×25                     | 3630                                    | 0.017                           | 0.051         |
| 10                             | 150                         | 5×11                      | 450                                     | 0.40                            | 1.2           |
|                                | 330                         | 6.3×11                    | 700                                     | 0.17                            | 0.51          |
|                                | 560                         | 8×11.5                    | 1200                                    | 0.075                           | 0.23          |
|                                | 680                         | 8×16                      | 1600                                    | 0.059                           | 0.18          |
|                                | 820                         | 10×12.5                   | 1700                                    | 0.053                           | 0.16          |
|                                | 1000                        | 8×20                      | 1960                                    | 0.041                           | 0.13          |
|                                | 1200                        | 10×16                     | 2000                                    | 0.038                           | 0.12          |
|                                | 1800                        | 10×20                     | 2500                                    | 0.028                           | 0.084         |
|                                | 2200                        | 10×25                     | 2900                                    | 0.024                           | 0.072         |
|                                | 2700                        | 12.5×20                   | 2600                                    | 0.025                           | 0.075         |
|                                | 3300                        | 12.5×25                   | 3200                                    | 0.019                           | 0.057         |
|                                | 4700                        | 12.5×30                   | 3660                                    | 0.018                           | 0.054         |
|                                | 4700                        | 16×20                     | 3330                                    | 0.021                           | 0.063         |
|                                | 5600                        | 12.5×35                   | 4120                                    | 0.016                           | 0.048         |
|                                | 5600                        | 16×25                     | 3810                                    | 0.017                           | 0.051         |
| 16                             | 120                         | 5×11                      | 450                                     | 0.40                            | 1.2           |
|                                | 270                         | 6.3×11                    | 700                                     | 0.17                            | 0.51          |
|                                | 470                         | 8×11.5                    | 1200                                    | 0.075                           | 0.23          |
|                                | 560                         | 8×16                      | 1600                                    | 0.059                           | 0.18          |
|                                | 680                         | 8×16                      | 1600                                    | 0.059                           | 0.18          |
|                                | 680                         | 10×12.5                   | 1700                                    | 0.053                           | 0.16          |
|                                | 820                         | 8×20                      | 1960                                    | 0.041                           | 0.13          |
|                                | 1000                        | 8×20                      | 1960                                    | 0.041                           | 0.13          |
|                                | 1000                        | 10×16                     | 2000                                    | 0.038                           | 0.12          |
|                                | 1500                        | 10×20                     | 2500                                    | 0.028                           | 0.084         |
|                                | 1800                        | 10×25                     | 2900                                    | 0.024                           | 0.072         |
|                                | 2200                        | 12.5×20                   | 2600                                    | 0.025                           | 0.075         |
|                                | 2700                        | 12.5×25                   | 3200                                    | 0.019                           | 0.057         |
|                                | 3300                        | 12.5×30                   | 3660                                    | 0.018                           | 0.054         |
|                                | 3300                        | 16×20                     | 3330                                    | 0.021                           | 0.063         |
|                                | 3900                        | 12.5×35                   | 4120                                    | 0.016                           | 0.048         |
|                                | 4700                        | 16×25                     | 3810                                    | 0.017                           | 0.051         |

| Rated Ripple Current (mA r.m.s./105°C, 100kHz) |                             |                           |                                         |                                 |               |
|------------------------------------------------|-----------------------------|---------------------------|-----------------------------------------|---------------------------------|---------------|
| 定格電圧<br>Rated Voltage<br>(Vdc)                 | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リップル<br>電流<br>Rated Ripple<br>Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|                                                |                             |                           |                                         | 20°C, 100kHz                    | -10°C, 100kHz |
| 25                                             | 68                          | 5×11                      | 450                                     | 0.40                            | 1.2           |
|                                                | 150                         | 6.3×11                    | 700                                     | 0.17                            | 0.51          |
|                                                | 330                         | 8×11.5                    | 1200                                    | 0.075                           | 0.23          |
|                                                | 390                         | 8×16                      | 1600                                    | 0.059                           | 0.18          |
|                                                | 470                         | 10×12.5                   | 1700                                    | 0.053                           | 0.16          |
|                                                | 560                         | 8×20                      | 1960                                    | 0.041                           | 0.13          |
|                                                | 680                         | 10×16                     | 2000                                    | 0.038                           | 0.12          |
|                                                | 1000                        | 10×20                     | 2500                                    | 0.028                           | 0.084         |
|                                                | 1200                        | 10×25                     | 2900                                    | 0.024                           | 0.072         |
|                                                | 1500                        | 12.5×20                   | 2600                                    | 0.025                           | 0.075         |
|                                                | 1800                        | 12.5×25                   | 3200                                    | 0.019                           | 0.057         |
|                                                | 2200                        | 12.5×30                   | 3660                                    | 0.018                           | 0.054         |
|                                                | 2200                        | 16×20                     | 3330                                    | 0.021                           | 0.063         |
|                                                | 2700                        | 12.5×35                   | 4120                                    | 0.016                           | 0.048         |
|                                                | 3300                        | 16×25                     | 3810                                    | 0.017                           | 0.051         |
| 35                                             | 47                          | 5×11                      | 450                                     | 0.40                            | 1.2           |
|                                                | 100                         | 6.3×11                    | 700                                     | 0.17                            | 0.51          |
|                                                | 180                         | 8×11.5                    | 1200                                    | 0.075                           | 0.23          |
|                                                | 220                         | 8×16                      | 1600                                    | 0.059                           | 0.18          |
|                                                | 270                         | 8×16                      | 1600                                    | 0.059                           | 0.18          |
|                                                | 270                         | 10×12.5                   | 1700                                    | 0.053                           | 0.16          |
|                                                | 330                         | 8×20                      | 1960                                    | 0.041                           | 0.13          |
|                                                | 330                         | 10×12.5                   | 1700                                    | 0.053                           | 0.16          |
|                                                | 390                         | 8×20                      | 1960                                    | 0.041                           | 0.13          |
|                                                | 390                         | 10×16                     | 2000                                    | 0.038                           | 0.12          |
|                                                | 470                         | 10×16                     | 2000                                    | 0.038                           | 0.12          |
|                                                | 560                         | 10×20                     | 2500                                    | 0.028                           | 0.084         |
|                                                | 680                         | 10×25                     | 2900                                    | 0.024                           | 0.072         |
|                                                | 820                         | 12.5×20                   | 2600                                    | 0.025                           | 0.075         |
|                                                | 1000                        | 12.5×20                   | 2600                                    | 0.025                           | 0.075         |
|                                                | 1200                        | 12.5×25                   | 3200                                    | 0.019                           | 0.057         |
|                                                | 1500                        | 12.5×30                   | 3660                                    | 0.018                           | 0.054         |
|                                                | 1500                        | 16×20                     | 3330                                    | 0.021                           | 0.063         |
|                                                | 1800                        | 12.5×35                   | 4120                                    | 0.016                           | 0.048         |
|                                                | 1800                        | 16×25                     | 3810                                    | 0.017                           | 0.051         |
| 50                                             | 27                          | 5×11                      | 310                                     | 0.48                            | 1.5           |
|                                                | 56                          | 6.3×11                    | 500                                     | 0.22                            | 0.66          |
|                                                | 100                         | 8×11.5                    | 950                                     | 0.12                            | 0.36          |
|                                                | 120                         | 8×11.5                    | 1300                                    | 0.11                            | 0.33          |
|                                                | 120                         | 8×16                      | 1230                                    | 0.082                           | 0.25          |
|                                                | 150                         | 10×12.5                   | 1280                                    | 0.073                           | 0.22          |
|                                                | 180                         | 8×16                      | 1700                                    | 0.081                           | 0.24          |
|                                                | 180                         | 8×20                      | 1580                                    | 0.058                           | 0.18          |
|                                                | 220                         | 10×12.5                   | 1700                                    | 0.071                           | 0.21          |
|                                                | 220                         | 10×16                     | 1650                                    | 0.053                           | 0.16          |
|                                                | 270                         | 8×20                      | 2100                                    | 0.058                           | 0.17          |
|                                                | 330                         | 10×16                     | 2100                                    | 0.052                           | 0.16          |

### ◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz                    | -10°C, 100kHz |
| 50                             | 330                         | 10×20                     | 2060                            | 0.038                           | 0.12          |
|                                | 390                         | 10×25                     | 2420                            | 0.032                           | 0.10          |
|                                | 470                         | 10×20                     | 2500                            | 0.037                           | 0.11          |
|                                | 470                         | 12.5×16                   | 2200                            | 0.040                           | 0.12          |
|                                | 470                         | 12.5×20                   | 2300                            | 0.032                           | 0.10          |
|                                | 560                         | 10×25                     | 2900                            | 0.031                           | 0.093         |
|                                | 680                         | 12.5×20                   | 2700                            | 0.029                           | 0.087         |
|                                | 680                         | 12.5×25                   | 2800                            | 0.025                           | 0.080         |
|                                | 820                         | 12.5×30                   | 3370                            | 0.023                           | 0.074         |
|                                | 820                         | 16×20                     | 3070                            | 0.026                           | 0.084         |
|                                | 1000                        | 12.5×25                   | 3000                            | 0.022                           | 0.066         |
|                                | 1000                        | 12.5×30                   | 3500                            | 0.020                           | 0.060         |
|                                | 1000                        | 12.5×35                   | 3810                            | 0.021                           | 0.067         |
|                                | 1000                        | 16×25                     | 3510                            | 0.022                           | 0.070         |
|                                | 1200                        | 12.5×35                   | 4000                            | 0.017                           | 0.051         |
|                                | 1200                        | 16×20                     | 3100                            | 0.023                           | 0.069         |
|                                | 1500                        | 12.5×40                   | 4500                            | 0.019                           | 0.057         |
|                                | 1500                        | 16×25                     | 3600                            | 0.018                           | 0.054         |
|                                | 1500                        | 18×20                     | 3200                            | 0.029                           | 0.087         |
|                                | 2200                        | 16×31.5                   | 4100                            | 0.018                           | 0.054         |
|                                | 2200                        | 18×25                     | 3700                            | 0.022                           | 0.066         |
|                                | 2700                        | 16×35.5                   | 4400                            | 0.016                           | 0.048         |
|                                | 2700                        | 16×40                     | 4800                            | 0.014                           | 0.042         |
|                                | 2700                        | 18×31.5                   | 4200                            | 0.019                           | 0.057         |
|                                | 3300                        | 18×35.5                   | 4600                            | 0.016                           | 0.048         |
|                                | 3900                        | 18×40                     | 5000                            | 0.014                           | 0.042         |
| 63                             | 18                          | 5×11                      | 240                             | 0.71                            | 3.2           |
|                                | 47                          | 6.3×11                    | 420                             | 0.28                            | 1.3           |
|                                | 82                          | 8×11.5                    | 720                             | 0.18                            | 0.79          |
|                                | 100                         | 8×11.5                    | 1000                            | 0.13                            | 0.39          |
|                                | 100                         | 8×16                      | 990                             | 0.13                            | 0.58          |
|                                | 120                         | 8×16                      | 1300                            | 0.095                           | 0.29          |
|                                | 120                         | 10×12.5                   | 990                             | 0.110                           | 0.44          |
|                                | 150                         | 8×20                      | 1200                            | 0.096                           | 0.43          |
|                                | 150                         | 10×12.5                   | 1300                            | 0.080                           | 0.24          |
|                                | 180                         | 8×20                      | 1600                            | 0.069                           | 0.21          |
|                                | 180                         | 10×16                     | 1200                            | 0.076                           | 0.31          |
|                                | 220                         | 10×16                     | 1700                            | 0.058                           | 0.17          |
|                                | 270                         | 10×20                     | 1570                            | 0.056                           | 0.23          |
|                                | 270                         | 12.5×16                   | 1570                            | 0.072                           | 0.27          |
|                                | 330                         | 10×20                     | 2000                            | 0.042                           | 0.13          |
|                                | 330                         | 10×25                     | 1990                            | 0.046                           | 0.19          |
|                                | 330                         | 12.5×16                   | 1900                            | 0.045                           | 0.14          |
|                                | 390                         | 10×25                     | 2400                            | 0.035                           | 0.11          |
|                                | 390                         | 12.5×20                   | 1990                            | 0.041                           | 0.13          |
|                                | 470                         | 12.5×20                   | 2400                            | 0.033                           | 0.099         |
|                                | 470                         | 12.5×25                   | 2460                            | 0.031                           | 0.093         |
|                                | 560                         | 12.5×30                   | 2760                            | 0.028                           | 0.084         |
|                                | 560                         | 16×20                     | 2380                            | 0.032                           | 0.096         |
|                                | 680                         | 12.5×25                   | 2800                            | 0.025                           | 0.075         |
|                                | 680                         | 12.5×35                   | 3040                            | 0.024                           | 0.072         |
|                                | 820                         | 12.5×30                   | 3200                            | 0.022                           | 0.066         |
|                                | 820                         | 16×20                     | 2900                            | 0.025                           | 0.075         |
|                                | 820                         | 16×25                     | 2890                            | 0.025                           | 0.075         |
|                                | 1000                        | 12.5×35                   | 3500                            | 0.018                           | 0.054         |
|                                | 1000                        | 16×25                     | 3200                            | 0.020                           | 0.060         |
|                                | 1200                        | 12.5×40                   | 3800                            | 0.021                           | 0.063         |
|                                | 1200                        | 18×20                     | 3000                            | 0.032                           | 0.096         |
|                                | 1500                        | 16×31.5                   | 3500                            | 0.020                           | 0.060         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz                    | -10°C, 100kHz |
| 63                             | 1500                        | 18×25                     | 3200                            | 0.024                           | 0.072         |
|                                | 1800                        | 16×35.5                   | 3800                            | 0.017                           | 0.051         |
|                                | 1800                        | 18×31.5                   | 3700                            | 0.020                           | 0.060         |
|                                | 2200                        | 16×40                     | 4100                            | 0.015                           | 0.045         |
|                                | 2200                        | 18×35.5                   | 3900                            | 0.017                           | 0.051         |
|                                | 2700                        | 18×40                     | 4300                            | 0.015                           | 0.045         |
|                                | 2700                        | 18×40                     | 4300                            | 0.015                           | 0.045         |
| 80                             | 12                          | 5×11                      | 235                             | 0.72                            | 3.2           |
|                                | 12                          | 5×11                      | 220                             | 1.20                            | 5.4           |
|                                | 27                          | 6.3×11                    | 390                             | 0.34                            | 1.5           |
|                                | 27                          | 6.3×11                    | 370                             | 0.46                            | 2.1           |
|                                | 47                          | 8×11.5                    | 650                             | 0.20                            | 0.9           |
|                                | 47                          | 8×11.5                    | 620                             | 0.29                            | 1.3           |
|                                | 56                          | 8×16                      | 780                             | 0.20                            | 0.9           |
|                                | 68                          | 10×12.5                   | 780                             | 0.17                            | 0.66          |
|                                | 82                          | 8×16                      | 820                             | 0.14                            | 0.63          |
|                                | 82                          | 8×20                      | 1040                            | 0.16                            | 0.66          |
|                                | 100                         | 10×12.5                   | 860                             | 0.14                            | 0.56          |
|                                | 100                         | 10×16                     | 1040                            | 0.11                            | 0.47          |
|                                | 120                         | 8×20                      | 1090                            | 0.12                            | 0.54          |
|                                | 150                         | 10×16                     | 1150                            | 0.09                            | 0.36          |
|                                | 150                         | 10×20                     | 1430                            | 0.084                           | 0.34          |
|                                | 150                         | 12.5×16                   | 1430                            | 0.110                           | 0.34          |
|                                | 180                         | 10×25                     | 1620                            | 0.069                           | 0.28          |
|                                | 220                         | 10×20                     | 1570                            | 0.068                           | 0.28          |
|                                | 220                         | 12.5×16                   | 1430                            | 0.090                           | 0.27          |
|                                | 220                         | 12.5×20                   | 1750                            | 0.062                           | 0.18          |
|                                | 270                         | 10×25                     | 1780                            | 0.055                           | 0.22          |
|                                | 270                         | 12.5×25                   | 2210                            | 0.047                           | 0.14          |
|                                | 330                         | 12.5×20                   | 1800                            | 0.048                           | 0.15          |
|                                | 330                         | 12.5×30                   | 2400                            | 0.042                           | 0.13          |
|                                | 330                         | 16×20                     | 1950                            | 0.048                           | 0.15          |
|                                | 390                         | 12.5×25                   | 2210                            | 0.038                           | 0.12          |
|                                | 390                         | 12.5×35                   | 2600                            | 0.036                           | 0.11          |
|                                | 470                         | 12.5×30                   | 2520                            | 0.033                           | 0.11          |
|                                | 470                         | 12.5×40                   | 2860                            | 0.032                           | 0.095         |
|                                | 470                         | 16×20                     | 2150                            | 0.036                           | 0.120         |
|                                | 470                         | 16×25                     | 2430                            | 0.038                           | 0.120         |
|                                | 470                         | 18×20                     | 2270                            | 0.045                           | 0.140         |
|                                | 560                         | 12.5×35                   | 2860                            | 0.026                           | 0.078         |
|                                | 560                         | 16×31.5                   | 2640                            | 0.032                           | 0.095         |
|                                | 680                         | 16×25                     | 2620                            | 0.028                           | 0.084         |
|                                | 680                         | 18×20                     | 2280                            | 0.032                           | 0.096         |
|                                | 680                         | 16×35.5                   | 2860                            | 0.029                           | 0.086         |
|                                | 680                         | 18×25                     | 2500                            | 0.036                           | 0.110         |
|                                | 820                         | 16×31.5                   | 2900                            | 0.022                           | 0.066         |
|                                | 820                         | 16×40                     | 3510                            | 0.027                           | 0.081         |
|                                | 820                         | 18×31.5                   | 2860                            | 0.030                           | 0.090         |
|                                | 1000                        | 16×35.5                   | 3150                            | 0.020                           | 0.060         |
|                                | 1000                        | 18×25                     | 2750                            | 0.027                           | 0.081         |
|                                | 1000                        | 18×35.5                   | 3510                            | 0.027                           | 0.081         |
|                                | 1200                        | 16×40                     | 3710                            | 0.018                           | 0.054         |
|                                | 1200                        | 18×31.5                   | 3150                            | 0.020                           | 0.060         |
|                                | 1200                        | 18×40                     | 3860                            | 0.026                           | 0.076         |
|                                | 1500                        | 18×35.5                   | 3710                            | 0.018                           | 0.054         |
|                                | 1800                        | 18×40                     | 4060                            | 0.017                           | 0.051         |

- : 副記号 EFUとなります。
- : OPTION has EFU

### ◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>RatedRipple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|--------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                | 20°C, 100kHz                    | -10°C, 100kHz |
| 100                            | 8.2 ●                       | 5×11                      | 235                            | 0.72                            | 3.2           |
|                                | 8.2                         | 5×11                      | 220                            | 1.2                             | 5.4           |
|                                | 18 ●                        | 6.3×11                    | 390                            | 0.34                            | 1.5           |
|                                | 18                          | 6.3×11                    | 370                            | 0.46                            | 2.1           |
|                                | 33 ●                        | 8×11.5                    | 650                            | 0.2                             | 0.9           |
|                                | 33                          | 8×11.5                    | 620                            | 0.29                            | 1.3           |
|                                | 47 ●                        | 8×16                      | 820                            | 0.14                            | 0.63          |
|                                | 47                          | 8×16                      | 780                            | 0.20                            | 0.90          |
|                                | 56 ●                        | 10×12.5                   | 860                            | 0.14                            | 0.56          |
|                                | 56                          | 10×12.5                   | 780                            | 0.17                            | 0.66          |
|                                | 68 ●                        | 8×20                      | 1090                           | 0.12                            | 0.54          |
|                                | 68                          | 8×20                      | 1040                           | 0.16                            | 0.66          |
|                                | 82 ●                        | 10×16                     | 1150                           | 0.09                            | 0.36          |
|                                | 82                          | 10×16                     | 1040                           | 0.11                            | 0.47          |
|                                | 100                         | 10×20                     | 1430                           | 0.084                           | 0.34          |
|                                | 100                         | 12.5×16                   | 1430                           | 0.11                            | 0.34          |
|                                | 120                         | 10×20                     | 1570                           | 0.068                           | 0.28          |
|                                | 120                         | 10×25                     | 1620                           | 0.069                           | 0.28          |
|                                | 120                         | 12.5×16                   | 1430                           | 0.090                           | 0.27          |
|                                | 150                         | 10×25                     | 1780                           | 0.055                           | 0.22          |
|                                | 150                         | 12.5×20                   | 1750                           | 0.062                           | 0.18          |
|                                | 180                         | 12.5×20                   | 1800                           | 0.048                           | 0.15          |
|                                | 220 ●                       | 12.5×25                   | 2210                           | 0.038                           | 0.12          |
|                                | 220                         | 12.5×25                   | 2210                           | 0.047                           | 0.14          |
|                                | 270 ●                       | 12.5×30                   | 2520                           | 0.033                           | 0.11          |
|                                | 270                         | 12.5×30                   | 2400                           | 0.042                           | 0.13          |
|                                | 270                         | 16×20                     | 1950                           | 0.048                           | 0.15          |
|                                | 330                         | 12.5×35                   | 2600                           | 0.036                           | 0.11          |
|                                | 330                         | 16×20                     | 2150                           | 0.036                           | 0.12          |
|                                | 390                         | 12.5×35                   | 2860                           | 0.026                           | 0.078         |
|                                | 390                         | 12.5×40                   | 2860                           | 0.032                           | 0.095         |
|                                | 390 ●                       | 16×25                     | 2620                           | 0.028                           | 0.084         |
|                                | 390                         | 16×25                     | 2430                           | 0.038                           | 0.120         |
|                                | 390 ●                       | 18×20                     | 2280                           | 0.032                           | 0.096         |
|                                | 390                         | 18×20                     | 2270                           | 0.045                           | 0.140         |
|                                | 470                         | 16×31.5                   | 2640                           | 0.032                           | 0.095         |
|                                | 470                         | 18×25                     | 2500                           | 0.036                           | 0.110         |
|                                | 560                         | 16×31.5                   | 2900                           | 0.022                           | 0.066         |
|                                | 560                         | 16×35.5                   | 2860                           | 0.029                           | 0.086         |
|                                | 560                         | 18×25                     | 2750                           | 0.027                           | 0.081         |
|                                | 560                         | 18×31.5                   | 2860                           | 0.030                           | 0.090         |
|                                | 680                         | 16×35.5                   | 3150                           | 0.020                           | 0.060         |
|                                | 680                         | 16×40                     | 3510                           | 0.027                           | 0.081         |
|                                | 680                         | 18×31.5                   | 3150                           | 0.020                           | 0.060         |
|                                | 680                         | 18×35.5                   | 3510                           | 0.027                           | 0.081         |
|                                | 820                         | 16×40                     | 3710                           | 0.018                           | 0.054         |
|                                | 820                         | 18×35.5                   | 3710                           | 0.018                           | 0.054         |
|                                | 820                         | 18×40                     | 3860                           | 0.026                           | 0.076         |
|                                | 1000                        | 18×40                     | 4060                           | 0.017                           | 0.051         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φDxL<br>(mm) | 定格リプル電流<br>RatedRipple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|--------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                | 20°C, 100kHz                    | -10°C, 100kHz |
| 120                            | 33                          | 8×16                      | 585                            | 0.25                            | 1.00          |
|                                | 47                          | 8×20                      | 735                            | 0.19                            | 0.76          |
|                                | 56                          | 10×16                     | 780                            | 0.17                            | 0.72          |
|                                | 82                          | 10×20                     | 1040                           | 0.12                            | 0.52          |
|                                | 100                         | 10×25                     | 1250                           | 0.10                            | 0.43          |
|                                | 120                         | 10×28                     | 1400                           | 0.09                            | 0.38          |
|                                | 120                         | 12.5×20                   | 1430                           | 0.085                           | 0.31          |
|                                | 150                         | 12.5×25                   | 1620                           | 0.21                            | 0.84          |
|                                | 180                         | 12.5×30                   | 1880                           | 0.18                            | 0.72          |
|                                | 180                         | 16×20                     | 1700                           | 0.17                            | 0.65          |
|                                | 220                         | 12.5×35                   | 2140                           | 0.15                            | 0.60          |
|                                | 270                         | 12.5×40                   | 2340                           | 0.12                            | 0.48          |
|                                | 270                         | 16×25                     | 2100                           | 0.13                            | 0.49          |
|                                | 270                         | 18×20                     | 1850                           | 0.14                            | 0.52          |
|                                | 330                         | 16×31.5                   | 2400                           | 0.10                            | 0.38          |
|                                | 390                         | 16×35.5                   | 2600                           | 0.085                           | 0.32          |
|                                | 390                         | 18×25                     | 2270                           | 0.10                            | 0.37          |
|                                | 470                         | 16×40                     | 2860                           | 0.075                           | 0.29          |
|                                | 470                         | 18×31.5                   | 2470                           | 0.08                            | 0.30          |
|                                | 560                         | 18×35.5                   | 2860                           | 0.07                            | 0.26          |
|                                | 680                         | 18×40                     | 3510                           | 0.06                            | 0.22          |

- : 副記号 EFUとなります。
- : OPTION has EFU

## ZLQ series

105°C 3000~6000時間品 超小形化 低インピーダンス品  
105°C 3000~6000 hours. UltraMiniaturized, Low Impedance



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                                                                                                    | 特性 Characteristics                                                                                                                                                                 |                                                                                           |      |      |      |                     |                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------|------|------|---------------------|----------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                                                                                                     | -40～+105℃                                                                                                                                                                          |                                                                                           |      |      |      |                     |                      |
| 定格電圧範囲<br>Rated Voltage Range                                                                                                                              | 6.3～35Vdc                                                                                                                                                                          |                                                                                           |      |      |      |                     |                      |
| 静電容量許容差<br>Capacitance Tolerance                                                                                                                           | ±20%(20℃, 120Hz)                                                                                                                                                                   |                                                                                           |      |      |      |                     |                      |
| 漏れ電流<br>Leakage Current (MAX)                                                                                                                              | I=0.03CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.03CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage   |                                                                                           |      |      |      |                     |                      |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                        | 6.3                                                                                       | 10   | 16   | 25   | 35                  |                      |
|                                                                                                                                                            | tan δ                                                                                                                                                                              | 0.22                                                                                      | 0.19 | 0.16 | 0.14 | 0.12                |                      |
| (20℃, 120Hz)                                                                                                                                               |                                                                                                                                                                                    |                                                                                           |      |      |      |                     |                      |
| 1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF. |                                                                                                                                                                                    |                                                                                           |      |      |      |                     |                      |
| 耐久性<br>Endurance                                                                                                                                           | 105℃中で右表の時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. |                                                                                           |      |      |      |                     |                      |
|                                                                                                                                                            | 静電容量変化率<br>Capacitance Change                                                                                                                                                      | 初期値の±25%以内 (6.3Vdc, 10Vdc: ±30%)<br>Within ±25% of the initial value(6.3Vdc, 10Vdc: ±30%) |      |      |      | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) |
|                                                                                                                                                            | 損失角の正接<br>Dissipation Factor                                                                                                                                                       | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                |      |      |      | φD≤ 6.3             | 3000                 |
|                                                                                                                                                            | 漏れ電流<br>Leakage Current                                                                                                                                                            | 規格値以下<br>Not more than the specified value.                                               |      |      |      | φD=8                | 4000                 |
|                                                                                                                                                            |                                                                                                                                                                                    |                                                                                           |      |      |      | φD=10               | 5000                 |
|                                                                                                                                                            |                                                                                                                                                                                    |                                                                                           |      |      |      | φD≥12.5             | 6000                 |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX)                                                                                   | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                        | 6.3                                                                                       | 10   | 16   | 25   | 35                  | (120Hz)              |
|                                                                                                                                                            | Z(-25℃)/Z(+20℃)                                                                                                                                                                    | 3                                                                                         | 2    | 2    | 2    | 2                   |                      |
|                                                                                                                                                            | Z(-40℃)/Z(+20℃)                                                                                                                                                                    | 6                                                                                         | 4    | 3    | 3    | 3                   |                      |
|                                                                                                                                                            |                                                                                                                                                                                    |                                                                                           |      |      |      |                     |                      |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | ZLQ             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

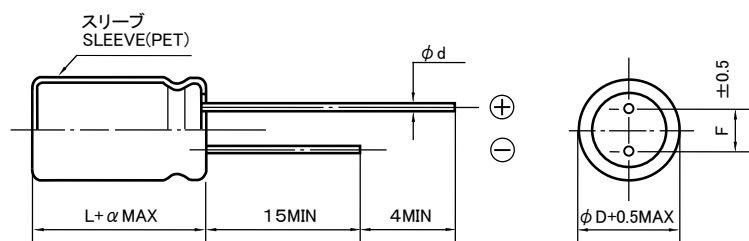
| 周波数(Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
|----------------------|------|------|------|--------|
| 係数<br>Coefficient    |      |      |      |        |
| 56~270µF             | 0.50 | 0.73 | 0.92 | 1.00   |
| 330~680µF            | 0.55 | 0.77 | 0.94 | 1.00   |
| 820~1800µF           | 0.60 | 0.80 | 0.96 | 1.00   |
| 2200~12000µF         | 0.70 | 0.85 | 0.98 | 1.00   |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve



◆寸法図／DIMENSIONS



(mm)

|          |                                                       |     |     |     |      |     |
|----------|-------------------------------------------------------|-----|-----|-----|------|-----|
| $\phi D$ | 5                                                     | 6.3 | 8   | 10  | 12.5 | 16  |
| $\phi d$ | 0.5                                                   |     | 0.6 |     |      | 0.8 |
| F        | 2.0                                                   | 2.5 | 3.5 | 5.0 |      | 7.5 |
| $\alpha$ | $L \leq 16 : \alpha = 1.5$ $L \geq 20 : \alpha = 2.0$ |     |     |     |      |     |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz                    | -10°C, 100kHz |
| 6.3                            | 270                         | 5×11                      | 400                             | 0.21                            | 0.77          |
|                                | 680                         | 6.3×11                    | 620                             | 0.092                           | 0.34          |
|                                | 1200                        | 8×11.5                    | 1060                            | 0.049                           | 0.15          |
|                                | 1500                        | 8×16                      | 1390                            | 0.038                           | 0.12          |
|                                | 1800                        | 10×12.5                   | 1470                            | 0.035                           | 0.11          |
|                                | 2200                        | 8×20                      | 1660                            | 0.027                           | 0.081         |
|                                | 2700                        | 10×16                     | 1930                            | 0.025                           | 0.075         |
|                                | 3900                        | 10×20                     | 2130                            | 0.018                           | 0.054         |
|                                | 4700                        | 10×25                     | 2500                            | 0.015                           | 0.045         |
|                                | 5600                        | 12.5×20                   | 2690                            | 0.016                           | 0.041         |
|                                | 8200                        | 12.5×25                   | 3140                            | 0.013                           | 0.033         |
|                                | 8200                        | 12.5×30                   | 3680                            | 0.012                           | 0.030         |
|                                | 10000                       | 16×20                     | 3500                            | 0.014                           | 0.035         |
|                                | 10000                       | 12.5×35                   | 3800                            | 0.010                           | 0.025         |
|                                | 12000                       | 16×25                     | 3880                            | 0.011                           | 0.028         |
| 10                             | 220                         | 5×11                      | 400                             | 0.21                            | 0.77          |
|                                | 470                         | 6.3×11                    | 620                             | 0.092                           | 0.34          |
|                                | 820                         | 8×11.5                    | 1060                            | 0.049                           | 0.15          |
|                                | 1200                        | 8×16                      | 1390                            | 0.038                           | 0.12          |
|                                | 1200                        | 10×12.5                   | 1470                            | 0.035                           | 0.11          |
|                                | 1800                        | 8×20                      | 1660                            | 0.027                           | 0.081         |
|                                | 1800                        | 10×16                     | 1930                            | 0.025                           | 0.075         |
|                                | 2700                        | 10×20                     | 2130                            | 0.018                           | 0.054         |
|                                | 3300                        | 10×25                     | 2500                            | 0.015                           | 0.045         |
|                                | 3900                        | 12.5×20                   | 2690                            | 0.016                           | 0.041         |
|                                | 5600                        | 12.5×25                   | 3140                            | 0.013                           | 0.033         |
|                                | 6800                        | 12.5×30                   | 3680                            | 0.012                           | 0.030         |
|                                | 6800                        | 16×20                     | 3500                            | 0.014                           | 0.035         |
|                                | 8200                        | 12.5×35                   | 3800                            | 0.010                           | 0.025         |
|                                | 8200                        | 16×25                     | 3880                            | 0.011                           | 0.028         |
| 16                             | 150                         | 5×11                      | 400                             | 0.21                            | 0.77          |
|                                | 330                         | 6.3×11                    | 620                             | 0.092                           | 0.34          |
|                                | 560                         | 8×11.5                    | 1060                            | 0.049                           | 0.15          |
|                                | 820                         | 8×16                      | 1390                            | 0.038                           | 0.12          |
|                                | 820                         | 10×12.5                   | 1470                            | 0.035                           | 0.11          |
|                                | 1200                        | 8×20                      | 1660                            | 0.027                           | 0.081         |
|                                | 1200                        | 10×16                     | 1930                            | 0.025                           | 0.075         |
|                                | 1800                        | 10×20                     | 2130                            | 0.018                           | 0.054         |
|                                | 2200                        | 10×25                     | 2500                            | 0.015                           | 0.045         |
|                                | 2700                        | 12.5×20                   | 2690                            | 0.016                           | 0.041         |
|                                | 3900                        | 12.5×25                   | 3140                            | 0.013                           | 0.033         |
|                                | 3900                        | 12.5×30                   | 3680                            | 0.012                           | 0.030         |
|                                | 4700                        | 16×20                     | 3500                            | 0.014                           | 0.035         |
|                                | 5600                        | 12.5×35                   | 3800                            | 0.010                           | 0.025         |
|                                | 5600                        | 16×25                     | 3880                            | 0.011                           | 0.028         |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current | インピーダンス<br>(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|---------------------------------|---------------|
|                                |                             |                           |                                 | 20°C, 100kHz                    | -10°C, 100kHz |
| 25                             | 82                          | 5×11                      | 400                             | 0.21                            | 0.77          |
|                                | 180                         | 6.3×11                    | 620                             | 0.092                           | 0.34          |
|                                | 330                         | 8×11.5                    | 1060                            | 0.049                           | 0.15          |
|                                | 470                         | 8×16                      | 1390                            | 0.038                           | 0.12          |
|                                | 560                         | 10×12.5                   | 1470                            | 0.035                           | 0.11          |
|                                | 680                         | 8×20                      | 1660                            | 0.027                           | 0.081         |
|                                | 820                         | 10×16                     | 1930                            | 0.025                           | 0.075         |
|                                | 1200                        | 10×20                     | 2130                            | 0.018                           | 0.054         |
|                                | 1500                        | 10×25                     | 2500                            | 0.015                           | 0.045         |
|                                | 1800                        | 12.5×20                   | 2690                            | 0.016                           | 0.041         |
|                                | 2200                        | 12.5×25                   | 3140                            | 0.013                           | 0.033         |
|                                | 2700                        | 12.5×30                   | 3680                            | 0.012                           | 0.030         |
|                                | 2700                        | 16×20                     | 3500                            | 0.014                           | 0.035         |
|                                | 3300                        | 12.5×35                   | 3800                            | 0.010                           | 0.025         |
|                                | 3900                        | 16×25                     | 3880                            | 0.011                           | 0.028         |
| 35                             | 56                          | 5×11                      | 400                             | 0.21                            | 0.77          |
|                                | 120                         | 6.3×11                    | 620                             | 0.092                           | 0.34          |
|                                | 220                         | 8×11.5                    | 1060                            | 0.049                           | 0.15          |
|                                | 270                         | 8×16                      | 1390                            | 0.038                           | 0.12          |
|                                | 330                         | 10×12.5                   | 1470                            | 0.035                           | 0.11          |
|                                | 390                         | 8×20                      | 1660                            | 0.027                           | 0.081         |
|                                | 470                         | 10×16                     | 1930                            | 0.025                           | 0.075         |
|                                | 680                         | 10×20                     | 2130                            | 0.018                           | 0.054         |
|                                | 820                         | 10×25                     | 2500                            | 0.015                           | 0.045         |
|                                | 1000                        | 12.5×20                   | 2690                            | 0.016                           | 0.041         |
|                                | 1500                        | 12.5×25                   | 3140                            | 0.013                           | 0.033         |
|                                | 1500                        | 12.5×30                   | 3680                            | 0.012                           | 0.030         |
|                                | 1800                        | 16×20                     | 3500                            | 0.014                           | 0.035         |
|                                | 2200                        | 12.5×35                   | 3800                            | 0.010                           | 0.025         |
|                                | 2200                        | 16×25                     | 3880                            | 0.011                           | 0.028         |

## ZLS series

105°C 6000時間品 小形化 低インピーダンス品  
Load Life : 105°C 6000 hours. Miniaturized, Low Impedance



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------|------------------------------|----------------------------------------------------------|-------------------------|---------------------------------------------|------|------|------|------|-----------------|---|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 10～35Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV以下(定格電圧印加2分後)<br>I=0.01CV MAX. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td></tr><tr><td>tan δ</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td></tr></table> <p>(20℃, 120Hz)</p> <p>1000 μFを越えるものは1000 μF増す毎に上表の値に0.02を加えた値とする。<br/>When capacitance is over 1000 μF, tan δ shall be added 0.02 to the listed value with increase of every 1000 μF.</p>                                                                                                                                                                    | 定格電圧 (Vdc)<br>Rated Voltage   | 10                                                                    | 16                           | 25                                                       | 35                      | tan δ                                       | 0.19 | 0.16 | 0.14 | 0.12 |                 |   |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 16                            | 25                                                                    | 35                           |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| tan δ                                                                    | 0.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.16                          | 0.14                                                                  | 0.12                         |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で6000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 6000 hours at 105℃, the capacitors shall meet the following requirements.<br><table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の±25%以内(10V: ±30%)<br/>Within ±25% of the initial value.(10V: ±30%)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の200%以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の±25%以内(10V: ±30%)<br>Within ±25% of the initial value.(10V: ±30%) | 損失角の正接<br>Dissipation Factor | 規格値の200%以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      |      |      |      |                 |   |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±25%以内(10V: ±30%)<br>Within ±25% of the initial value.(10V: ±30%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の200%以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                                       |                              |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> <p>(120Hz)</p>                                                                                                                                                                                                                                                                         | 定格電圧 (Vdc)<br>Rated Voltage   | 10                                                                    | 16                           | 25                                                       | 35                      | Z(-25℃)/Z(+20℃)                             | 2    | 2    | 2    | 2    | Z(-40℃)/Z(+20℃) | 3 | 3 | 3 | 3 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 16                            | 25                                                                    | 35                           |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2                             | 2                                                                     | 2                            |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3                             | 3                                                                     | 3                            |                                                          |                         |                                             |      |      |      |      |                 |   |   |   |   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | ZLS             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

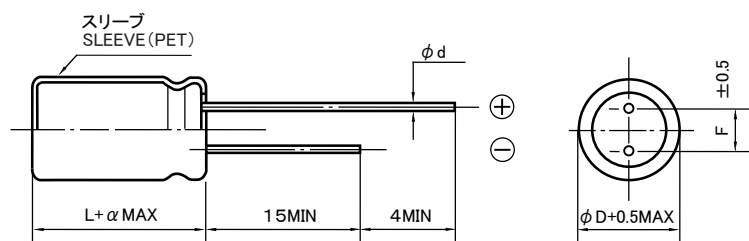
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency |              | 120  | 1k   | 10k  | 100k≤ |
|-----------------------|--------------|------|------|------|-------|
| 係数<br>Coefficient     | 220~270 μF   | 0.50 | 0.73 | 0.92 | 1.00  |
|                       | 330~680 μF   | 0.55 | 0.77 | 0.94 | 1.00  |
|                       | 820~1800 μF  | 0.60 | 0.80 | 0.96 | 1.00  |
|                       | 2200~5600 μF | 0.70 | 0.85 | 0.98 | 1.00  |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



(mm)

|          |                                                          |     |      |
|----------|----------------------------------------------------------|-----|------|
| $\phi D$ | 8                                                        | 10  | 12.5 |
| $\phi d$ | 0.6                                                      |     |      |
| F        | 3.5                                                      | 5.0 |      |
| $\alpha$ | $L \leq 16 : \alpha = 1.5$<br>$L \geq 20 : \alpha = 2.0$ |     |      |

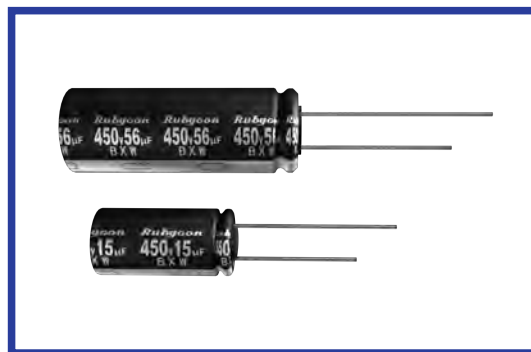
◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法 Size<br>φD × L<br>(mm) | 定格リプル電流<br>Rated ripple current | インピーダンス(Ω MAX)<br>Impedance |               |
|--------------------------------|-----------------------------|-----------------------------|---------------------------------|-----------------------------|---------------|
|                                |                             |                             |                                 | 20°C, 100kHz                | −10°C, 100kHz |
| 10                             | 680                         | 8×11.5                      | 900                             | 0.062                       | 0.19          |
|                                | 1000                        | 8×16                        | 1210                            | 0.048                       | 0.15          |
|                                | 1000                        | 10×12.5                     | 1240                            | 0.045                       | 0.14          |
|                                | 1500                        | 8×20                        | 1410                            | 0.033                       | 0.11          |
|                                | 1500                        | 10×16                       | 1650                            | 0.032                       | 0.10          |
|                                | 1800                        | 10×20                       | 1960                            | 0.020                       | 0.060         |
|                                | 2200                        | 10×23                       | 2250                            | 0.018                       | 0.054         |
|                                | 3300                        | 12.5×20                     | 2480                            | 0.017                       | 0.043         |
|                                | 3900                        | 12.5×25                     | 2900                            | 0.015                       | 0.038         |
|                                | 4700                        | 12.5×30                     | 3450                            | 0.013                       | 0.033         |
| 16                             | 5600                        | 12.5×35                     | 3570                            | 0.012                       | 0.031         |
|                                | 470                         | 8×11.5                      | 900                             | 0.062                       | 0.19          |
|                                | 680                         | 8×16                        | 1210                            | 0.048                       | 0.15          |
|                                | 680                         | 10×12.5                     | 1240                            | 0.045                       | 0.14          |
|                                | 1000                        | 8×20                        | 1410                            | 0.033                       | 0.11          |
|                                | 1000                        | 10×16                       | 1650                            | 0.032                       | 0.10          |
|                                | 1500                        | 10×20                       | 1960                            | 0.020                       | 0.060         |
|                                | 1800                        | 10×23                       | 2250                            | 0.018                       | 0.054         |
|                                | 2200                        | 10×25                       | 2500                            | 0.017                       | 0.051         |
|                                | 2200                        | 12.5×20                     | 2480                            | 0.017                       | 0.043         |
|                                | 2700                        | 12.5×25                     | 2900                            | 0.015                       | 0.038         |
|                                | 3300                        | 12.5×30                     | 3450                            | 0.013                       | 0.033         |
| 25                             | 3900                        | 12.5×35                     | 3570                            | 0.012                       | 0.031         |
|                                | 330                         | 8×11.5                      | 900                             | 0.062                       | 0.19          |
|                                | 390                         | 8×16                        | 1210                            | 0.048                       | 0.15          |
|                                | 470                         | 10×12.5                     | 1240                            | 0.045                       | 0.14          |
|                                | 560                         | 8×20                        | 1410                            | 0.033                       | 0.11          |
|                                | 680                         | 10×16                       | 1650                            | 0.032                       | 0.10          |
|                                | 820                         | 10×20                       | 1960                            | 0.020                       | 0.060         |
|                                | 1000                        | 10×20                       | 1960                            | 0.020                       | 0.060         |
|                                | 1000                        | 10×23                       | 2250                            | 0.018                       | 0.054         |
|                                | 1500                        | 12.5×20                     | 2480                            | 0.017                       | 0.043         |
|                                | 1800                        | 12.5×25                     | 2900                            | 0.015                       | 0.038         |
|                                | 2200                        | 12.5×30                     | 3450                            | 0.013                       | 0.033         |
| 35                             | 2700                        | 12.5×35                     | 3570                            | 0.012                       | 0.031         |
|                                | 220                         | 8×11.5                      | 900                             | 0.062                       | 0.19          |
|                                | 270                         | 8×16                        | 1210                            | 0.048                       | 0.15          |
|                                | 330                         | 10×12.5                     | 1240                            | 0.045                       | 0.14          |
|                                | 390                         | 8×20                        | 1410                            | 0.033                       | 0.11          |
|                                | 470                         | 10×16                       | 1650                            | 0.032                       | 0.100         |
|                                | 560                         | 10×20                       | 1960                            | 0.020                       | 0.060         |
|                                | 680                         | 10×23                       | 2250                            | 0.018                       | 0.054         |
|                                | 1000                        | 12.5×20                     | 2480                            | 0.017                       | 0.043         |
|                                | 1200                        | 12.5×25                     | 2900                            | 0.015                       | 0.038         |
|                                | 1500                        | 12.5×30                     | 3450                            | 0.013                       | 0.033         |
|                                | 1800                        | 12.5×35                     | 3570                            | 0.012                       | 0.031         |

## BXW series

105℃長寿命(10000~12000時間)小形化品 -40℃対応  
105℃ 10000~12000 hours, Miniaturized, -40℃~105℃



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|--------|-------|-------------------------|---------------------------------------------|--------|-------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～400</td><td>420, 450</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 160～400                                           | 420, 450            | tan δ                | 0.20                         | 0.25                                                       |        |       |                         |                                             |        |       |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 420, 450                      |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.25                          |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 耐久性<br>Endurance                                                         | <p>105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br/>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td><td>L ≤ 20</td><td>10000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>L ≥ 25</td><td>12000</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | L ≤ 20 | 10000 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | L ≥ 25 | 12000 |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ケースサイズ<br>Case Size           | 時間(hrs)<br>Time(hrs)                              |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | L ≤ 20                        | 10000                                             |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | L ≥ 25                        | 12000                                             |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～250</td><td>350, 400</td><td>420, 450</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>5</td><td>6</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>6</td><td>6</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                        | 定格電圧 (Vdc)<br>Rated Voltage   | 160～250                                           | 350, 400            | 420, 450             | Z(-25℃)/Z(+20℃)              | 3                                                          | 5      | 6     | Z(-40℃)/Z(+20℃)         | 6                                           | 6      | 10    |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 350, 400                      | 420, 450                                          |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5                             | 6                                                 |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |
| Z(-40℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6                             | 10                                                |                     |                      |                              |                                                            |        |       |                         |                                             |        |       |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | BXW             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 60(50)     | 120  | 500  | 1k   | 10k  | 100k ≤ |
|----------------------|------------|------|------|------|------|--------|
| 係数<br>Coefficient    | 10~82 μF   | 0.80 | 1.00 | 1.30 | 1.50 | 2.10   |
|                      | 100~220 μF | 0.80 | 1.00 | 1.30 | 1.50 | 2.00   |
|                      | 270~820 μF | 0.80 | 1.00 | 1.30 | 1.50 | 1.90   |

### ◆副記号／OPTION

EFR : PETスリーブ PET Sleeve

Technical drawing of a PET sleeve (スリーブ SLEEVE(PET)). The drawing shows a side view and a cross-sectional view. The side view indicates a length of  $L + \alpha \text{ MAX}$  for the main body, a minimum thickness of 15MIN, and a minimum length of 4MIN for the flange. The flange has a diameter of  $\phi d$ . The cross-sectional view shows a diameter of  $\phi D + 0.5 \text{ MAX}$  and a thickness of  $\pm 0.5$ . The drawing also includes a note  $\oplus$  and  $\ominus$  indicating a tolerance or specification.

|          | (mm) |      |      |    |    |
|----------|------|------|------|----|----|
| $\phi D$ | 10   | 12.5 | 14.5 | 16 | 18 |
| $\phi d$ | 0.6  |      | 0.8  |    |    |
| F        | 5.0  |      | 7.5  |    |    |
| $\alpha$ | 2.0  |      |      |    |    |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φDxL (mm) | 定格リップル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------|---------------------------|----------------------------------|--------|
|                                |                             |                           | 120Hz                            | 100kHz |
| 160                            | 47                          | 10×16                     | 0.260                            | 0.650  |
|                                | 68                          | 10×20                     | 0.320                            | 0.800  |
|                                | 82                          | 16×16                     | 0.540                            | 1.350  |
|                                | 100                         | 10×25                     | 0.530                            | 1.193  |
|                                | 100                         | 12.5×20                   | 0.600                            | 1.350  |
|                                | 100                         | 18×16                     | 0.690                            | 1.553  |
|                                | 120                         | 10×30                     | 0.620                            | 1.395  |
|                                | 150                         | 10×35                     | 0.700                            | 1.575  |
|                                | 150                         | 12.5×25                   | 0.730                            | 1.643  |
|                                | 150                         | 14.5×20                   | 0.800                            | 1.800  |
|                                | 180                         | 10×40                     | 0.800                            | 1.800  |
|                                | 180                         | 12.5×30                   | 0.870                            | 1.958  |
|                                | 180                         | 16×20                     | 0.800                            | 1.800  |
|                                | 220                         | 10×50                     | 1.000                            | 2.250  |
|                                | 220                         | 12.5×35                   | 1.000                            | 2.250  |
|                                | 220                         | 14.5×25                   | 0.890                            | 2.003  |
|                                | 220                         | 18×20                     | 0.990                            | 2.228  |
|                                | 270                         | 12.5×40                   | 1.120                            | 2.240  |
|                                | 270                         | 14.5×30                   | 1.100                            | 2.200  |
|                                | 270                         | 16×25                     | 1.000                            | 2.000  |
|                                | 330                         | 12.5×45                   | 1.240                            | 2.480  |
|                                | 330                         | 14.5×35                   | 1.220                            | 2.440  |
|                                | 330                         | 16×30                     | 1.200                            | 2.400  |
|                                | 330                         | 18×25                     | 1.180                            | 2.360  |
|                                | 390                         | 14.5×40                   | 1.380                            | 2.760  |
|                                | 390                         | 16×35                     | 1.380                            | 2.760  |
|                                | 470                         | 14.5×45                   | 1.520                            | 3.040  |
|                                | 470                         | 16×40                     | 1.550                            | 3.100  |
| 470                            | 18×30                       | 1.550                     | 3.100                            |        |
| 560                            | 16×45                       | 1.760                     | 3.520                            |        |
| 560                            | 18×35                       | 1.740                     | 3.480                            |        |
| 680                            | 18×40                       | 2.000                     | 4.000                            |        |
| 820                            | 18×50                       | 2.230                     | 4.460                            |        |
| 200                            | 33                          | 10×16                     | 0.260                            | 0.650  |
|                                | 47                          | 10×20                     | 0.320                            | 0.800  |
|                                | 56                          | 16×16                     | 0.540                            | 1.350  |
|                                | 68                          | 10×25                     | 0.430                            | 1.075  |
|                                | 68                          | 12.5×20                   | 0.540                            | 1.350  |
|                                | 82                          | 10×30                     | 0.500                            | 1.250  |
|                                | 82                          | 18×16                     | 0.620                            | 1.550  |
|                                | 100                         | 10×35                     | 0.640                            | 1.440  |
|                                | 100                         | 14.5×20                   | 0.580                            | 1.305  |
|                                | 120                         | 10×40                     | 0.740                            | 1.665  |
|                                | 120                         | 12.5×25                   | 0.650                            | 1.463  |
|                                | 120                         | 16×20                     | 0.800                            | 1.800  |
|                                | 150                         | 10×45                     | 0.780                            | 1.755  |
|                                | 150                         | 12.5×30                   | 0.800                            | 1.800  |
|                                | 150                         | 14.5×25                   | 0.790                            | 1.778  |
|                                | 180                         | 12.5×35                   | 0.920                            | 2.070  |
|                                | 180                         | 14.5×30                   | 0.950                            | 2.138  |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φDxL (mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|--------|
|                                |                             |                           | 120Hz                           | 100kHz |
| 200                            | 180                         | 16×25                     | 0.900                           | 2.025  |
|                                | 180                         | 18×20                     | 1.000                           | 2.250  |
|                                | 220                         | 12.5×40                   | 1.050                           | 2.363  |
|                                | 220                         | 14.5×35                   | 1.090                           | 2.453  |
|                                | 220                         | 16×30                     | 1.080                           | 2.430  |
|                                | 270                         | 12.5×50                   | 1.260                           | 2.520  |
|                                | 270                         | 14.5×40                   | 1.260                           | 2.520  |
|                                | 270                         | 16×30                     | 1.180                           | 2.360  |
|                                | 270                         | 18×25                     | 1.100                           | 2.200  |
|                                | 330                         | 14.5×45                   | 1.370                           | 2.740  |
|                                | 330                         | 16×40                     | 1.430                           | 2.860  |
|                                | 330                         | 18×30                     | 1.300                           | 2.600  |
|                                | 390                         | 14.5×50                   | 1.480                           | 2.960  |
|                                | 390                         | 16×45                     | 1.550                           | 3.100  |
|                                | 390                         | 18×35                     | 1.430                           | 2.860  |
|                                | 470                         | 16×50                     | 1.680                           | 3.360  |
|                                | 470                         | 18×40                     | 1.620                           | 3.240  |
| 560                            | 18×45                       | 1.770                     | 3.540                           |        |
| 220                            | 33                          | 10×16                     | 0.240                           | 0.600  |
|                                | 47                          | 10×20                     | 0.300                           | 0.750  |
|                                | 56                          | 10×25                     | 0.400                           | 1.000  |
|                                | 68                          | 12.5×20                   | 0.480                           | 1.200  |
|                                | 82                          | 10×30                     | 0.500                           | 1.250  |
|                                | 100                         | 10×35                     | 0.640                           | 1.440  |
|                                | 100                         | 12.5×25                   | 0.620                           | 1.395  |
|                                | 100                         | 14.5×20                   | 0.600                           | 1.350  |
|                                | 120                         | 10×45                     | 0.750                           | 1.688  |
|                                | 120                         | 12.5×30                   | 0.740                           | 1.665  |
|                                | 120                         | 14.5×25                   | 0.750                           | 1.688  |
|                                | 120                         | 16×20                     | 0.680                           | 1.530  |
|                                | 150                         | 12.5×35                   | 0.880                           | 1.980  |
|                                | 150                         | 18×20                     | 0.830                           | 1.868  |
|                                | 180                         | 12.5×40                   | 1.020                           | 2.295  |
|                                | 180                         | 14.5×30                   | 0.910                           | 2.048  |
|                                | 180                         | 16×25                     | 0.900                           | 2.025  |
|                                | 220                         | 12.5×45                   | 1.050                           | 2.363  |
|                                | 220                         | 14.5×35                   | 1.040                           | 2.340  |
|                                | 220                         | 16×30                     | 1.030                           | 2.318  |
|                                | 220                         | 18×25                     | 0.990                           | 2.228  |
|                                | 270                         | 14.5×45                   | 1.300                           | 2.600  |
|                                | 270                         | 16×35                     | 1.190                           | 2.380  |
|                                | 270                         | 18×30                     | 1.170                           | 2.340  |
|                                | 330                         | 14.5×50                   | 1.410                           | 2.820  |
|                                | 330                         | 16×40                     | 1.360                           | 2.720  |
|                                | 330                         | 18×35                     | 1.350                           | 2.700  |
|                                | 390                         | 16×45                     | 1.480                           | 2.960  |
|                                | 390                         | 18×40                     | 1.550                           | 3.100  |
|                                | 470                         | 18×45                     | 1.690                           | 3.380  |
| 560                            | 18×50                       | 1.800                     | 3.600                           |        |

### ◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>$\phi$ DxL (mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------------|---------------------------------|---------------------------------|--------|
|                                |                                   |                                 | 120Hz                           | 100kHz |
| 250                            | 27                                | 10×16                           | 0.260                           | 0.650  |
|                                | 39                                | 10×20                           | 0.320                           | 0.800  |
|                                | 47                                | 10×25                           | 0.390                           | 0.975  |
|                                | 47                                | 16×16                           | 0.540                           | 1.350  |
|                                | 56                                | 12.5×20                         | 0.540                           | 1.350  |
|                                | 56                                | 18×16                           | 0.620                           | 1.550  |
|                                | 68                                | 10×30                           | 0.500                           | 1.250  |
|                                | 82                                | 10×35                           | 0.570                           | 1.425  |
|                                | 82                                | 12.5×25                         | 0.570                           | 1.425  |
|                                | 82                                | 14.5×20                         | 0.500                           | 1.250  |
|                                | 100                               | 10×45                           | 0.720                           | 1.620  |
|                                | 100                               | 12.5×30                         | 0.690                           | 1.553  |
|                                | 100                               | 16×20                           | 0.800                           | 1.800  |
|                                | 120                               | 10×50                           | 0.780                           | 1.755  |
|                                | 120                               | 12.5×35                         | 0.790                           | 1.778  |
|                                | 120                               | 14.5×25                         | 0.750                           | 1.688  |
|                                | 120                               | 18×20                           | 1.000                           | 2.250  |
|                                | 150                               | 12.5×40                         | 0.920                           | 2.070  |
|                                | 150                               | 14.5×30                         | 0.830                           | 1.868  |
|                                | 150                               | 16×25                           | 0.840                           | 1.890  |
|                                | 180                               | 12.5×45                         | 0.970                           | 2.183  |
|                                | 180                               | 14.5×35                         | 0.960                           | 2.160  |
|                                | 180                               | 16×30                           | 0.950                           | 2.138  |
|                                | 180                               | 18×25                           | 0.920                           | 2.070  |
|                                | 220                               | 14.5×40                         | 1.110                           | 2.498  |
|                                | 220                               | 16×35                           | 1.100                           | 2.475  |
|                                | 220                               | 18×30                           | 1.100                           | 2.475  |
|                                | 270                               | 14.5×50                         | 1.300                           | 2.600  |
|                                | 270                               | 16×40                           | 1.270                           | 2.540  |
|                                | 270                               | 18×35                           | 1.260                           | 2.520  |
|                                | 330                               | 16×50                           | 1.480                           | 2.960  |
|                                | 330                               | 18×40                           | 1.450                           | 2.900  |
|                                | 390                               | 18×45                           | 1.590                           | 3.180  |
|                                | 470                               | 18×50                           | 1.830                           | 3.660  |
| 350                            | 18                                | 10×16                           | 0.160                           | 0.400  |
|                                | 22                                | 10×20                           | 0.200                           | 0.500  |
|                                | 27                                | 16×16                           | 0.310                           | 0.775  |
|                                | 33                                | 10×25                           | 0.330                           | 0.825  |
|                                | 33                                | 12.5×20                         | 0.340                           | 0.850  |
|                                | 33                                | 18×16                           | 0.380                           | 0.950  |
|                                | 39                                | 10×30                           | 0.390                           | 0.975  |
|                                | 47                                | 10×35                           | 0.450                           | 1.125  |
|                                | 47                                | 12.5×25                         | 0.450                           | 1.125  |
|                                | 47                                | 14.5×20                         | 0.420                           | 1.050  |
|                                | 56                                | 10×40                           | 0.520                           | 1.300  |
|                                | 56                                | 12.5×30                         | 0.550                           | 1.375  |
|                                | 56                                | 16×20                           | 0.480                           | 1.200  |
|                                | 68                                | 10×50                           | 0.600                           | 1.500  |
|                                | 68                                | 12.5×35                         | 0.610                           | 1.525  |
|                                | 68                                | 14.5×25                         | 0.560                           | 1.400  |
|                                | 82                                | 12.5×40                         | 0.710                           | 1.775  |
|                                | 82                                | 14.5×30                         | 0.670                           | 1.675  |
|                                | 82                                | 16×25                           | 0.650                           | 1.625  |
|                                | 82                                | 18×20                           | 0.520                           | 1.300  |
|                                | 100                               | 12.5×45                         | 0.790                           | 1.778  |
|                                | 100                               | 14.5×35                         | 0.780                           | 1.755  |
|                                | 100                               | 16×30                           | 0.770                           | 1.733  |
|                                | 100                               | 18×25                           | 0.760                           | 1.710  |
|                                | 120                               | 12.5×50                         | 0.850                           | 1.913  |
|                                | 120                               | 14.5×40                         | 0.900                           | 2.025  |

| Rated Ripple Current (A r.m.s./105°C) |                                   |                                 |                                 |        |
|---------------------------------------|-----------------------------------|---------------------------------|---------------------------------|--------|
| 定格電圧<br>Rated Voltage<br>(Vdc)        | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>$\phi$ DxL (mm) | 定格リプル電流<br>Rated Ripple Current |        |
|                                       |                                   |                                 | 120Hz                           | 100kHz |
| 350                                   | 120                               | 16×35                           | 0.890                           | 2.003  |
|                                       | 150                               | 14.5×45                         | 0.970                           | 2.183  |
|                                       | 150                               | 16×40                           | 1.000                           | 2.250  |
|                                       | 150                               | 18×30                           | 0.900                           | 2.025  |
|                                       | 180                               | 16×45                           | 1.120                           | 2.520  |
|                                       | 180                               | 18×35                           | 1.040                           | 2.340  |
|                                       | 220                               | 18×40                           | 1.200                           | 2.700  |
|                                       | 270                               | 18×50                           | 1.400                           | 2.800  |
|                                       | 12                                | 10×16                           | 0.160                           | 0.400  |
|                                       | 18                                | 10×20                           | 0.220                           | 0.550  |
| 400                                   | 18                                | 16×16                           | 0.230                           | 0.575  |
|                                       | 22                                | 10×25                           | 0.240                           | 0.600  |
|                                       | 27                                | 10×25                           | 0.290                           | 0.725  |
|                                       | 27                                | 12.5×20                         | 0.340                           | 0.850  |
|                                       | 27                                | 18×16                           | 0.380                           | 0.950  |
|                                       | 33                                | 10×30                           | 0.340                           | 0.850  |
|                                       | 39                                | 10×35                           | 0.390                           | 0.975  |
|                                       | 39                                | 12.5×25                         | 0.390                           | 0.975  |
|                                       | 39                                | 14.5×20                         | 0.360                           | 0.900  |
|                                       | 47                                | 10×40                           | 0.440                           | 1.100  |
|                                       | 47                                | 12.5×30                         | 0.455                           | 1.138  |
|                                       | 47                                | 16×20                           | 0.470                           | 1.175  |
|                                       | 56                                | 10×45                           | 0.500                           | 1.250  |
|                                       | 56                                | 12.5×30                         | 0.495                           | 1.238  |
|                                       | 56                                | 12.5×35                         | 0.525                           | 1.313  |
|                                       | 56                                | 14.5×25                         | 0.495                           | 1.238  |
|                                       | 56                                | 16×20                           | 0.480                           | 1.200  |
|                                       | 56                                | 18×20                           | 0.520                           | 1.300  |
|                                       | 68                                | 12.5×35                         | 0.570                           | 1.425  |
|                                       | 68                                | 12.5×40                         | 0.600                           | 1.500  |
|                                       | 68                                | 14.5×30                         | 0.585                           | 1.463  |
|                                       | 68                                | 16×25                           | 0.570                           | 1.425  |
|                                       | 68                                | 18×20                           | 0.530                           | 1.325  |
|                                       | 82                                | 12.5×40                         | 0.650                           | 1.625  |
|                                       | 82                                | 12.5×45                         | 0.680                           | 1.700  |
|                                       | 82                                | 14.5×35                         | 0.670                           | 1.675  |
|                                       | 82                                | 16×30                           | 0.670                           | 1.675  |
|                                       | 82                                | 18×25                           | 0.640                           | 1.600  |
|                                       | 100                               | 12.5×50                         | 0.760                           | 1.710  |
|                                       | 100                               | 14.5×40                         | 0.760                           | 1.710  |
|                                       | 100                               | 14.5×45                         | 0.785                           | 1.766  |
|                                       | 100                               | 16×30                           | 0.710                           | 1.598  |
|                                       | 100                               | 16×35                           | 0.760                           | 1.710  |
|                                       | 100                               | 18×25                           | 0.710                           | 1.598  |
|                                       | 120                               | 14.5×45                         | 0.840                           | 1.890  |
|                                       | 120                               | 14.5×50                         | 0.875                           | 1.969  |
|                                       | 120                               | 16×35                           | 0.810                           | 1.823  |
|                                       | 120                               | 16×40                           | 0.860                           | 1.935  |
|                                       | 120                               | 18×30                           | 0.840                           | 1.890  |
|                                       | 120                               | 18×35                           | 0.870                           | 1.958  |
|                                       | 150                               | 16×45                           | 0.950                           | 2.138  |
|                                       | 150                               | 16×50                           | 0.995                           | 2.239  |
|                                       | 150                               | 18×35                           | 0.920                           | 2.070  |
|                                       | 150                               | 18×40                           | 0.985                           | 2.216  |
|                                       | 180                               | 16×50                           | 1.070                           | 2.408  |
|                                       | 180                               | 18×40                           | 1.040                           | 2.340  |
|                                       | 180                               | 18×45                           | 1.095                           | 2.464  |
|                                       | 220                               | 18×50                           | 1.220                           | 2.745  |



### ◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>$\phi$ DxL (mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------------|---------------------------------|---------------------------------|--------|
|                                |                                   |                                 | 120Hz                           | 100kHz |
| 420                            | 15                                | 10×20                           | 0.190                           | 0.475  |
|                                | 18                                | 10×25                           | 0.230                           | 0.575  |
|                                | 22                                | 10×25                           | 0.250                           | 0.625  |
|                                | 27                                | 10×30                           | 0.290                           | 0.725  |
|                                | 27                                | 12.5×20                         | 0.300                           | 0.750  |
|                                | 27                                | 12.5×25                         | 0.340                           | 0.850  |
|                                | 33                                | 10×35                           | 0.340                           | 0.850  |
|                                | 33                                | 12.5×25                         | 0.350                           | 0.875  |
|                                | 33                                | 12.5×30                         | 0.400                           | 1.000  |
|                                | 33                                | 14.5×20                         | 0.350                           | 0.875  |
|                                | 39                                | 10×40                           | 0.390                           | 0.975  |
|                                | 39                                | 14.5×25                         | 0.435                           | 1.088  |
|                                | 39                                | 16×20                           | 0.400                           | 1.000  |
|                                | 47                                | 10×45                           | 0.440                           | 1.100  |
|                                | 47                                | 12.5×30                         | 0.440                           | 1.100  |
|                                | 47                                | 12.5×35                         | 0.505                           | 1.263  |
|                                | 47                                | 14.5×25                         | 0.450                           | 1.125  |
|                                | 47                                | 16×25                           | 0.440                           | 1.100  |
|                                | 56                                | 12.5×35                         | 0.510                           | 1.275  |
|                                | 56                                | 12.5×40                         | 0.570                           | 1.425  |
|                                | 56                                | 14.5×30                         | 0.560                           | 1.400  |
|                                | 56                                | 16×25                           | 0.510                           | 1.275  |
|                                | 56                                | 18×20                           | 0.480                           | 1.200  |
|                                | 68                                | 12.5×45                         | 0.600                           | 1.500  |
|                                | 68                                | 12.5×50                         | 0.670                           | 1.675  |
|                                | 68                                | 14.5×35                         | 0.640                           | 1.600  |
|                                | 68                                | 16×30                           | 0.560                           | 1.400  |
|                                | 68                                | 18×25                           | 0.615                           | 1.538  |
|                                | 82                                | 12.5×50                         | 0.690                           | 1.725  |
|                                | 82                                | 14.5×40                         | 0.680                           | 1.700  |
|                                | 82                                | 14.5×45                         | 0.750                           | 1.875  |
|                                | 82                                | 16×30                           | 0.640                           | 1.600  |
|                                | 82                                | 16×35                           | 0.690                           | 1.725  |
|                                | 82                                | 18×25                           | 0.640                           | 1.600  |
|                                | 82                                | 18×30                           | 0.730                           | 1.825  |
|                                | 100                               | 14.5×45                         | 0.790                           | 1.778  |
|                                | 100                               | 14.5×50                         | 0.845                           | 1.901  |
|                                | 100                               | 16×35                           | 0.730                           | 1.643  |
|                                | 100                               | 16×40                           | 0.800                           | 1.800  |
|                                | 100                               | 18×30                           | 0.780                           | 1.755  |
|                                | 100                               | 18×35                           | 0.835                           | 1.879  |
|                                | 120                               | 16×40                           | 0.840                           | 1.890  |
|                                | 120                               | 16×45                           | 0.920                           | 2.070  |
|                                | 120                               | 18×35                           | 0.850                           | 1.913  |
|                                | 120                               | 18×40                           | 0.930                           | 2.093  |
|                                | 150                               | 16×50                           | 0.940                           | 2.115  |
|                                | 150                               | 18×40                           | 1.000                           | 2.250  |
|                                | 150                               | 18×45                           | 1.060                           | 2.385  |
|                                | 180                               | 18×45                           | 1.100                           | 2.475  |
| 450                            | 10                                | 10×16                           | 0.130                           | 0.325  |
|                                | 15                                | 10×20                           | 0.190                           | 0.475  |
|                                | 15                                | 16×16                           | 0.210                           | 0.525  |
|                                | 18                                | 10×25                           | 0.230                           | 0.575  |
|                                | 22                                | 10×30                           | 0.270                           | 0.675  |
|                                | 22                                | 12.5×20                         | 0.280                           | 0.700  |
|                                | 22                                | 18×16                           | 0.340                           | 0.850  |
|                                | 27                                | 10×35                           | 0.320                           | 0.800  |
|                                | 27                                | 12.5×25                         | 0.340                           | 0.850  |
|                                | 27                                | 14.5×20                         | 0.335                           | 0.838  |
|                                | 33                                | 10×40                           | 0.360                           | 0.900  |

Rated Ripple Current (A r.m.s./105°C)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>$\phi$ DxL (mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------------|---------------------------------|---------------------------------|--------|
|                                |                                   |                                 | 120Hz                           | 100kHz |
| 450                            | 33                                | 12.5×25                         | 0.360                           | 0.900  |
|                                | 33                                | 12.5×30                         | 0.400                           | 1.000  |
|                                | 33                                | 14.5×25                         | 0.400                           | 1.000  |
|                                | 39                                | 10×45                           | 0.410                           | 1.025  |
|                                | 39                                | 12.5×30                         | 0.430                           | 1.075  |
|                                | 39                                | 12.5×35                         | 0.460                           | 1.150  |
|                                | 39                                | 14.5×25                         | 0.430                           | 1.075  |
|                                | 39                                | 16×20                           | 0.400                           | 1.000  |
|                                | 47                                | 12.5×35                         | 0.480                           | 1.200  |
|                                | 47                                | 12.5×40                         | 0.525                           | 1.313  |
|                                | 47                                | 14.5×30                         | 0.515                           | 1.288  |
|                                | 47                                | 16×25                           | 0.500                           | 1.250  |
|                                | 47                                | 18×20                           | 0.460                           | 1.150  |
|                                | 56                                | 12.5×40                         | 0.540                           | 1.350  |
|                                | 56                                | 12.5×45                         | 0.590                           | 1.475  |
|                                | 56                                | 14.5×30                         | 0.540                           | 1.350  |
|                                | 56                                | 14.5×35                         | 0.580                           | 1.450  |
|                                | 56                                | 16×25                           | 0.530                           | 1.325  |
|                                | 56                                | 16×30                           | 0.585                           | 1.463  |
|                                | 56                                | 18×25                           | 0.560                           | 1.400  |
|                                | 68                                | 12.5×45                         | 0.610                           | 1.525  |
|                                | 68                                | 12.5×50                         | 0.670                           | 1.675  |
|                                | 68                                | 14.5×35                         | 0.620                           | 1.550  |
|                                | 68                                | 14.5×40                         | 0.660                           | 1.650  |
|                                | 68                                | 16×30                           | 0.610                           | 1.525  |
|                                | 68                                | 16×35                           | 0.660                           | 1.650  |
|                                | 68                                | 18×25                           | 0.610                           | 1.525  |
|                                | 82                                | 14.5×40                         | 0.670                           | 1.675  |
|                                | 82                                | 14.5×45                         | 0.740                           | 1.850  |
|                                | 82                                | 16×35                           | 0.690                           | 1.725  |
|                                | 82                                | 16×40                           | 0.750                           | 1.875  |
|                                | 82                                | 18×30                           | 0.730                           | 1.825  |
|                                | 100                               | 14.5×50                         | 0.810                           | 1.823  |
|                                | 100                               | 16×40                           | 0.770                           | 1.733  |
|                                | 100                               | 16×45                           | 0.840                           | 1.890  |
|                                | 100                               | 18×30                           | 0.750                           | 1.688  |
|                                | 100                               | 18×35                           | 0.835                           | 1.879  |
|                                | 120                               | 16×45                           | 0.880                           | 1.980  |
|                                | 120                               | 18×35                           | 0.860                           | 1.935  |
|                                | 120                               | 18×40                           | 0.930                           | 2.093  |
|                                | 150                               | 18×45                           | 1.000                           | 2.250  |
|                                | 150                               | 18×50                           | 1.060                           | 2.385  |
|                                | 180                               | 18×50                           | 1.100                           | 2.475  |

## CXW series

105℃ 5000時間 超小形化品 -40℃対応  
105℃ 5000 hours, Ultra Miniaturized, -40℃~105℃



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 180～500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>180～450</td><td>500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                       | 定格電圧 (Vdc)<br>Rated Voltage   | 180～450                                           | 500                          | tan δ                                                      | 0.20                    | 0.25                                        |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 180～450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 500                           |                                                   |                              |                                                            |                         |                                             |   |   |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.25                          |                                                   |                              |                                                            |                         |                                             |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で5000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 5000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>180～250</td><td>350, 400</td><td>420～500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>5</td><td>6</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                         | 定格電圧 (Vdc)<br>Rated Voltage   | 180～250                                           | 350, 400                     | 420～500                                                    | Z(-25℃)/Z(+20℃)         | 3                                           | 5 | 6 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 180～250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 350, 400                      | 420～500                                           |                              |                                                            |                         |                                             |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5                             | 6                                                 |                              |                                                            |                         |                                             |   |   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | CXW             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

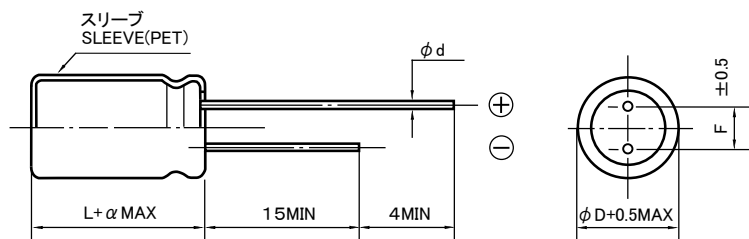
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60(50)           | 120  | 500  | 1k   | 10k ≤ |
|-----------------------|------------------|------|------|------|-------|
| 係数<br>Coefficient     | 180~350v<br>0.65 | 1.00 | 1.25 | 1.40 | 1.50  |
|                       | 400~500v<br>0.80 | 1.00 | 1.25 | 1.40 | 1.50  |

### ◆副記号／OPTION

EFR : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



(mm)

|          |     |     |      |      |     |    |
|----------|-----|-----|------|------|-----|----|
| $\phi$ D | 8   | 10  | 12.5 | 14.5 | 16  | 18 |
| $\phi$ d | 0.6 |     |      | 0.8  |     |    |
| F        | 3.5 | 5.0 |      |      | 7.5 |    |
| $\alpha$ | 2.0 |     |      |      |     |    |

◆標準品一覧表／STANDARD SIZE

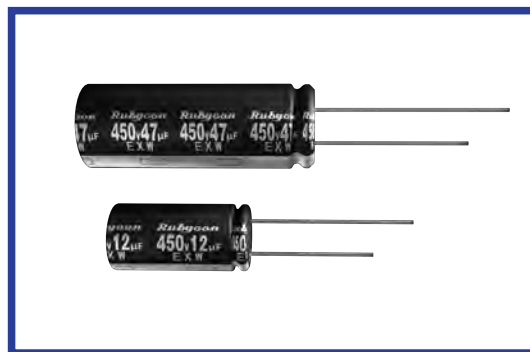
Size φ D×L (mm) , Rated Ripple Current (A r.m.s./105°C, 120Hz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size | 定格リプル電流<br>RatedRipple<br>Current |
|--------------------------------|------------------------------|--------------|-----------------------------------|
| 180                            | 120                          | 10×40        | 0.53                              |
|                                | 150                          | 10×45        | 0.61                              |
|                                | 180                          | 10×50        | 0.69                              |
|                                | 220                          | 12.5×40      | 0.80                              |
|                                | 220                          | 14.5×31.5    | 0.80                              |
|                                | 270                          | 12.5×45      | 0.91                              |
|                                | 270                          | 14.5×35      | 0.90                              |
|                                | 270                          | 16×31.5      | 0.92                              |
|                                | 330                          | 14.5×45      | 1.09                              |
|                                | 330                          | 16×35        | 1.04                              |
|                                | 330                          | 18×31.5      | 1.03                              |
|                                | 390                          | 16×40        | 1.17                              |
|                                | 390                          | 18×35        | 1.14                              |
|                                | 470                          | 16×45        | 1.31                              |
|                                | 470                          | 18×40        | 1.29                              |
|                                | 560                          | 18×45        | 1.44                              |
| 200                            | 680                          | 18×50        | 1.59                              |
|                                | 120                          | 10×40        | 0.54                              |
|                                | 150                          | 10×45        | 0.62                              |
|                                | 180                          | 12.5×40      | 0.73                              |
|                                | 220                          | 12.5×45      | 0.84                              |
|                                | 220                          | 14.5×35      | 0.83                              |
|                                | 220                          | 16×31.5      | 0.85                              |
|                                | 270                          | 12.5×50      | 0.94                              |
|                                | 270                          | 14.5×40      | 0.96                              |
|                                | 330                          | 14.5×45      | 1.08                              |
|                                | 330                          | 16×40        | 1.10                              |
|                                | 330                          | 18×31.5      | 1.02                              |
|                                | 390                          | 16×45        | 1.23                              |
|                                | 390                          | 18×35        | 1.13                              |
|                                | 470                          | 16×50        | 1.37                              |
|                                | 470                          | 18×40        | 1.29                              |
| 250                            | 560                          | 18×45        | 1.44                              |
|                                | 82                           | 10×40        | 0.45                              |
|                                | 100                          | 10×45        | 0.52                              |
|                                | 120                          | 10×50        | 0.59                              |
|                                | 150                          | 12.5×40      | 0.65                              |
|                                | 150                          | 14.5×31.5    | 0.68                              |
|                                | 180                          | 12.5×45      | 0.77                              |
|                                | 180                          | 14.5×35      | 0.77                              |
|                                | 180                          | 16×31.5      | 0.79                              |
|                                | 220                          | 14.5×40      | 0.88                              |
|                                | 220                          | 16×35        | 0.89                              |
|                                | 220                          | 18×31.5      | 0.88                              |
|                                | 270                          | 16×40        | 1.01                              |
|                                | 270                          | 18×35        | 0.99                              |
|                                | 330                          | 16×45        | 1.15                              |
|                                | 330                          | 18×40        | 1.13                              |
| 350                            | 390                          | 18×45        | 1.27                              |
|                                | 470                          | 18×50        | 1.41                              |
|                                | 56                           | 10×40        | 0.37                              |
|                                | 68                           | 10×45        | 0.43                              |
|                                | 100                          | 12.5×40      | 0.56                              |
|                                | 100                          | 14.5×31.5    | 0.56                              |
|                                | 120                          | 12.5×50      | 0.66                              |
|                                | 120                          | 14.5×35      | 0.63                              |
|                                | 120                          | 16×31.5      | 0.65                              |
|                                | 150                          | 14.5×45      | 0.76                              |
|                                | 150                          | 16×35        | 0.74                              |
|                                | 150                          | 18×31.5      | 0.74                              |
|                                | 180                          | 16×40        | 0.84                              |
|                                | 180                          | 18×35        | 0.83                              |
|                                | 220                          | 16×50        | 0.99                              |
|                                | 220                          | 18×40        | 0.93                              |
|                                | 270                          | 18×45        | 1.03                              |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size | 定格リプル電流<br>RatedRipple<br>Current |
|--------------------------------|------------------------------|--------------|-----------------------------------|
| 400                            | 15                           | 8×25         | 0.16                              |
|                                | 18                           | 8×30         | 0.19                              |
|                                | 22                           | 8×35         | 0.22                              |
|                                | 27                           | 8×40         | 0.25                              |
|                                | 33                           | 8×45         | 0.29                              |
|                                | 39                           | 10×40        | 0.37                              |
|                                | 47                           | 10×45        | 0.42                              |
|                                | 56                           | 10×50        | 0.47                              |
|                                | 68                           | 12.5×40      | 0.54                              |
|                                | 82                           | 12.5×45      | 0.61                              |
|                                | 82                           | 14.5×31.5    | 0.57                              |
|                                | 100                          | 12.5×50      | 0.68                              |
|                                | 100                          | 14.5×40      | 0.69                              |
|                                | 100                          | 16×31.5      | 0.71                              |
|                                | 120                          | 14.5×45      | 0.79                              |
|                                | 120                          | 16×35        | 0.80                              |
| 420                            | 150                          | 16×40        | 0.92                              |
|                                | 150                          | 18×31.5      | 0.89                              |
|                                | 150                          | 18×40        | 1.05                              |
|                                | 180                          | 16×50        | 1.08                              |
|                                | 180                          | 18×40        | 1.06                              |
|                                | 220                          | 18×45        | 1.20                              |
|                                | 12                           | 8×25         | 0.10                              |
|                                | 15                           | 8×30         | 0.12                              |
|                                | 18                           | 8×35         | 0.16                              |
|                                | 22                           | 8×40         | 0.19                              |
|                                | 39                           | 10×40        | 0.36                              |
|                                | 47                           | 10×50        | 0.43                              |
|                                | 56                           | 12.5×40      | 0.48                              |
|                                | 68                           | 12.5×40      | 0.52                              |
|                                | 68                           | 14.5×31.5    | 0.52                              |
|                                | 82                           | 12.5×45      | 0.59                              |
| 450                            | 82                           | 14.5×35      | 0.59                              |
|                                | 100                          | 14.5×40      | 0.67                              |
|                                | 100                          | 16×31.5      | 0.69                              |
|                                | 120                          | 14.5×45      | 0.75                              |
|                                | 120                          | 16×35        | 0.78                              |
|                                | 120                          | 18×31.5      | 0.80                              |
|                                | 150                          | 16×45        | 0.94                              |
|                                | 150                          | 18×35        | 0.92                              |
|                                | 180                          | 16×50        | 1.05                              |
|                                | 180                          | 18×40        | 1.04                              |
|                                | 220                          | 18×50        | 1.22                              |
|                                | 10                           | 8×25         | 0.12                              |
|                                | 12                           | 8×30         | 0.14                              |
|                                | 15                           | 8×35         | 0.16                              |
|                                | 18                           | 8×40         | 0.18                              |
|                                | 22                           | 8×50         | 0.22                              |
| 500                            | 33                           | 10×40        | 0.34                              |
|                                | 39                           | 10×45        | 0.38                              |
|                                | 47                           | 12.5×40      | 0.44                              |
|                                | 56                           | 12.5×40      | 0.49                              |
|                                | 68                           | 12.5×45      | 0.55                              |
|                                | 68                           | 14.5×31.5    | 0.52                              |
|                                | 82                           | 12.5×50      | 0.62                              |
|                                | 82                           | 14.5×40      | 0.63                              |
|                                | 82                           | 16×31.5      | 0.64                              |
|                                | 82                           | 16×35        | 0.60                              |
|                                | 100                          | 14.5×45      | 0.71                              |
|                                | 100                          | 16×35        | 0.73                              |
|                                | 120                          | 14.5×50      | 0.79                              |
|                                | 120                          | 16×40        | 0.82                              |
|                                | 120                          | 18×31.5      | 0.80                              |
|                                | 120                          | 18×40        | 0.85                              |
|                                | 150                          | 16×50        | 0.98                              |
|                                | 150                          | 18×40        | 0.97                              |
|                                | 180                          | 18×45        | 1.09                              |
|                                | 220                          | 18×50        | 1.22                              |
|                                | 82                           | 16×45        | 0.61                              |

## EXW series

125℃ 長寿命 (3000~5000 時間) 小形化品  
125℃ Long Life (3000~5000 hours), Miniaturized



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------|---------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|-----------------|------|-------------------------|---------------------------------------------|------------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -25～+125℃           |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 500Vdc              |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μ A) C=静電容量 (μ F) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～<br/>450</td><td>500</td></tr><tr><td>tan δ</td><td>0.25</td><td>0.28</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 定格電圧 (Vdc)<br>Rated Voltage   | 400～<br>450                                       | 500                 | tan δ                | 0.25                         | 0.28                                                       |                 |      |                         |                                             |            |      |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～<br>450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 500                 |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| tan δ                                                                    | 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.28                |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 耐久性<br>Endurance                                                         | <p>125℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br/>After applying rated voltage with rated ripple current for specified time at 125℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±30% 以内<br/>Within ±30% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 300% 以下<br/>Not more than 300% of the specified value.</td><td>φ 10</td><td>3000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>φ D ≥ 12.5</td><td>5000</td></tr></table> <p>※但し、500Vdc 品は3000 時間<br/>500Vdc:3000hrs</p> |                     | 静電容量変化率<br>Capacitance Change | 初期値の ±30% 以内<br>Within ±30% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 300% 以下<br>Not more than 300% of the specified value. | φ 10            | 3000 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | φ D ≥ 12.5 | 5000 |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±30% 以内<br>Within ±30% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs)          |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 300% 以下<br>Not more than 300% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | φ 10                | 3000                          |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | φ D ≥ 12.5          | 5000                          |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～<br/>450</td><td>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>6</td><td>8</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>10</td><td>—</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     | 定格電圧 (Vdc)<br>Rated Voltage   | 400～<br>450                                       | 500                 | Z(-25℃)/Z(+20℃)      | 6                            | 8                                                          | Z(-40℃)/Z(+20℃) | 10   | —                       |                                             |            |      |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～<br>450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 500                 |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| Z(-25℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8                   |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |
| Z(-40℃)/Z(+20℃)                                                          | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | —                   |                               |                                                   |                     |                      |                              |                                                            |                 |      |                         |                                             |            |      |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | EXW             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

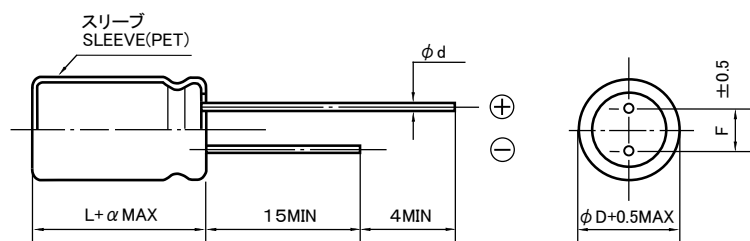
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60(50)             | 120  | 500  | 1k   | 10k  | 100k ≤ |
|-----------------------|--------------------|------|------|------|------|--------|
| 係数<br>Coefficient     | 8.2~82 μF<br>0.80  | 1.00 | 1.30 | 1.50 | 2.10 | 2.50   |
|                       | 100~150 μF<br>0.80 | 1.00 | 1.30 | 1.50 | 2.00 | 2.25   |

### ◆副記号／OPTION

EFR : 400~450Vdc  
EFC : 500Vdc

◆寸法図／DIMENSIONS



|          |      |      |      |    |    |
|----------|------|------|------|----|----|
|          | (mm) |      |      |    |    |
| $\phi$ D | 10   | 12.5 | 14.5 | 16 | 18 |
| $\phi$ d | 0.6  |      | 0.8  |    |    |
| F        | 5.0  |      | 7.5  |    |    |
| $\alpha$ | 2.0  |      |      |    |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φ D×L (mm) | 定格リプル電流<br>Rated Ripple Current<br>(A r.m.s./125°C) |        |
|--------------------------------|-----------------------------|----------------------------|-----------------------------------------------------|--------|
|                                |                             |                            | 120Hz                                               | 100kHz |
| 400                            | 15                          | 10×20                      | 0.200                                               | 0.500  |
|                                | 18                          | 10×25                      | 0.235                                               | 0.588  |
|                                | 22                          | 10×30                      | 0.275                                               | 0.688  |
|                                | 22                          | 12.5×20                    | 0.260                                               | 0.650  |
|                                | 27                          | 10×35                      | 0.320                                               | 0.800  |
|                                | 27                          | 12.5×25                    | 0.310                                               | 0.775  |
|                                | 27                          | 14.5×20                    | 0.310                                               | 0.775  |
|                                | 33                          | 10×40                      | 0.370                                               | 0.925  |
|                                | 33                          | 10×45                      | 0.380                                               | 0.950  |
|                                | 33                          | 16×20                      | 0.355                                               | 0.888  |
|                                | 39                          | 10×50                      | 0.425                                               | 1.063  |
|                                | 39                          | 12.5×30                    | 0.395                                               | 0.988  |
|                                | 39                          | 14.5×25                    | 0.395                                               | 0.988  |
|                                | 47                          | 12.5×35                    | 0.455                                               | 1.138  |
|                                | 47                          | 14.5×30                    | 0.460                                               | 1.150  |
|                                | 47                          | 16×25                      | 0.450                                               | 1.125  |
|                                | 47                          | 18×20                      | 0.435                                               | 1.088  |
|                                | 56                          | 12.5×40                    | 0.515                                               | 1.288  |
|                                | 56                          | 12.5×45                    | 0.535                                               | 1.338  |
|                                | 56                          | 14.5×35                    | 0.525                                               | 1.313  |
|                                | 68                          | 12.5×50                    | 0.605                                               | 1.513  |
|                                | 68                          | 14.5×40                    | 0.595                                               | 1.488  |
|                                | 68                          | 16×30                      | 0.565                                               | 1.413  |
|                                | 68                          | 18×25                      | 0.550                                               | 1.375  |
|                                | 82                          | 14.5×45                    | 0.680                                               | 1.700  |
|                                | 82                          | 16×35                      | 0.645                                               | 1.613  |
|                                | 82                          | 16×40                      | 0.675                                               | 1.688  |
|                                | 82                          | 18×30                      | 0.640                                               | 1.600  |
|                                | 100                         | 14.5×50                    | 0.770                                               | 1.733  |
|                                | 100                         | 16×45                      | 0.770                                               | 1.733  |
|                                | 100                         | 18×35                      | 0.740                                               | 1.665  |
|                                | 120                         | 16×50                      | 0.865                                               | 1.946  |
|                                | 120                         | 18×40                      | 0.835                                               | 1.879  |
|                                | 120                         | 18×45                      | 0.870                                               | 1.958  |
|                                | 150                         | 18×50                      | 0.995                                               | 2.239  |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size<br>φ D×L (mm) | 定格リプル電流<br>Rated Ripple Current<br>(A r.m.s./125°C) |        |
|--------------------------------|-----------------------------|----------------------------|-----------------------------------------------------|--------|
|                                |                             |                            | 120Hz                                               | 100kHz |
| 420                            | 12                          | 10×20                      | 0.175                                               | 0.438  |
|                                | 15                          | 10×25                      | 0.210                                               | 0.525  |
|                                | 18                          | 10×30                      | 0.240                                               | 0.600  |
|                                | 18                          | 12.5×20                    | 0.230                                               | 0.575  |
|                                | 22                          | 10×35                      | 0.280                                               | 0.700  |
|                                | 22                          | 14.5×20                    | 0.275                                               | 0.688  |
|                                | 27                          | 10×40                      | 0.310                                               | 0.775  |
|                                | 27                          | 10×45                      | 0.335                                               | 0.838  |
|                                | 27                          | 12.5×25                    | 0.300                                               | 0.750  |
|                                | 27                          | 16×20                      | 0.310                                               | 0.775  |
|                                | 33                          | 10×50                      | 0.385                                               | 0.963  |
|                                | 33                          | 12.5×30                    | 0.355                                               | 0.888  |
|                                | 33                          | 14.5×25                    | 0.355                                               | 0.888  |
|                                | 39                          | 12.5×35                    | 0.405                                               | 1.013  |
|                                | 39                          | 16×25                      | 0.400                                               | 1.000  |
|                                | 39                          | 18×20                      | 0.390                                               | 0.975  |
|                                | 47                          | 12.5×40                    | 0.460                                               | 1.150  |
|                                | 47                          | 12.5×45                    | 0.480                                               | 1.200  |
|                                | 47                          | 14.5×30                    | 0.445                                               | 1.113  |
|                                | 56                          | 12.5×50                    | 0.535                                               | 1.338  |
|                                | 56                          | 14.5×35                    | 0.510                                               | 1.275  |
|                                | 56                          | 16×30                      | 0.500                                               | 1.250  |
|                                | 56                          | 18×25                      | 0.495                                               | 1.238  |
|                                | 68                          | 14.5×40                    | 0.580                                               | 1.450  |
|                                | 68                          | 14.5×45                    | 0.600                                               | 1.500  |
|                                | 68                          | 16×35                      | 0.580                                               | 1.450  |
|                                | 68                          | 18×30                      | 0.575                                               | 1.438  |
|                                | 82                          | 14.5×50                    | 0.680                                               | 1.700  |
|                                | 82                          | 16×40                      | 0.660                                               | 1.650  |
|                                | 82                          | 16×45                      | 0.685                                               | 1.713  |
|                                | 82                          | 18×35                      | 0.655                                               | 1.638  |
|                                | 100                         | 16×50                      | 0.775                                               | 1.744  |
|                                | 100                         | 18×40                      | 0.750                                               | 1.688  |
|                                | 120                         | 18×45                      | 0.840                                               | 1.890  |
|                                | 120                         | 18×50                      | 0.875                                               | 1.969  |

### ◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>$\phi$ D $\times$ L (mm) | 定格リプル電流<br>Rated Ripple Current<br>(A r.m.s./125°C) |        |
|--------------------------------|-----------------------------------|------------------------------------------|-----------------------------------------------------|--------|
|                                |                                   |                                          | 120Hz                                               | 100kHz |
| 450                            | 12                                | 10 $\times$ 20                           | 0.175                                               | 0.438  |
|                                | 15                                | 10 $\times$ 25                           | 0.210                                               | 0.525  |
|                                | 18                                | 10 $\times$ 30                           | 0.240                                               | 0.600  |
|                                | 18                                | 12.5 $\times$ 20                         | 0.235                                               | 0.588  |
|                                | 22                                | 10 $\times$ 35                           | 0.280                                               | 0.700  |
|                                | 22                                | 12.5 $\times$ 25                         | 0.275                                               | 0.688  |
|                                | 22                                | 14.5 $\times$ 20                         | 0.275                                               | 0.688  |
|                                | 27                                | 10 $\times$ 40                           | 0.325                                               | 0.813  |
|                                | 27                                | 10 $\times$ 45                           | 0.335                                               | 0.838  |
|                                | 27                                | 12.5 $\times$ 30                         | 0.325                                               | 0.813  |
|                                | 27                                | 16 $\times$ 20                           | 0.315                                               | 0.788  |
|                                | 33                                | 10 $\times$ 50                           | 0.385                                               | 0.963  |
|                                | 33                                | 12.5 $\times$ 35                         | 0.375                                               | 0.938  |
|                                | 33                                | 14.5 $\times$ 25                         | 0.355                                               | 0.888  |
|                                | 39                                | 12.5 $\times$ 40                         | 0.425                                               | 1.063  |
|                                | 39                                | 14.5 $\times$ 30                         | 0.410                                               | 1.025  |
|                                | 39                                | 16 $\times$ 25                           | 0.400                                               | 1.000  |
|                                | 39                                | 18 $\times$ 20                           | 0.390                                               | 0.975  |
|                                | 47                                | 12.5 $\times$ 45                         | 0.480                                               | 1.200  |
|                                | 47                                | 14.5 $\times$ 35                         | 0.470                                               | 1.175  |
|                                | 47                                | 16 $\times$ 30                           | 0.465                                               | 1.163  |
|                                | 47                                | 18 $\times$ 25                           | 0.460                                               | 1.150  |
|                                | 56                                | 12.5 $\times$ 50                         | 0.540                                               | 1.350  |
|                                | 56                                | 14.5 $\times$ 40                         | 0.530                                               | 1.325  |
|                                | 56                                | 16 $\times$ 35                           | 0.530                                               | 1.325  |
|                                | 68                                | 14.5 $\times$ 45                         | 0.580                                               | 1.450  |
|                                | 68                                | 14.5 $\times$ 50                         | 0.625                                               | 1.563  |
|                                | 68                                | 16 $\times$ 40                           | 0.605                                               | 1.513  |
|                                | 68                                | 18 $\times$ 30                           | 0.575                                               | 1.438  |
|                                | 82                                | 16 $\times$ 45                           | 0.685                                               | 1.713  |
|                                | 82                                | 18 $\times$ 35                           | 0.660                                               | 1.650  |
|                                | 100                               | 16 $\times$ 50                           | 0.775                                               | 1.744  |
|                                | 100                               | 18 $\times$ 40                           | 0.740                                               | 1.665  |
|                                | 100                               | 18 $\times$ 45                           | 0.785                                               | 1.766  |
|                                | 120                               | 18 $\times$ 50                           | 0.880                                               | 1.980  |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>$\phi$ D $\times$ L (mm) | 定格リプル電流<br>Rated Ripple Current<br>(A r.m.s./125°C) |        |
|--------------------------------|-----------------------------------|------------------------------------------|-----------------------------------------------------|--------|
|                                |                                   |                                          | 120Hz                                               | 100kHz |
| 500                            | 8.2                               | 10 $\times$ 20                           | 0.135                                               | 0.338  |
|                                | 12                                | 10 $\times$ 25                           | 0.180                                               | 0.450  |
|                                | 12                                | 12.5 $\times$ 20                         | 0.180                                               | 0.450  |
|                                | 15                                | 10 $\times$ 30                           | 0.210                                               | 0.525  |
|                                | 18                                | 10 $\times$ 35                           | 0.245                                               | 0.613  |
|                                | 18                                | 10 $\times$ 40                           | 0.255                                               | 0.638  |
|                                | 18                                | 12.5 $\times$ 25                         | 0.235                                               | 0.588  |
|                                | 18                                | 14.5 $\times$ 20                         | 0.235                                               | 0.588  |
|                                | 22                                | 10 $\times$ 45                           | 0.280                                               | 0.700  |
|                                | 22                                | 12.5 $\times$ 30                         | 0.280                                               | 0.700  |
|                                | 22                                | 14.5 $\times$ 25                         | 0.280                                               | 0.700  |
|                                | 22                                | 16 $\times$ 20                           | 0.270                                               | 0.675  |
|                                | 27                                | 10 $\times$ 50                           | 0.330                                               | 0.825  |
|                                | 27                                | 12.5 $\times$ 35                         | 0.320                                               | 0.800  |
|                                | 27                                | 14.5 $\times$ 30                         | 0.325                                               | 0.813  |
|                                | 27                                | 16 $\times$ 25                           | 0.320                                               | 0.800  |
|                                | 27                                | 18 $\times$ 20                           | 0.315                                               | 0.788  |
|                                | 33                                | 12.5 $\times$ 40                         | 0.370                                               | 0.925  |
|                                | 33                                | 12.5 $\times$ 45                         | 0.385                                               | 0.963  |
|                                | 39                                | 12.5 $\times$ 50                         | 0.430                                               | 1.075  |
|                                | 39                                | 14.5 $\times$ 35                         | 0.410                                               | 1.025  |
|                                | 39                                | 14.5 $\times$ 40                         | 0.425                                               | 1.063  |
|                                | 39                                | 16 $\times$ 30                           | 0.405                                               | 1.013  |
|                                | 39                                | 18 $\times$ 25                           | 0.400                                               | 1.000  |
|                                | 47                                | 14.5 $\times$ 45                         | 0.485                                               | 1.213  |
|                                | 47                                | 16 $\times$ 35                           | 0.460                                               | 1.150  |
|                                | 47                                | 18 $\times$ 30                           | 0.460                                               | 1.150  |
|                                | 56                                | 14.5 $\times$ 50                         | 0.545                                               | 1.363  |
|                                | 56                                | 16 $\times$ 40                           | 0.525                                               | 1.313  |
|                                | 56                                | 16 $\times$ 45                           | 0.545                                               | 1.363  |
|                                | 56                                | 18 $\times$ 35                           | 0.525                                               | 1.313  |
|                                | 68                                | 16 $\times$ 50                           | 0.615                                               | 1.538  |
|                                | 68                                | 18 $\times$ 40                           | 0.600                                               | 1.500  |
|                                | 82                                | 18 $\times$ 45                           | 0.680                                               | 1.700  |
|                                | 82                                | 18 $\times$ 50                           | 0.700                                               | 1.750  |



## HXW series

105℃ 2000～3000時間 超小形化品 -40℃対応  
105℃ 2000～3000 hours, Ultra Miniaturized, -40℃～105℃



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|---------------------|----------------------|-----------|------|-----------------|----------------|----------------|----|----|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400</td><td>420～500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 定格電圧 (Vdc)<br>Rated Voltage   | 400                                               | 420～500                      | tan δ                                                      | 0.20                    | 0.25                                        |                     |                      |           |      |                 |                |                |    |    |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 420～500                       |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.25                          |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> <table><tr><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>φD ≤ 12.5</td><td>2000</td></tr><tr><td rowspan="2">φD ≥ 14.5</td><td>L ≤ 25<br/>2000</td></tr><tr><td>L ≥ 30<br/>3000</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | φD ≤ 12.5 | 2000 | φD ≥ 14.5       | L ≤ 25<br>2000 | L ≥ 30<br>3000 |    |    |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| ケースサイズ<br>Case Size                                                      | 時間(hrs)<br>Time(hrs)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| φD ≤ 12.5                                                                | 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| φD ≥ 14.5                                                                | L ≤ 25<br>2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
|                                                                          | L ≥ 30<br>3000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                   |                              |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400</td><td>420</td><td>450</td><td>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>5</td><td>6</td><td>6</td><td>8</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>6</td><td>10</td><td>10</td><td>12</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 定格電圧 (Vdc)<br>Rated Voltage   | 400                                               | 420                          | 450                                                        | 500                     | Z(-25℃)/Z(+20℃)                             | 5                   | 6                    | 6         | 8    | Z(-40℃)/Z(+20℃) | 6              | 10             | 10 | 12 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 420                           | 450                                               | 500                          |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| Z(-25℃)/Z(+20℃)                                                          | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6                             | 6                                                 | 8                            |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |
| Z(-40℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10                            | 10                                                | 12                           |                                                            |                         |                                             |                     |                      |           |      |                 |                |                |    |    |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | HXW             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

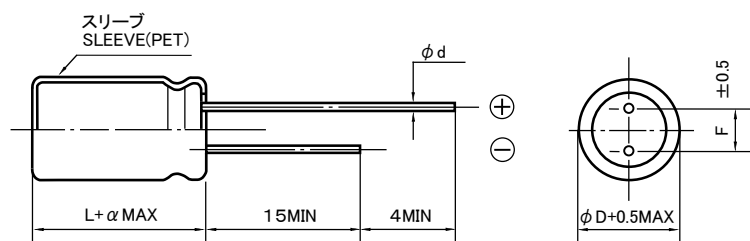
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

|                       |        |      |      |      |       |
|-----------------------|--------|------|------|------|-------|
| 周波数 (Hz)<br>Frequency | 60(50) | 120  | 500  | 1k   | 10k ≤ |
| 係数 Coefficient        | 0.80   | 1.00 | 1.25 | 1.40 | 1.50  |

### ◆副記号／OPTION

EFR : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



|          | (mm) |      |      |    |    |
|----------|------|------|------|----|----|
| $\phi D$ | 10   | 12.5 | 14.5 | 16 | 18 |
| $\phi d$ | 0.6  |      | 0.8  |    |    |
| F        | 5.0  |      | 7.5  |    |    |
| $\alpha$ | 2.0  |      |      |    |    |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (A r.m.s./105°C, 120Hz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル<br>電流<br>RatedRipple<br>Current |
|--------------------------------|-----------------------------|---------------------------|---------------------------------------|
| 400                            | 39                          | 12.5×20                   | 0.41                                  |
|                                | 47                          | 10×30                     | 0.47                                  |
|                                | 56                          | 10×35                     | 0.54                                  |
|                                | 56                          | 10×40                     | 0.57                                  |
|                                | 56                          | 12.5×25                   | 0.53                                  |
|                                | 56                          | 14.5×20                   | 0.52                                  |
|                                | 68                          | 10×45                     | 0.65                                  |
|                                | 68                          | 12.5×30                   | 0.61                                  |
|                                | 68                          | 14.5×25                   | 0.62                                  |
|                                | 68                          | 16×20                     | 0.59                                  |
|                                | 82                          | 10×50                     | 0.73                                  |
|                                | 82                          | 10×55                     | 0.75                                  |
|                                | 82                          | 10×60                     | 0.78                                  |
|                                | 82                          | 12.5×35                   | 0.70                                  |
|                                | 82                          | 14.5×30                   | 0.71                                  |
|                                | 82                          | 18×20                     | 0.67                                  |
|                                | 100                         | 12.5×40                   | 0.80                                  |
|                                | 100                         | 12.5×45                   | 0.84                                  |
|                                | 100                         | 14.5×35                   | 0.82                                  |
|                                | 100                         | 16×25                     | 0.74                                  |
|                                | 120                         | 12.5×50                   | 0.95                                  |
|                                | 120                         | 14.5×40                   | 0.93                                  |
|                                | 120                         | 16×30                     | 0.87                                  |
|                                | 120                         | 18×25                     | 0.85                                  |
|                                | 150                         | 14.5×45                   | 1.07                                  |
|                                | 150                         | 14.5×50                   | 1.11                                  |
|                                | 150                         | 16×35                     | 1.00                                  |
|                                | 150                         | 16×40                     | 1.07                                  |
|                                | 150                         | 18×30                     | 1.00                                  |
|                                | 180                         | 16×45                     | 1.20                                  |
|                                | 180                         | 18×35                     | 1.14                                  |
|                                | 220                         | 16×50                     | 1.34                                  |
|                                | 220                         | 18×40                     | 1.30                                  |
|                                | 220                         | 18×45                     | 1.36                                  |
|                                | 270                         | 18×50                     | 1.53                                  |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル<br>電流<br>RatedRipple<br>Current |
|--------------------------------|-----------------------------|---------------------------|---------------------------------------|
| 420                            | 39                          | 10×30                     | 0.40                                  |
|                                | 39                          | 12.5×20                   | 0.38                                  |
|                                | 47                          | 10×35                     | 0.46                                  |
|                                | 47                          | 12.5×25                   | 0.45                                  |
|                                | 47                          | 14.5×20                   | 0.45                                  |
|                                | 56                          | 10×40                     | 0.52                                  |
|                                | 56                          | 16×20                     | 0.50                                  |
|                                | 68                          | 10×45                     | 0.60                                  |
|                                | 68                          | 10×50                     | 0.62                                  |
|                                | 68                          | 12.5×30                   | 0.57                                  |
|                                | 68                          | 14.5×25                   | 0.57                                  |
|                                | 82                          | 10×55                     | 0.70                                  |
|                                | 82                          | 10×60                     | 0.71                                  |
|                                | 82                          | 12.5×35                   | 0.64                                  |
|                                | 82                          | 12.5×40                   | 0.68                                  |
|                                | 82                          | 14.5×30                   | 0.66                                  |
|                                | 82                          | 16×25                     | 0.64                                  |
|                                | 82                          | 18×20                     | 0.62                                  |
|                                | 100                         | 12.5×45                   | 0.78                                  |
|                                | 100                         | 14.5×35                   | 0.76                                  |
|                                | 100                         | 16×30                     | 0.75                                  |
|                                | 120                         | 12.5×50                   | 0.86                                  |
|                                | 120                         | 14.5×40                   | 0.86                                  |
|                                | 120                         | 14.5×45                   | 0.90                                  |
|                                | 120                         | 16×35                     | 0.85                                  |
|                                | 120                         | 18×25                     | 0.78                                  |
|                                | 150                         | 14.5×50                   | 1.03                                  |
|                                | 150                         | 16×40                     | 0.99                                  |
|                                | 150                         | 18×30                     | 0.92                                  |
|                                | 180                         | 16×45                     | 1.11                                  |
|                                | 180                         | 16×50                     | 1.15                                  |
|                                | 180                         | 18×35                     | 1.05                                  |
|                                | 180                         | 18×40                     | 1.11                                  |
|                                | 220                         | 18×45                     | 1.26                                  |
|                                | 270                         | 18×50                     | 1.40                                  |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current(A r.m.s./105°C, 120Hz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ DxL<br>(mm) | 定格リプル<br>電流<br>RatedRipple<br>Current |
|--------------------------------|-----------------------------------|---------------------------------|---------------------------------------|
| 450                            | 33                                | 12.5×20                         | 0.36                                  |
|                                | 39                                | 10×30                           | 0.40                                  |
|                                | 47                                | 10×35                           | 0.46                                  |
|                                | 47                                | 12.5×25                         | 0.45                                  |
|                                | 47                                | 14.5×20                         | 0.44                                  |
|                                | 56                                | 10×40                           | 0.51                                  |
|                                | 56                                | 10×45                           | 0.55                                  |
|                                | 56                                | 12.5×30                         | 0.52                                  |
|                                | 56                                | 14.5×25                         | 0.52                                  |
|                                | 56                                | 16×20                           | 0.50                                  |
|                                | 68                                | 10×50                           | 0.62                                  |
|                                | 68                                | 10×55                           | 0.64                                  |
|                                | 68                                | 12.5×35                         | 0.60                                  |
|                                | 68                                | 18×20                           | 0.57                                  |
|                                | 82                                | 10×60                           | 0.71                                  |
|                                | 82                                | 12.5×40                         | 0.68                                  |
|                                | 82                                | 12.5×45                         | 0.71                                  |
|                                | 82                                | 14.5×30                         | 0.66                                  |
|                                | 82                                | 16×25                           | 0.64                                  |
|                                | 100                               | 12.5×50                         | 0.81                                  |
|                                | 100                               | 14.5×35                         | 0.75                                  |
|                                | 100                               | 14.5×40                         | 0.79                                  |
|                                | 100                               | 16×30                           | 0.75                                  |
|                                | 100                               | 18×25                           | 0.73                                  |
|                                | 120                               | 14.5×45                         | 0.90                                  |
|                                | 120                               | 14.5×50                         | 0.93                                  |
|                                | 120                               | 16×35                           | 0.86                                  |
|                                | 120                               | 18×30                           | 0.84                                  |
|                                | 150                               | 16×40                           | 0.97                                  |
|                                | 150                               | 16×45                           | 1.03                                  |
|                                | 150                               | 18×35                           | 0.98                                  |
|                                | 180                               | 16×50                           | 1.15                                  |
|                                | 180                               | 18×40                           | 1.11                                  |
|                                | 220                               | 18×45                           | 1.24                                  |
|                                | 220                               | 18×50                           | 1.30                                  |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ DxL<br>(mm) | 定格リプル<br>電流<br>RatedRipple<br>Current |
|--------------------------------|-----------------------------------|---------------------------------|---------------------------------------|
| 500                            | 22                                | 12.5×20                         | 0.26                                  |
|                                | 27                                | 12.5×25                         | 0.33                                  |
|                                | 27                                | 14.5×20                         | 0.33                                  |
|                                | 33                                | 14.5×25                         | 0.38                                  |
|                                | 33                                | 16×20                           | 0.37                                  |
|                                | 33                                | 12.5×30                         | 0.38                                  |
|                                | 39                                | 12.5×35                         | 0.44                                  |
|                                | 47                                | 12.5×40                         | 0.50                                  |
|                                | 47                                | 14.5×30                         | 0.48                                  |
|                                | 47                                | 16×25                           | 0.48                                  |
|                                | 47                                | 18×20                           | 0.45                                  |
|                                | 56                                | 12.5×45                         | 0.57                                  |
|                                | 56                                | 12.5×50                         | 0.58                                  |
|                                | 56                                | 14.5×35                         | 0.56                                  |
|                                | 56                                | 16×30                           | 0.55                                  |
|                                | 56                                | 18×25                           | 0.54                                  |
|                                | 68                                | 14.5×40                         | 0.63                                  |
|                                | 68                                | 14.5×45                         | 0.71                                  |
|                                | 68                                | 16×35                           | 0.62                                  |
|                                | 68                                | 18×30                           | 0.68                                  |
|                                | 82                                | 14.5×50                         | 0.74                                  |
|                                | 82                                | 16×40                           | 0.71                                  |
|                                | 82                                | 16×45                           | 0.81                                  |
|                                | 82                                | 18×35                           | 0.78                                  |
|                                | 100                               | 16×50                           | 0.83                                  |
|                                | 100                               | 18×40                           | 0.88                                  |
|                                | 120                               | 18×45                           | 0.92                                  |
|                                | 120                               | 18×50                           | 0.95                                  |

## LXW series

105℃長寿命(10000~12000時間)超小形化品 -40℃対応  
105℃ 10000~12000 hours, Ultra Miniaturized, -40℃~105℃



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|--------|-------|-------------------------|---------------------------------------------|-----------------|-------|----|----|----|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400</td><td>420～<br/>500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 定格電圧 (Vdc)<br>Rated Voltage   | 400                                               | 420～<br>500         | tan δ                | 0.20                         | 0.25                                                       |        |       |                         |                                             |                 |       |    |    |    |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 420～<br>500                   |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.25                          |                                                   |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 耐久性<br>Endurance                                                         | <p>105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br/>After applying rated voltage with rated ripple current for specified time at 105℃,<br/>the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td><td>L ≤ 20</td><td>10000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>L ≥ 25</td><td>12000</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | L ≤ 20 | 10000 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | L ≥ 25          | 12000 |    |    |    |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ケースサイズ<br>Case Size           | 時間(hrs)<br>Time(hrs)                              |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | L ≤ 20                        | 10000                                             |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | L ≥ 25                        | 12000                                             |                     |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400</td><td>420</td><td>450</td><td>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>5</td><td>6</td><td>6</td><td>8</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>6</td><td>10</td><td>10</td><td>12</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                        | 定格電圧 (Vdc)<br>Rated Voltage   | 400                                               | 420                 | 450                  | 500                          | Z(-25℃)/Z(+20℃)                                            | 5      | 6     | 6                       | 8                                           | Z(-40℃)/Z(+20℃) | 6     | 10 | 10 | 12 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 420                           | 450                                               | 500                 |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| Z(-25℃)/Z(+20℃)                                                          | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 6                             | 6                                                 | 8                   |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |
| Z(-40℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10                            | 10                                                | 12                  |                      |                              |                                                            |        |       |                         |                                             |                 |       |    |    |    |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | LXW             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

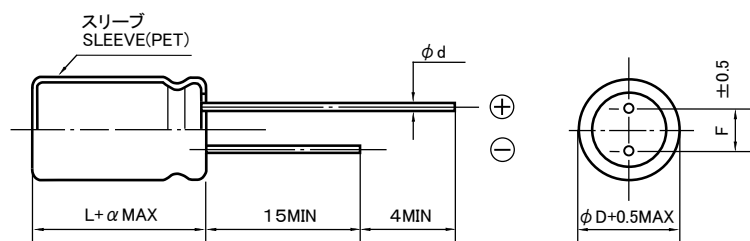
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 60(50)     | 120  | 500  | 1k   | 10k  | 100k ≤ |
|----------------------|------------|------|------|------|------|--------|
| 係数<br>Coefficient    | 18~82 μF   | 0.80 | 1.00 | 1.30 | 1.50 | 2.00   |
|                      | 100~220 μF | 0.80 | 1.00 | 1.30 | 1.50 | 2.00   |

### ◆副記号／OPTION

EFR : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



|          | (mm) |      |      |    |    |
|----------|------|------|------|----|----|
| $\phi D$ | 10   | 12.5 | 14.5 | 16 | 18 |
| $\phi d$ | 0.6  |      | 0.8  |    |    |
| F        | 5.0  |      | 7.5  |    |    |
| $\alpha$ | 2.0  |      |      |    |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|--------|
|                                |                             |                           | 120Hz                           | 100kHz |
| 400                            | 39                          | 10×30                     | 0.410                           | 0.902  |
|                                | 39                          | 12.5×20                   | 0.390                           | 0.858  |
|                                | 47                          | 10×35                     | 0.480                           | 1.056  |
|                                | 47                          | 12.5×25                   | 0.460                           | 1.012  |
|                                | 47                          | 14.5×20                   | 0.460                           | 1.012  |
|                                | 56                          | 10×40                     | 0.540                           | 1.188  |
|                                | 56                          | 16×20                     | 0.520                           | 1.144  |
|                                | 68                          | 10×45                     | 0.610                           | 1.342  |
|                                | 68                          | 10×50                     | 0.640                           | 1.408  |
|                                | 68                          | 12.5×30                   | 0.580                           | 1.276  |
|                                | 68                          | 12.5×35                   | 0.620                           | 1.364  |
|                                | 68                          | 14.5×25                   | 0.590                           | 1.298  |
|                                | 82                          | 10×55                     | 0.720                           | 1.584  |
|                                | 82                          | 10×60                     | 0.740                           | 1.628  |
|                                | 82                          | 12.5×40                   | 0.700                           | 1.540  |
|                                | 82                          | 14.5×30                   | 0.680                           | 1.496  |
|                                | 82                          | 16×25                     | 0.660                           | 1.452  |
|                                | 82                          | 18×20                     | 0.630                           | 1.386  |
|                                | 100                         | 12.5×45                   | 0.800                           | 1.600  |
|                                | 100                         | 12.5×50                   | 0.830                           | 1.660  |
|                                | 100                         | 14.5×35                   | 0.780                           | 1.560  |
|                                | 100                         | 16×30                     | 0.770                           | 1.540  |
|                                | 120                         | 14.5×40                   | 0.890                           | 1.780  |
|                                | 120                         | 14.5×45                   | 0.920                           | 1.840  |
|                                | 120                         | 16×35                     | 0.880                           | 1.760  |
|                                | 120                         | 18×25                     | 0.790                           | 1.580  |
|                                | 150                         | 14.5×50                   | 1.060                           | 2.120  |
|                                | 150                         | 16×40                     | 1.010                           | 2.020  |
|                                | 150                         | 18×30                     | 0.930                           | 1.860  |
|                                | 180                         | 16×45                     | 1.140                           | 2.280  |
|                                | 180                         | 16×50                     | 1.180                           | 2.360  |
|                                | 180                         | 18×35                     | 1.060                           | 2.120  |
|                                | 180                         | 18×40                     | 1.140                           | 2.280  |
|                                | 220                         | 18×45                     | 1.290                           | 2.580  |
|                                | 220                         | 18×50                     | 1.340                           | 2.680  |

Rated Ripple Current (A r.m.s./105°C)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|--------|
|                                |                             |                           | 120Hz                           | 100kHz |
| 420                            | 33                          | 12.5×20                   | 0.340                           | 0.748  |
|                                | 39                          | 10×30                     | 0.380                           | 0.836  |
|                                | 47                          | 10×35                     | 0.440                           | 0.968  |
|                                | 47                          | 12.5×25                   | 0.430                           | 0.946  |
|                                | 47                          | 14.5×20                   | 0.420                           | 0.924  |
|                                | 56                          | 10×40                     | 0.490                           | 1.078  |
|                                | 56                          | 10×45                     | 0.520                           | 1.144  |
|                                | 56                          | 12.5×30                   | 0.500                           | 1.100  |
|                                | 56                          | 14.5×25                   | 0.500                           | 1.100  |
|                                | 56                          | 16×20                     | 0.480                           | 1.056  |
|                                | 68                          | 10×50                     | 0.590                           | 1.298  |
|                                | 68                          | 10×55                     | 0.610                           | 1.342  |
|                                | 68                          | 12.5×35                   | 0.570                           | 1.254  |
|                                | 68                          | 18×20                     | 0.550                           | 1.210  |
|                                | 82                          | 10×60                     | 0.680                           | 1.496  |
|                                | 82                          | 12.5×40                   | 0.650                           | 1.430  |
|                                | 82                          | 14.5×30                   | 0.630                           | 1.386  |
|                                | 82                          | 16×25                     | 0.610                           | 1.342  |
|                                | 100                         | 12.5×45                   | 0.730                           | 1.460  |
|                                | 100                         | 12.5×50                   | 0.770                           | 1.540  |
|                                | 100                         | 14.5×35                   | 0.720                           | 1.440  |
|                                | 100                         | 14.5×40                   | 0.760                           | 1.520  |
|                                | 100                         | 16×30                     | 0.720                           | 1.440  |
|                                | 100                         | 18×25                     | 0.700                           | 1.400  |
|                                | 120                         | 14.5×45                   | 0.860                           | 1.720  |
|                                | 120                         | 14.5×50                   | 0.890                           | 1.780  |
|                                | 120                         | 16×35                     | 0.820                           | 1.640  |
|                                | 120                         | 18×30                     | 0.810                           | 1.620  |
|                                | 150                         | 16×40                     | 0.930                           | 1.860  |
|                                | 150                         | 16×45                     | 0.980                           | 1.960  |
|                                | 150                         | 18×35                     | 0.940                           | 1.880  |
|                                | 180                         | 16×50                     | 1.100                           | 2.200  |
|                                | 180                         | 18×40                     | 1.060                           | 2.120  |
|                                | 220                         | 18×45                     | 1.200                           | 2.400  |
|                                | 220                         | 18×50                     | 1.250                           | 2.500  |

### ◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (A r.m.s./105°C)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ DxL<br>(mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------------|---------------------------------|---------------------------------|--------|
|                                |                                   |                                 | 120Hz                           | 100kHz |
| 450                            | 27                                | 12.5×20                         | 0.310                           | 0.682  |
|                                | 33                                | 10×30                           | 0.360                           | 0.792  |
|                                | 39                                | 10×35                           | 0.410                           | 0.902  |
|                                | 39                                | 12.5×25                         | 0.400                           | 0.880  |
|                                | 39                                | 14.5×20                         | 0.390                           | 0.858  |
|                                | 47                                | 10×40                           | 0.460                           | 1.012  |
|                                | 47                                | 16×20                           | 0.450                           | 0.990  |
|                                | 56                                | 10×45                           | 0.520                           | 1.144  |
|                                | 56                                | 10×50                           | 0.540                           | 1.188  |
|                                | 56                                | 12.5×30                         | 0.490                           | 1.078  |
|                                | 56                                | 14.5×25                         | 0.500                           | 1.100  |
|                                | 68                                | 10×55                           | 0.610                           | 1.342  |
|                                | 68                                | 10×60                           | 0.630                           | 1.386  |
|                                | 68                                | 12.5×35                         | 0.560                           | 1.232  |
|                                | 68                                | 12.5×40                         | 0.600                           | 1.320  |
|                                | 68                                | 14.5×30                         | 0.580                           | 1.276  |
|                                | 68                                | 16×25                           | 0.570                           | 1.254  |
|                                | 68                                | 18×20                           | 0.540                           | 1.188  |
|                                | 82                                | 12.5×45                         | 0.680                           | 1.496  |
|                                | 82                                | 12.5×50                         | 0.700                           | 1.540  |
|                                | 82                                | 14.5×35                         | 0.670                           | 1.474  |
|                                | 82                                | 16×30                           | 0.650                           | 1.430  |
|                                | 82                                | 18×25                           | 0.640                           | 1.408  |
|                                | 100                               | 14.5×40                         | 0.760                           | 1.520  |
|                                | 100                               | 16×35                           | 0.750                           | 1.500  |
|                                | 120                               | 14.5×45                         | 0.850                           | 1.700  |
|                                | 120                               | 14.5×50                         | 0.890                           | 1.780  |
|                                | 120                               | 16×40                           | 0.860                           | 1.720  |
|                                | 120                               | 18×30                           | 0.800                           | 1.600  |
|                                | 150                               | 16×45                           | 0.980                           | 1.960  |
|                                | 150                               | 16×50                           | 1.020                           | 2.040  |
|                                | 150                               | 18×35                           | 0.920                           | 1.840  |
|                                | 150                               | 18×40                           | 0.980                           | 1.960  |
|                                | 180                               | 18×45                           | 1.110                           | 2.220  |
|                                | 220                               | 18×50                           | 1.230                           | 2.460  |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ DxL<br>(mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------------|---------------------------------|---------------------------------|--------|
|                                |                                   |                                 | 120Hz                           | 100kHz |
| 500                            | 18                                | 12.5×20                         | 0.250                           | 0.550  |
|                                | 22                                | 12.5×25                         | 0.290                           | 0.638  |
|                                | 22                                | 14.5×20                         | 0.280                           | 0.616  |
|                                | 27                                | 16×20                           | 0.320                           | 0.704  |
|                                | 33                                | 12.5×30                         | 0.360                           | 0.792  |
|                                | 33                                | 12.5×35                         | 0.380                           | 0.836  |
|                                | 33                                | 14.5×25                         | 0.370                           | 0.814  |
|                                | 39                                | 12.5×40                         | 0.440                           | 0.968  |
|                                | 39                                | 12.5×45                         | 0.500                           | 1.100  |
|                                | 39                                | 14.5×30                         | 0.430                           | 0.946  |
|                                | 39                                | 16×25                           | 0.420                           | 0.924  |
|                                | 39                                | 18×20                           | 0.410                           | 0.902  |
|                                | 47                                | 12.5×50                         | 0.560                           | 1.232  |
|                                | 47                                | 14.5×35                         | 0.490                           | 1.078  |
|                                | 47                                | 16×30                           | 0.480                           | 1.056  |
|                                | 56                                | 14.5×40                         | 0.550                           | 1.210  |
|                                | 56                                | 14.5×45                         | 0.620                           | 1.364  |
|                                | 56                                | 16×35                           | 0.590                           | 1.298  |
|                                | 56                                | 18×25                           | 0.510                           | 1.122  |
|                                | 56                                | 18×30                           | 0.590                           | 1.298  |
|                                | 68                                | 14.5×50                         | 0.690                           | 1.518  |
|                                | 68                                | 16×40                           | 0.620                           | 1.364  |
|                                | 82                                | 16×45                           | 0.710                           | 1.562  |
|                                | 82                                | 16×50                           | 0.790                           | 1.738  |
|                                | 82                                | 18×35                           | 0.680                           | 1.496  |
|                                | 82                                | 18×40                           | 0.770                           | 1.694  |
|                                | 100                               | 18×45                           | 0.860                           | 1.720  |
|                                | 120                               | 18×50                           | 0.910                           | 1.820  |



## QXW series

105℃ 2000時間 小形化品, -40℃対応  
105℃ 2000hours, Miniaturized, Temp. Range : -40~+105℃



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 200～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>200, 400</td><td>420, 450</td></tr><tr><td>tan δ</td><td>0.15</td><td>0.20</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                 | 定格電圧 (Vdc)<br>Rated Voltage   | 200, 400                                          | 420, 450                     | tan δ                                                      | 0.15                    | 0.20                                        |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 200, 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 420, 450                      |                                                   |                              |                                                            |                         |                                             |   |   |
| tan δ                                                                    | 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.20                          |                                                   |                              |                                                            |                         |                                             |   |   |
| 耐久性<br>Endurance                                                         | 105℃中で2000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 2000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>200</td><td>400</td><td>420, 450</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>5</td><td>6</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                 | 定格電圧 (Vdc)<br>Rated Voltage   | 200                                               | 400                          | 420, 450                                                   | Z(-25℃)/Z(+20℃)         | 3                                           | 5 | 6 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 400                           | 420, 450                                          |                              |                                                            |                         |                                             |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5                             | 6                                                 |                              |                                                            |                         |                                             |   |   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | QXW             | □□□□□               | M                                | EFR           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

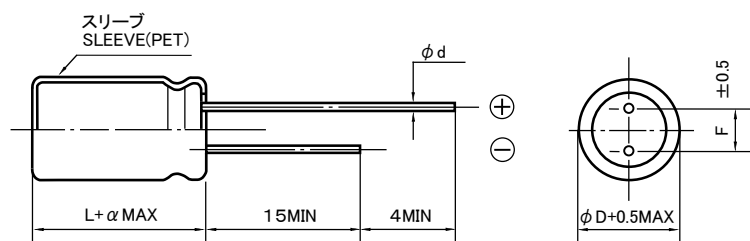
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

|                       |        |      |      |      |      |
|-----------------------|--------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60(50) | 120  | 500  | 1k   | 10k≤ |
| 係数 Coefficient        | 0.80   | 1.00 | 1.25 | 1.40 | 1.50 |

### ◆副記号／OPTION

EFR : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



|          |      |     |      |      |    |    |
|----------|------|-----|------|------|----|----|
|          | (mm) |     |      |      |    |    |
| $\phi$ D | 8    | 10  | 12.5 | 14.5 | 16 | 18 |
| $\phi$ d | 0.6  |     |      | 0.8  |    |    |
| F        | 3.5  | 5.0 |      | 7.5  |    |    |
| $\alpha$ | 2.0  |     |      |      |    |    |

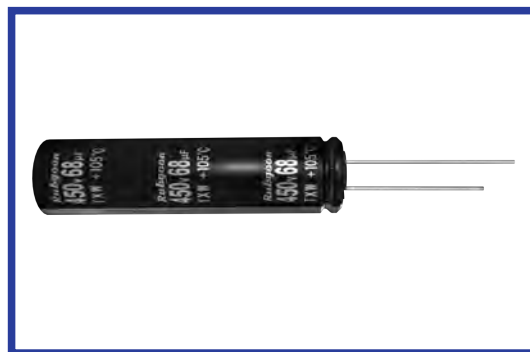
◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size<br>φ D×L (mm) | 定格リプル電流<br>Rated Ripple Current<br>(Ar.m.s./105°C,120Hz) |
|--------------------------------|------------------------------|----------------------------|----------------------------------------------------------|
| 200                            | 82                           | 10×30                      | 0.51                                                     |
|                                | 100                          | 10×35                      | 0.60                                                     |
|                                | 120                          | 10×40                      | 0.68                                                     |
|                                | 150                          | 12.5×30                    | 0.73                                                     |
|                                | 180                          | 12.5×35                    | 0.85                                                     |
|                                | 220                          | 12.5×40                    | 0.97                                                     |
|                                | 220                          | 14.5×30                    | 0.89                                                     |
|                                | 270                          | 14.5×35                    | 1.04                                                     |
|                                | 270                          | 16×30                      | 1.01                                                     |
|                                | 330                          | 16×35                      | 1.17                                                     |
|                                | 330                          | 18×30                      | 1.17                                                     |
|                                | 390                          | 16×40                      | 1.33                                                     |
|                                | 390                          | 18×35                      | 1.33                                                     |
|                                | 470                          | 18×40                      | 1.53                                                     |
|                                | 560                          | 18×45                      | 1.73                                                     |
| 400                            | 18                           | 8×25                       | 0.19                                                     |
|                                | 22                           | 8×30                       | 0.22                                                     |
|                                | 27                           | 8×35                       | 0.25                                                     |
|                                | 33                           | 8×45                       | 0.33                                                     |
|                                | 33                           | 10×30                      | 0.33                                                     |
|                                | 39                           | 8×50                       | 0.35                                                     |
|                                | 39                           | 10×35                      | 0.37                                                     |
|                                | 47                           | 10×40                      | 0.43                                                     |
|                                | 56                           | 10×45                      | 0.48                                                     |
|                                | 56                           | 12.5×30                    | 0.47                                                     |
|                                | 68                           | 12.5×35                    | 0.54                                                     |
|                                | 82                           | 12.5×40                    | 0.62                                                     |
|                                | 82                           | 14.5×31.5                  | 0.61                                                     |
|                                | 100                          | 12.5×50                    | 0.73                                                     |
|                                | 100                          | 14.5×35                    | 0.70                                                     |
|                                | 100                          | 16×31.5                    | 0.71                                                     |
|                                | 120                          | 14.5×40                    | 0.79                                                     |
|                                | 120                          | 16×35                      | 0.80                                                     |
|                                | 150                          | 14.5×50                    | 0.94                                                     |
|                                | 150                          | 16×40                      | 0.92                                                     |
|                                | 150                          | 18×31.5                    | 0.89                                                     |
|                                | 180                          | 16×50                      | 1.08                                                     |
|                                | 180                          | 18×40                      | 1.06                                                     |
|                                | 220                          | 18×45                      | 1.20                                                     |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size<br>φ D×L (mm) | 定格リプル電流<br>Rated Ripple Current<br>(Ar.m.s./105°C,120Hz) |
|--------------------------------|------------------------------|----------------------------|----------------------------------------------------------|
| 420                            | 15                           | 8×25                       | 0.12                                                     |
|                                | 18                           | 8×30                       | 0.14                                                     |
|                                | 22                           | 8×40                       | 0.22                                                     |
|                                | 27                           | 8×45                       | 0.26                                                     |
|                                | 33                           | 10×30                      | 0.32                                                     |
|                                | 39                           | 10×35                      | 0.36                                                     |
|                                | 47                           | 10×40                      | 0.41                                                     |
|                                | 56                           | 10×50                      | 0.49                                                     |
|                                | 56                           | 12.5×30                    | 0.46                                                     |
|                                | 68                           | 12.5×35                    | 0.53                                                     |
|                                | 82                           | 12.5×45                    | 0.63                                                     |
|                                | 82                           | 14.5×31.5                  | 0.60                                                     |
|                                | 100                          | 12.5×50                    | 0.71                                                     |
|                                | 100                          | 14.5×40                    | 0.72                                                     |
|                                | 100                          | 16×31.5                    | 0.69                                                     |
|                                | 120                          | 14.5×45                    | 0.81                                                     |
|                                | 120                          | 16×35                      | 0.78                                                     |
|                                | 120                          | 18×31.5                    | 0.80                                                     |
| 450                            | 150                          | 16×45                      | 0.94                                                     |
|                                | 150                          | 18×35                      | 0.92                                                     |
|                                | 180                          | 16×50                      | 1.05                                                     |
|                                | 180                          | 18×40                      | 1.04                                                     |
|                                | 220                          | 18×50                      | 1.22                                                     |
|                                | 12                           | 8×25                       | 0.15                                                     |
|                                | 15                           | 8×30                       | 0.17                                                     |
|                                | 18                           | 8×35                       | 0.19                                                     |
|                                | 22                           | 8×45                       | 0.23                                                     |
|                                | 27                           | 10×30                      | 0.30                                                     |
|                                | 33                           | 10×35                      | 0.34                                                     |
|                                | 39                           | 10×40                      | 0.39                                                     |
|                                | 47                           | 10×45                      | 0.44                                                     |
|                                | 47                           | 12.5×30                    | 0.43                                                     |
|                                | 56                           | 12.5×35                    | 0.49                                                     |
|                                | 68                           | 12.5×40                    | 0.56                                                     |
|                                | 68                           | 14.5×31.5                  | 0.56                                                     |
|                                | 82                           | 12.5×45                    | 0.63                                                     |
|                                | 82                           | 14.5×35                    | 0.63                                                     |
|                                | 82                           | 16×31.5                    | 0.64                                                     |
|                                | 100                          | 14.5×40                    | 0.72                                                     |
|                                | 100                          | 16×35                      | 0.73                                                     |
|                                | 120                          | 14.5×50                    | 0.85                                                     |
|                                | 120                          | 16×40                      | 0.82                                                     |
|                                | 120                          | 18×31.5                    | 0.80                                                     |
|                                | 150                          | 16×50                      | 0.98                                                     |
|                                | 150                          | 18×40                      | 0.97                                                     |
|                                | 180                          | 18×45                      | 1.09                                                     |
|                                | 220                          | 18×50                      | 1.22                                                     |

## TXW series

105℃ 長寿命(7000~12000時間) 小形化品 -40℃対応  
105℃ 7000~12000 hours, Miniaturized, -40℃~105℃



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                 |                                                                                                                           |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40~+105℃                                                                                                                                                                          |                                                                                                                           |
| 定格電圧範囲<br>Rated Voltage Range                                            | 35~100Vdc                                                                                                                                                                          | 160~450Vdc                                                                                                                |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                   |                                                                                                                           |
| 漏れ電流<br>Leakage Current (MAX)                                            | 35~100Vdc                                                                                                                                                                          | 160~450Vdc                                                                                                                |
|                                                                          | I=0.01CV又は3μAのいずれか大なる値以下<br>(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater.<br>(After 2 minutes)                                                                              | I=3√CV以下(定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)                                              |
|                                                                          | I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                     |                                                                                                                           |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                         | 35 50 63 80 100 160~400 420, 450 (20℃, 120Hz)                                                                             |
|                                                                          | tan δ                                                                                                                                                                              | 0.12 0.10 0.09 0.08 0.08 0.20 0.25                                                                                        |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. |                                                                                                                           |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                      | 35~100Vdc: 初期値の±25%以内<br>Within ±25% of the initial value.<br>160~450Vdc: 初期値の±20%以内<br>Within ±20% of the initial value. |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                       | 規格値の200%以下<br>Not more than 200% of the specified value.                                                                  |
|                                                                          | 漏れ電流<br>Leakage Current                                                                                                                                                            | 規格値以下<br>Not more than the specified value.                                                                               |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                         | 35 50 63 80 100 160~250 350, 400 420, 450 (120Hz)                                                                         |
|                                                                          | Z(-25℃)/Z(+20℃)                                                                                                                                                                    | 2 2 2 2 2 3 5 6                                                                                                           |
|                                                                          | Z(-40℃)/Z(+20℃)                                                                                                                                                                    | 3 3 3 3 3 - - -                                                                                                           |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | TXW             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

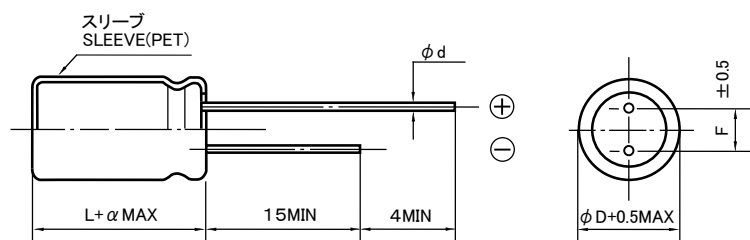
### ◆副記号／OPTION

35~100Vdc : EFC  
160~450Vdc : EFR

### ◆リプル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

| 35~100Vdc         |            |      |      |      |      | 160~450Vdc        |            |      |      |      |      |
|-------------------|------------|------|------|------|------|-------------------|------------|------|------|------|------|
| Frequency (Hz)    | 120        | 1k   | 10k  | 100k | ≤    | Frequency (Hz)    | 60(50)     | 120  | 500  | 1k   | 10k  |
| 係数<br>Coefficient | 33μF       | 0.42 | 0.70 | 0.90 | 1.00 | 係数<br>Coefficient | 160~250Vdc | 0.80 | 1.00 | 1.20 | 1.30 |
|                   | 39~270μF   | 0.50 | 0.73 | 0.92 | 1.00 |                   | 350~450Vdc | 0.80 | 1.00 | 1.25 | 1.40 |
|                   | 330~680μF  | 0.55 | 0.77 | 0.94 | 1.00 |                   |            |      |      |      |      |
|                   | 820~1800μF | 0.60 | 0.80 | 0.96 | 1.00 |                   |            |      |      |      |      |

◆寸法図／DIMENSIONS



(mm)

|          |            |     |     |      |     |    |
|----------|------------|-----|-----|------|-----|----|
| $\phi D$ | 6.3        | 8   | 10  | 12.5 | 16  | 18 |
| $\phi d$ | 0.5        | 0.6 |     |      | 0.8 |    |
| F        | 2.5        | 3.5 | 5.0 |      | 7.5 |    |
| $\alpha$ | 35~100Vdc  | 2.0 |     | -    |     |    |
|          | 160~450Vdc | -   | 2.5 |      |     |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|--------|
|                                |                             |                           | 120Hz                           | 100kHz |
| 35                             | 180                         | 6.3×25                    | 0.605                           | 1.21   |
|                                | 220                         | 6.3×30                    | 0.685                           | 1.37   |
|                                | 330                         | 6.3×40                    | 0.924                           | 1.68   |
|                                | 390                         | 6.3×50                    | 1.11                            | 2.02   |
|                                | 390                         | 8×25                      | 0.951                           | 1.73   |
|                                | 470                         | 8×30                      | 1.11                            | 2.03   |
|                                | 680                         | 8×40                      | 1.41                            | 2.57   |
|                                | 820                         | 8×50                      | 1.82                            | 3.04   |
|                                | 820                         | 10×30                     | 1.48                            | 2.47   |
|                                | 1000                        | 8×60                      | 2.08                            | 3.48   |
|                                | 1200                        | 10×40                     | 1.87                            | 3.12   |
|                                | 1500                        | 10×50                     | 2.21                            | 3.69   |
| 50                             | 1800                        | 10×60                     | 2.50                            | 4.17   |
|                                | 100                         | 6.3×25                    | 0.51                            | 1.02   |
|                                | 120                         | 6.3×30                    | 0.58                            | 1.16   |
|                                | 180                         | 6.3×40                    | 0.71                            | 1.42   |
|                                | 220                         | 6.3×50                    | 0.86                            | 1.72   |
|                                | 220                         | 8×25                      | 0.74                            | 1.48   |
|                                | 270                         | 8×30                      | 0.87                            | 1.74   |
|                                | 390                         | 8×40                      | 1.22                            | 2.23   |
|                                | 470                         | 8×50                      | 1.45                            | 2.65   |
|                                | 470                         | 10×30                     | 1.22                            | 2.22   |
|                                | 560                         | 8×60                      | 1.68                            | 3.07   |
|                                | 680                         | 10×40                     | 1.55                            | 2.82   |
| 63                             | 820                         | 10×50                     | 2.02                            | 3.37   |
|                                | 1000                        | 10×60                     | 2.31                            | 3.86   |
|                                | 82                          | 6.3×25                    | 0.455                           | 0.91   |
|                                | 100                         | 6.3×30                    | 0.515                           | 1.03   |
|                                | 150                         | 6.3×40                    | 0.635                           | 1.27   |
|                                | 180                         | 6.3×50                    | 0.775                           | 1.55   |
|                                | 180                         | 8×25                      | 0.665                           | 1.33   |
|                                | 220                         | 8×30                      | 0.785                           | 1.57   |
|                                | 330                         | 8×40                      | 1.11                            | 2.02   |
|                                | 390                         | 8×50                      | 1.32                            | 2.41   |
|                                | 390                         | 10×30                     | 1.16                            | 2.10   |
|                                | 470                         | 8×60                      | 1.54                            | 2.80   |
| 80                             | 560                         | 10×40                     | 1.43                            | 2.60   |
|                                | 680                         | 10×50                     | 1.71                            | 3.12   |
|                                | 820                         | 10×60                     | 2.15                            | 3.59   |
|                                | 47                          | 6.3×25                    | 0.455                           | 0.91   |
|                                | 56                          | 6.3×30                    | 0.515                           | 1.03   |
|                                | 82                          | 6.3×40                    | 0.635                           | 1.27   |
|                                | 100                         | 6.3×50                    | 0.775                           | 1.55   |
|                                | 100                         | 8×25                      | 0.665                           | 1.33   |
|                                | 120                         | 8×30                      | 0.785                           | 1.57   |
|                                | 180                         | 8×40                      | 1.01                            | 2.02   |
|                                | 220                         | 8×50                      | 1.20                            | 2.41   |
|                                | 220                         | 10×30                     | 1.05                            | 2.10   |
|                                | 270                         | 8×60                      | 1.40                            | 2.80   |
|                                | 270                         | 10×40                     | 1.30                            | 2.60   |

Rated Ripple Current (A r.m.s./105°C)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μF) | 外形寸法<br>Size φD×L<br>(mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------|---------------------------|---------------------------------|--------|
|                                |                             |                           | 120Hz                           | 100kHz |
| 80                             | 390                         | 10×50                     | 1.71                            | 3.12   |
|                                | 470                         | 10×60                     | 1.97                            | 3.59   |
| 100                            | 33                          | 6.3×25                    | 0.382                           | 0.91   |
|                                | 39                          | 6.3×30                    | 0.515                           | 1.03   |
|                                | 56                          | 6.3×40                    | 0.635                           | 1.27   |
|                                | 68                          | 6.3×50                    | 0.775                           | 1.55   |
|                                | 82                          | 8×25                      | 0.665                           | 1.33   |
|                                | 100                         | 8×30                      | 0.785                           | 1.57   |
|                                | 120                         | 8×40                      | 1.01                            | 2.02   |
|                                | 150                         | 8×50                      | 1.20                            | 2.41   |
|                                | 150                         | 10×30                     | 1.05                            | 2.10   |
|                                | 220                         | 8×60                      | 1.40                            | 2.80   |
|                                | 220                         | 10×40                     | 1.30                            | 2.60   |
|                                | 270                         | 10×50                     | 1.56                            | 3.12   |
| 160                            | 330                         | 10×60                     | 1.97                            | 3.59   |
|                                | 56                          | 8×25                      | 0.32                            | 0.448  |
|                                | 68                          | 8×30                      | 0.37                            | 0.518  |
|                                | 82                          | 8×35                      | 0.43                            | 0.602  |
|                                | 82                          | 10×25                     | 0.43                            | 0.602  |
|                                | 100                         | 8×40                      | 0.49                            | 0.686  |
|                                | 120                         | 8×55                      | 0.57                            | 0.798  |
|                                | 120                         | 10×30                     | 0.54                            | 0.756  |
|                                | 150                         | 10×40                     | 0.67                            | 0.938  |
|                                | 150                         | 12.5×25                   | 0.66                            | 0.924  |
|                                | 180                         | 10×50                     | 0.80                            | 1.12   |
|                                | 180                         | 12.5×30                   | 0.77                            | 1.07   |
|                                | 220                         | 10×60                     | 0.94                            | 1.31   |
|                                | 220                         | 12.5×35                   | 0.89                            | 1.24   |
|                                | 220                         | 16×25                     | 0.93                            | 1.30   |
|                                | 270                         | 12.5×40                   | 1.01                            | 1.41   |
|                                | 330                         | 12.5×50                   | 1.20                            | 1.68   |
|                                | 330                         | 16×30                     | 1.20                            | 1.68   |
|                                | 330                         | 18×25                     | 1.18                            | 1.65   |
|                                | 390                         | 12.5×55                   | 1.35                            | 1.89   |
|                                | 390                         | 16×35                     | 1.34                            | 1.87   |
|                                | 390                         | 18×30                     | 1.40                            | 1.96   |
|                                | 470                         | 16×40                     | 1.52                            | 2.12   |
|                                | 470                         | 18×35                     | 1.58                            | 2.21   |
|                                | 560                         | 16×50                     | 1.79                            | 2.50   |
|                                | 560                         | 18×40                     | 1.78                            | 2.49   |
| 200                            | 680                         | 18×45                     | 2.00                            | 2.80   |
|                                | 820                         | 18×50                     | 2.23                            | 3.12   |
|                                | 39                          | 8×25                      | 0.30                            | 0.42   |
|                                | 56                          | 8×30                      | 0.37                            | 0.518  |
|                                | 68                          | 8×40                      | 0.45                            | 0.63   |
|                                | 68                          | 10×25                     | 0.43                            | 0.602  |
|                                | 82                          | 8×45                      | 0.51                            | 0.714  |
|                                | 82                          | 10×30                     | 0.50                            | 0.70   |
|                                | 100                         | 8×55                      | 0.60                            | 0.84   |
|                                | 100                         | 10×40                     | 0.63                            | 0.882  |

### ◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ DxL<br>(mm) | 定格リプル電流<br>RatedRipple Current |        |
|--------------------------------|-----------------------------------|---------------------------------|--------------------------------|--------|
|                                |                                   |                                 | 120Hz                          | 100kHz |
| 200                            | 120                               | 10×45                           | 0.75                           | 1.05   |
|                                | 120                               | 12.5×25                         | 0.65                           | 0.91   |
|                                | 150                               | 10×50                           | 0.83                           | 1.16   |
|                                | 150                               | 12.5×30                         | 0.8                            | 1.12   |
|                                | 180                               | 10×60                           | 0.91                           | 1.27   |
|                                | 180                               | 12.5×35                         | 0.92                           | 1.28   |
|                                | 180                               | 16×25                           | 0.85                           | 1.19   |
|                                | 220                               | 12.5×45                         | 1.09                           | 1.52   |
|                                | 220                               | 16×30                           | 1.01                           | 1.41   |
|                                | 220                               | 18×25                           | 1.00                           | 1.40   |
|                                | 270                               | 12.5×50                         | 1.26                           | 1.76   |
|                                | 270                               | 16×30                           | 1.18                           | 1.65   |
|                                | 270                               | 18×30                           | 1.16                           | 1.62   |
|                                | 330                               | 12.5×60                         | 1.36                           | 1.90   |
|                                | 330                               | 16×40                           | 1.31                           | 1.83   |
|                                | 330                               | 18×30                           | 1.30                           | 1.82   |
|                                | 390                               | 16×45                           | 1.43                           | 2.00   |
|                                | 390                               | 18×35                           | 1.43                           | 2.00   |
|                                | 470                               | 16×50                           | 1.58                           | 2.21   |
|                                | 470                               | 18×40                           | 1.58                           | 2.21   |
| 220                            | 100                               | 10×40                           | 0.66                           | 0.924  |
|                                | 120                               | 10×45                           | 0.75                           | 1.05   |
|                                | 120                               | 12.5×30                         | 0.74                           | 1.03   |
|                                | 150                               | 12.5×35                         | 0.86                           | 1.20   |
|                                | 150                               | 16×25                           | 0.80                           | 1.12   |
|                                | 180                               | 12.5×40                         | 0.99                           | 1.38   |
|                                | 180                               | 16×30                           | 0.94                           | 1.31   |
|                                | 220                               | 12.5×50                         | 1.08                           | 1.51   |
|                                | 220                               | 16×30                           | 1.01                           | 1.41   |
|                                | 220                               | 18×25                           | 0.94                           | 1.31   |
|                                | 270                               | 16×35                           | 1.19                           | 1.66   |
|                                | 270                               | 18×30                           | 1.13                           | 1.58   |
|                                | 330                               | 18×35                           | 1.3                            | 1.82   |
|                                | 390                               | 18×40                           | 1.49                           | 2.08   |
|                                | 470                               | 18×45                           | 1.69                           | 2.36   |
| 250                            | 27                                | 8×25                            | 0.30                           | 0.42   |
|                                | 39                                | 8×30                            | 0.37                           | 0.518  |
|                                | 47                                | 8×35                            | 0.45                           | 0.63   |
|                                | 47                                | 10×25                           | 0.37                           | 0.518  |
|                                | 56                                | 8×40                            | 0.51                           | 0.714  |
|                                | 56                                | 10×30                           | 0.42                           | 0.588  |
|                                | 68                                | 8×50                            | 0.59                           | 0.826  |
|                                | 68                                | 10×35                           | 0.49                           | 0.686  |
|                                | 82                                | 10×40                           | 0.61                           | 0.854  |
|                                | 82                                | 12.5×25                         | 0.54                           | 0.756  |
|                                | 100                               | 10×45                           | 0.68                           | 0.952  |
|                                | 100                               | 12.5×30                         | 0.69                           | 0.966  |
|                                | 120                               | 10×55                           | 0.73                           | 1.02   |
|                                | 120                               | 12.5×35                         | 0.79                           | 1.10   |
|                                | 120                               | 16×25                           | 0.74                           | 1.03   |
|                                | 150                               | 12.5×40                         | 0.92                           | 1.28   |
|                                | 150                               | 16×30                           | 0.89                           | 1.24   |
|                                | 180                               | 12.5×50                         | 0.97                           | 1.35   |
|                                | 180                               | 16×30                           | 0.95                           | 1.33   |
|                                | 180                               | 18×25                           | 0.88                           | 1.23   |
|                                | 220                               | 12.5×55                         | 1.13                           | 1.58   |
|                                | 220                               | 16×35                           | 1.11                           | 1.55   |
|                                | 220                               | 18×30                           | 1.10                           | 1.54   |
|                                | 270                               | 16×40                           | 1.27                           | 1.77   |

Rated Ripple Current (A r.m.s./105°C)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ DxL<br>(mm) | 定格リプル電流<br>RatedRipple Current |        |
|--------------------------------|-----------------------------------|---------------------------------|--------------------------------|--------|
|                                |                                   |                                 | 120Hz                          | 100kHz |
| 250                            | 270                               | 18×35                           | 1.23                           | 1.72   |
|                                | 330                               | 16×50                           | 1.48                           | 2.07   |
|                                | 330                               | 18×40                           | 1.42                           | 1.98   |
|                                | 390                               | 18×45                           | 1.59                           | 2.22   |
|                                | 470                               | 18×50                           | 1.83                           | 2.56   |
| 350                            | 22                                | 8×30                            | 0.25                           | 0.375  |
|                                | 27                                | 8×35                            | 0.29                           | 0.435  |
|                                | 33                                | 8×40                            | 0.33                           | 0.495  |
|                                | 33                                | 10×25                           | 0.31                           | 0.465  |
|                                | 39                                | 8×45                            | 0.37                           | 0.555  |
|                                | 39                                | 10×30                           | 0.36                           | 0.54   |
|                                | 47                                | 8×60                            | 0.43                           | 0.645  |
|                                | 47                                | 10×35                           | 0.41                           | 0.615  |
|                                | 56                                | 10×40                           | 0.47                           | 0.705  |
|                                | 68                                | 10×55                           | 0.55                           | 0.825  |
| 400                            | 12                                | 8×25                            | 0.17                           | 0.255  |
|                                | 15                                | 8×30                            | 0.20                           | 0.300  |
|                                | 18                                | 8×35                            | 0.23                           | 0.345  |
|                                | 22                                | 8×40                            | 0.26                           | 0.39   |
|                                | 22                                | 10×25                           | 0.24                           | 0.36   |
|                                | 27                                | 8×45                            | 0.30                           | 0.45   |
|                                | 27                                | 10×30                           | 0.29                           | 0.435  |
|                                | 33                                | 8×55                            | 0.35                           | 0.525  |
|                                | 33                                | 10×35                           | 0.33                           | 0.495  |
|                                | 39                                | 10×40                           | 0.40                           | 0.60   |
|                                | 39                                | 12.5×25                         | 0.36                           | 0.54   |
|                                | 47                                | 10×45                           | 0.45                           | 0.675  |
|                                | 47                                | 12.5×30                         | 0.44                           | 0.66   |
|                                | 56                                | 10×50                           | 0.52                           | 0.78   |
|                                | 56                                | 12.5×35                         | 0.50                           | 0.75   |
|                                | 68                                | 12.5×40                         | 0.58                           | 0.87   |
|                                | 68                                | 16×25                           | 0.51                           | 0.765  |
|                                | 82                                | 12.5×45                         | 0.65                           | 0.975  |
|                                | 82                                | 16×30                           | 0.61                           | 0.915  |
|                                | 82                                | 18×25                           | 0.61                           | 0.915  |
|                                | 100                               | 12.5×60                         | 0.75                           | 1.12   |
|                                | 100                               | 16×35                           | 0.74                           | 1.11   |
|                                | 100                               | 18×30                           | 0.74                           | 1.11   |
|                                | 120                               | 16×40                           | 0.80                           | 1.20   |
|                                | 120                               | 18×35                           | 0.79                           | 1.18   |
|                                | 150                               | 16×50                           | 0.95                           | 1.42   |
|                                | 150                               | 18×40                           | 0.91                           | 1.36   |
|                                | 180                               | 18×45                           | 1.04                           | 1.56   |
| 420                            | 12                                | 8×30                            | 0.13                           | 0.195  |
|                                | 15                                | 8×35                            | 0.17                           | 0.255  |
|                                | 18                                | 8×40                            | 0.20                           | 0.30   |
|                                | 22                                | 8×50                            | 0.25                           | 0.375  |
|                                | 33                                | 10×40                           | 0.37                           | 0.555  |
|                                | 39                                | 10×45                           | 0.41                           | 0.615  |
|                                | 39                                | 12.5×30                         | 0.39                           | 0.585  |
|                                | 47                                | 12.5×35                         | 0.45                           | 0.675  |
|                                | 56                                | 12.5×40                         | 0.52                           | 0.78   |
|                                | 56                                | 16×25                           | 0.46                           | 0.69   |
|                                | 68                                | 12.5×45                         | 0.58                           | 0.87   |
|                                | 68                                | 16×30                           | 0.55                           | 0.825  |
|                                | 82                                | 12.5×50                         | 0.66                           | 0.990  |
|                                | 82                                | 16×35                           | 0.63                           | 0.945  |
|                                | 82                                | 18×25                           | 0.56                           | 0.84   |
|                                | 100                               | 16×40                           | 0.73                           | 1.09   |
|                                | 100                               | 18×30                           | 0.67                           | 1.00   |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (A r.m.s./105°C)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu$ F) | 外形寸法<br>Size $\phi$ D $\times$ L<br>(mm) | 定格リプル電流<br>Rated Ripple Current |        |
|--------------------------------|-----------------------------------|------------------------------------------|---------------------------------|--------|
|                                |                                   |                                          | 120Hz                           | 100kHz |
| 420                            | 120                               | 18 $\times$ 35                           | 0.77                            | 1.15   |
|                                | 150                               | 18 $\times$ 40                           | 0.90                            | 1.35   |
| 450                            | 12                                | 8 $\times$ 30                            | 0.15                            | 0.225  |
|                                | 15                                | 8 $\times$ 40                            | 0.19                            | 0.285  |
|                                | 18                                | 8 $\times$ 45                            | 0.21                            | 0.315  |
|                                | 33                                | 10 $\times$ 40                           | 0.36                            | 0.540  |
|                                | 33                                | 12.5 $\times$ 30                         | 0.37                            | 0.555  |
|                                | 39                                | 10 $\times$ 50                           | 0.41                            | 0.615  |
|                                | 39                                | 12.5 $\times$ 35                         | 0.42                            | 0.63   |
|                                | 47                                | 12.5 $\times$ 40                         | 0.48                            | 0.72   |
|                                | 47                                | 16 $\times$ 25                           | 0.44                            | 0.66   |
|                                | 56                                | 12.5 $\times$ 45                         | 0.53                            | 0.795  |
|                                | 56                                | 16 $\times$ 30                           | 0.51                            | 0.765  |
|                                | 68                                | 12.5 $\times$ 50                         | 0.62                            | 0.930  |
|                                | 68                                | 16 $\times$ 35                           | 0.59                            | 0.885  |
|                                | 68                                | 18 $\times$ 25                           | 0.57                            | 0.855  |
|                                | 82                                | 16 $\times$ 40                           | 0.68                            | 1.020  |
|                                | 82                                | 18 $\times$ 30                           | 0.65                            | 0.975  |
|                                | 100                               | 18 $\times$ 35                           | 0.74                            | 1.11   |
|                                | 120                               | 18 $\times$ 40                           | 0.83                            | 1.24   |
|                                | 150                               | 18 $\times$ 45                           | 0.95                            | 1.42   |



## HXG series

105°C 3000 時間 高リプル 小形化品

Load Life : 105°C 3000 hours , High Ripple Current, Miniaturized



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------|-------------------------------|---------------------------------------------------|--------------|------------------------------|------------------------------------------------------------|--|-------------------------|---------------------------------------------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160～250, 400～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                 |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～<br/>450</td></tr><tr><td>tan δ</td><td>0.20</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                           | 定格電圧 (Vdc)<br>Rated Voltage | 160～<br>450 | tan δ                         | 0.20                                              | (20℃, 120Hz) |                              |                                                            |  |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～<br>450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 耐久性<br>Endurance                                                         | 105℃中で3000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 3000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td></tr></table> |                             |             | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |              | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |  | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～<br/>250</td><td>400～<br/>450</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>4</td><td>8</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                     | 定格電圧 (Vdc)<br>Rated Voltage | 160～<br>250 | 400～<br>450                   | Z(-25℃)/Z(+20℃)                                   | 4            | 8                            | (120Hz)                                                    |  |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～<br>250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 400～<br>450                 |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |
| Z(-25℃)/Z(+20℃)                                                          | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8                           |             |                               |                                                   |              |                              |                                                            |  |                         |                                             |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | HXG             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

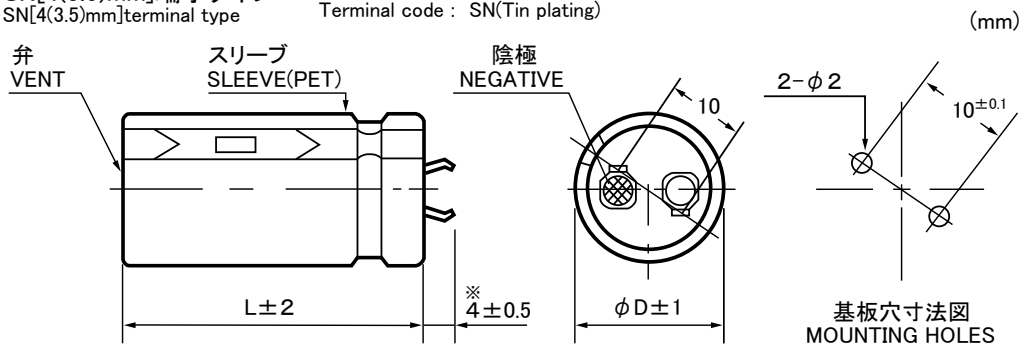
| 周波数 (Hz)<br>Frequency | 60<br>(50)         | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|--------------------|--------------|------|------|------|------|
| 係数<br>Coefficient     | 160~250Vdc<br>0.80 | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
|                       | 400~450Vdc<br>0.80 | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ 端子記号 : SN(錫メッキ)  
SN[4(3.5)mm]terminal type Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.( $\mu$ F) | 160Vdc    |      |           |      | 180Vdc    |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi 30$ |      | $\phi 35$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 560            |           |      |           |      | 30×25     | 2.99 |           |      |
| 680            | 30×25     | 3.18 |           |      | 30×30     | 3.45 |           |      |
| 820            | 30×30     | 3.68 |           |      | 30×30     | 3.70 | 35×25     | 3.56 |
| 1000           | 30×35     | 4.20 | 35×25     | 3.72 | 30×35     | 4.22 | 35×30     | 4.14 |
| 1200           | 30×35     | 4.47 | 35×30     | 4.34 | 30×40     | 4.75 | 35×30     | 4.33 |
| 1500           | 30×45     | 5.35 | 35×35     | 4.99 | 30×45     | 5.37 | 35×35     | 4.97 |
| 1800           | 30×50     | 5.93 | 35×40     | 5.59 | 30×50     | 5.95 | 35×40     | 5.58 |
| 2200           | 30×55     | 6.58 | 35×45     | 6.23 | 30×60     | 6.85 | 35×50     | 6.57 |
| 2700           |           |      | 35×50     | 6.89 |           |      | 35×55     | 7.23 |
| 3300           |           |      | 35×60     | 7.92 |           |      |           |      |

| Cap.( $\mu$ F) | 200Vdc    |      |           |      | 220Vdc    |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi 30$ |      | $\phi 35$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 470            |           |      |           |      | 30×25     | 2.84 |           |      |
| 560            | 30×25     | 3.01 |           |      | 30×30     | 3.26 |           |      |
| 680            | 30×30     | 3.48 |           |      | 30×30     | 3.50 | 35×25     | 3.37 |
| 820            | 30×35     | 3.95 | 35×25     | 3.54 | 30×35     | 3.98 | 35×30     | 3.91 |
| 1000           | 30×35     | 4.24 | 35×30     | 4.13 | 30×40     | 4.50 | 35×35     | 4.46 |
| 1200           | 30×40     | 4.76 | 35×35     | 4.70 | 30×50     | 5.23 | 35×40     | 5.00 |
| 1500           | 30×50     | 5.62 | 35×40     | 5.33 | 30×55     | 5.87 | 35×45     | 5.62 |
| 1800           | 30×60     | 6.43 | 35×45     | 5.92 |           |      | 35×50     | 6.21 |
| 2200           |           |      | 35×55     | 6.87 |           |      | 35×60     | 7.13 |
| 2700           |           |      | 35×60     | 7.53 |           |      |           |      |

| Cap.( $\mu$ F) | 250Vdc    |      |           |      |
|----------------|-----------|------|-----------|------|
|                | $\phi 30$ |      | $\phi 35$ |      |
| 390            | 30×25     | 2.67 |           |      |
| 470            | 30×30     | 3.06 |           |      |
| 560            | 30×30     | 3.28 | 35×25     | 3.18 |
| 680            | 30×35     | 3.73 | 35×30     | 3.69 |
| 820            | 30×40     | 4.19 | 35×35     | 4.19 |
| 1000           | 30×45     | 4.71 | 35×35     | 4.46 |
| 1200           | 30×50     | 5.23 | 35×40     | 5.00 |
| 1500           | 30×60     | 6.07 | 35×45     | 5.62 |
| 1800           |           |      | 35×55     | 6.48 |
| 2200           |           |      | 35×60     | 7.13 |

ケースサイズ Case Size  $\phi D \times L$ (mm) →  
リップル電流 Ripple Current (A.r.m.s./120Hz, 105°C) →

#### ◆標準品一覧表／STANDARD SIZE

| Cap.( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 20 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 68             | 20×25     | 0.94 |           |      |           |      |           |      |           |      |
| 82             | 20×25     | 1.01 | 22×25     | 1.07 |           |      |           |      |           |      |
| 100            | 20×30     | 1.18 | 22×25     | 1.15 |           |      |           |      |           |      |
| 120            | 20×35     | 1.35 | 22×30     | 1.34 | 25×25     | 1.31 |           |      |           |      |
| 150            | 20×40     | 1.56 | 22×35     | 1.55 | 25×25     | 1.43 |           |      |           |      |
| 180            | 20×45     | 1.76 | 22×40     | 1.76 | 25×30     | 1.65 | 30×25     | 1.68 |           |      |
| 220            |           |      | 22×45     | 1.99 | 25×35     | 1.90 | 30×30     | 1.88 |           |      |
| 270            |           |      | 22×50     | 2.24 | 25×40     | 2.16 | 30×30     | 2.01 | 35×25     | 2.12 |
| 330            |           |      |           |      | 25×50     | 2.55 | 30×35     | 2.31 | 35×30     | 2.33 |
| 390            |           |      |           |      |           |      | 30×40     | 2.59 | 35×35     | 2.52 |
| 470            |           |      |           |      |           |      | 30×50     | 3.04 | 35×40     | 2.85 |
| 560            |           |      |           |      |           |      |           |      | 35×45     | 3.18 |
| 680            |           |      |           |      |           |      |           |      | 35×50     | 3.47 |

| Cap.( $\mu$ F) | 420Vdc    |      |           |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 20 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 68             | 20×25     | 0.92 |           |      |           |      |           |      |           |      |
| 82             | 20×30     | 1.07 | 22×25     | 1.05 |           |      |           |      |           |      |
| 100            | 20×35     | 1.23 | 22×30     | 1.22 | 25×25     | 1.20 |           |      |           |      |
| 120            | 20×40     | 1.40 | 22×30     | 1.31 | 25×25     | 1.29 |           |      |           |      |
| 150            | 20×45     | 1.60 | 22×35     | 1.52 | 25×30     | 1.51 | 30×25     | 1.49 |           |      |
| 180            | 20×50     | 1.79 | 22×40     | 1.72 | 25×35     | 1.73 | 30×25     | 1.59 |           |      |
| 220            |           |      | 22×50     | 2.03 | 25×40     | 1.97 | 30×30     | 1.85 | 35×25     | 1.74 |
| 270            |           |      |           |      | 25×45     | 2.22 | 30×35     | 2.12 | 35×30     | 2.04 |
| 330            |           |      |           |      |           |      | 30×40     | 2.41 | 35×30     | 2.16 |
| 390            |           |      |           |      |           |      | 30×45     | 2.68 | 35×35     | 2.45 |
| 470            |           |      |           |      |           |      | 30×50     | 2.98 | 35×45     | 2.92 |
| 560            |           |      |           |      |           |      |           |      | 35×50     | 3.23 |

| Cap.( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 20 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 56             | 20×25     | 0.85 |           |      |           |      |           |      |           |      |
| 68             | 20×25     | 0.92 | 22×25     | 0.97 |           |      |           |      |           |      |
| 82             | 20×30     | 1.07 | 22×25     | 1.05 |           |      |           |      |           |      |
| 100            | 20×35     | 1.23 | 22×30     | 1.22 | 25×25     | 1.20 |           |      |           |      |
| 120            | 20×40     | 1.40 | 22×35     | 1.39 | 25×25     | 1.29 |           |      |           |      |
| 150            | 20×50     | 1.66 | 22×40     | 1.60 | 25×30     | 1.51 | 30×25     | 1.49 |           |      |
| 180            |           |      | 22×45     | 1.80 | 25×35     | 1.73 | 30×30     | 1.72 |           |      |
| 220            |           |      |           |      | 25×40     | 1.97 | 30×30     | 1.85 | 35×25     | 1.74 |
| 270            |           |      |           |      | 25×50     | 2.32 | 30×35     | 2.12 | 35×30     | 2.04 |
| 330            |           |      |           |      |           |      | 30×45     | 2.53 | 35×35     | 2.33 |
| 390            |           |      |           |      |           |      | 30×50     | 2.80 | 35×40     | 2.61 |
| 470            |           |      |           |      |           |      |           |      | 35×45     | 2.92 |
| 560            |           |      |           |      |           |      |           |      | 35×50     | 3.23 |

ケースサイズ Case Size  $\phi$  D×L(mm)  $\rightarrow$   
 リプル電流 Ripple Current (A.r.m.s./120Hz,105℃)  $\rightarrow$

## MXG series

105°C 3000 時間 標準品  
Load Life : 105°C 3000 hours ,Standard



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |             |      |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|------|---------|------------|------------|-------------|------|--------------|-------------------------------|---------------------------------------------------|-------------|-------------|-----|---------|------------------------------|------------------------------------------------------------|-------------|-----|--------------|-----------------|-------------------------|---------------------------------------------|------|------|------|------|------|------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |      |         | -25～+105℃  |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 定格電圧範囲<br>Rated Voltage Range                                            | 10～250Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |      |         | 315～500Vdc |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |             |      |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                  |             |             |      |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80～<br/>100</td><td>160～<br/>450</td><td>500</td><td rowspan="2">(20℃, 120Hz)</td></tr><tr><td>tan δ</td><td>0.55</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.25</td></tr></table>                                                                                                                                                                                                 |             |             |      |         |            |            |             |      |              | 定格電圧 (Vdc)<br>Rated Voltage   | 10                                                | 16          | 25          | 35  | 50      | 63                           | 80～<br>100                                                 | 160～<br>450 | 500 | (20℃, 120Hz) | tan δ           | 0.55                    | 0.50                                        | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.20 | 0.25 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16          | 25          | 35   | 50      | 63         | 80～<br>100 | 160～<br>450 | 500  | (20℃, 120Hz) |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| tan δ                                                                    | 0.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.50        | 0.45        | 0.40 | 0.35    | 0.30       | 0.25       | 0.20        | 0.25 |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 耐久性<br>Endurance                                                         | 105℃中で3000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 3000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="5">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="5">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="5">規格値以下<br/>Not more than the specified value.</td></tr></table> |             |             |      |         |            |            |             |      |              | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |             |             |     |         | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |             |     |              |                 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      |      |      |      |      |      |      |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |             |      |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |             |      |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |             |      |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10～<br/>100</td><td>160～<br/>250</td><td>315～<br/>450</td><td>500</td><td rowspan="3">(120Hz)</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>4</td><td>8</td><td>10</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>12</td><td>15</td><td>—</td><td>—</td></tr></table>                                                                                                                                                                                                                                          |             |             |      |         |            |            |             |      |              | 定格電圧 (Vdc)<br>Rated Voltage   | 10～<br>100                                        | 160～<br>250 | 315～<br>450 | 500 | (120Hz) | Z(-25℃)/Z(+20℃)              | 3                                                          | 4           | 8   | 10           | Z(-40℃)/Z(+20℃) | 12                      | 15                                          | —    | —    |      |      |      |      |      |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10～<br>100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 160～<br>250 | 315～<br>450 | 500  | (120Hz) |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4           | 8           | 10   |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |
| Z(-40℃)/Z(+20℃)                                                          | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 15          | —           | —    |         |            |            |             |      |              |                               |                                                   |             |             |     |         |                              |                                                            |             |     |              |                 |                         |                                             |      |      |      |      |      |      |      |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | MXG             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

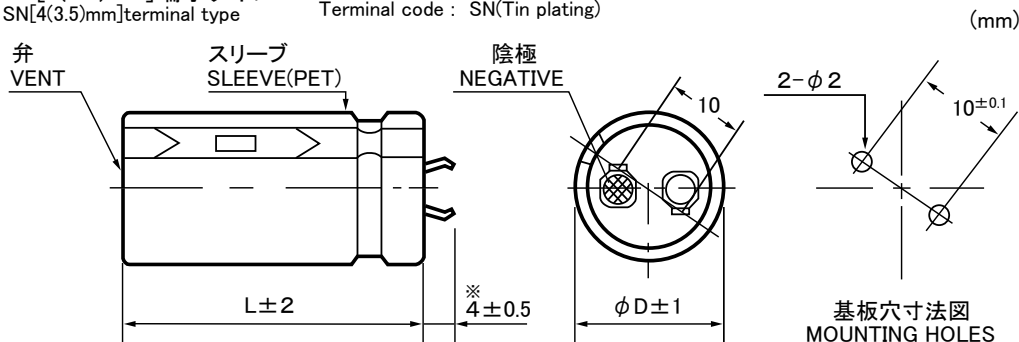
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|------------|--------------|------|------|------|------|
| 10~100Vdc             | 0.90       | 1.00         | 1.03 | 1.05 | 1.10 | 1.15 |
| 160~250Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
| 315~500Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ 端子記号 : SN(錫メッキ)  
SN[4(3.5)mm]terminal type Terminal code : SN(Tin plating)



基板穴寸法図  
MOUNTING HOLES

※ 但し φ 35は3.5±0.5  
For φ 35, 3.5±0.5

◆標準品一覧表／STANDARD SIZE

| Cap.<br>(μF) | 10Vdc |      |       |      |       |      |       |      |       |      | 16Vdc |      |       |      |       |      |       |      |       |      |
|--------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|              | φ 20  | φ 22 | φ 25  | φ 30 | φ 35  | φ 20 | φ 22  | φ 25 | φ 30  | φ 35 | φ 20  | φ 22 | φ 25  | φ 30 | φ 35  | φ 20 | φ 22  | φ 25 | φ 30  | φ 35 |
| 6800         | 20×25 | 1.31 |       |      |       |      |       |      |       |      | 20×25 | 1.80 |       |      |       |      |       |      |       |      |
| 8200         | 20×30 | 1.59 |       |      |       |      |       |      |       |      | 20×30 | 2.08 | 22×25 | 2.08 |       |      |       |      |       |      |
| 10000        | 20×30 | 1.88 | 22×25 | 1.77 |       |      |       |      |       |      | 20×35 | 2.15 | 22×30 | 2.15 |       |      |       |      |       |      |
| 12000        | 20×35 | 2.18 | 22×30 | 2.10 | 25×25 | 1.94 |       |      |       |      | 20×40 | 2.31 | 22×30 | 2.31 | 25×25 | 2.31 |       |      |       |      |
| 15000        | 20×40 | 2.27 | 22×35 | 2.23 | 25×30 | 2.10 |       |      |       |      |       |      | 22×35 | 2.68 | 25×30 | 2.68 |       |      |       |      |
| 18000        |       |      | 22×40 | 2.41 | 25×30 | 2.34 | 30×25 | 2.25 |       |      |       |      | 22×40 | 3.20 | 25×30 | 3.20 | 30×25 | 3.20 |       |      |
| 22000        |       |      | 22×45 | 2.58 | 25×35 | 2.54 | 30×30 | 2.50 |       |      |       |      | 22×45 | 3.36 | 25×35 | 3.36 | 30×30 | 3.36 |       |      |
| 27000        |       |      | 22×50 | 3.17 | 25×40 | 3.07 | 30×30 | 2.95 |       |      |       |      | 22×50 | 3.85 | 25×40 | 3.85 | 30×30 | 3.85 |       |      |
| 33000        |       |      |       |      | 25×45 | 3.39 | 30×35 | 3.33 | 35×30 | 3.21 |       |      |       |      | 25×45 | 4.30 | 30×35 | 4.30 | 35×30 | 4.30 |
| 39000        |       |      |       |      |       |      | 30×40 | 3.70 | 35×35 | 3.68 |       |      |       |      | 25×50 | 4.81 | 30×40 | 4.81 | 35×35 | 4.81 |
| 47000        |       |      |       |      |       |      | 30×45 | 4.22 | 35×40 | 4.16 |       |      |       |      |       |      | 30×45 | 5.53 | 35×40 | 5.53 |
| 56000        |       |      |       |      |       |      |       |      | 35×45 | 5.00 |       |      |       |      |       |      | 30×50 | 6.00 | 35×45 | 6.00 |
| 68000        |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      | 35×50 | 6.40 |

| Cap.<br>(μF) | 25Vdc |      |       |      |       |      |       |      |       |      | 35Vdc |      |       |      |       |      |       |      |       |      |
|--------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|              | φ 20  | φ 22 | φ 25  | φ 30 | φ 35  | φ 20 | φ 22  | φ 25 | φ 30  | φ 35 | φ 20  | φ 22 | φ 25  | φ 30 | φ 35  | φ 20 | φ 22  | φ 25 | φ 30  | φ 35 |
| 2700         |       |      |       |      |       |      |       |      |       |      | 20×25 | 1.29 |       |      |       |      |       |      |       |      |
| 3300         |       |      |       |      |       |      |       |      |       |      | 20×30 | 1.57 |       |      |       |      |       |      |       |      |
| 3900         |       |      |       |      |       |      |       |      |       |      | 20×30 | 1.78 | 22×25 | 1.78 |       |      |       |      |       |      |
| 4700         | 20×25 | 1.65 |       |      |       |      |       |      |       |      | 20×35 | 2.02 | 22×30 | 2.02 |       |      |       |      |       |      |
| 5600         | 20×30 | 1.85 | 22×25 | 1.85 |       |      |       |      |       |      | 20×40 | 2.13 | 22×35 | 2.13 | 25×25 | 2.13 |       |      |       |      |
| 6800         | 20×35 | 2.11 | 22×30 | 2.11 |       |      |       |      |       |      |       |      | 22×40 | 2.41 | 25×30 | 2.41 |       |      |       |      |
| 8200         | 20×40 | 2.34 | 22×30 | 2.34 | 25×25 | 2.34 |       |      |       |      |       |      | 22×45 | 2.85 | 25×35 | 2.85 | 30×25 | 2.85 |       |      |
| 10000        |       |      | 22×35 | 2.65 | 25×30 | 2.65 |       |      |       |      |       |      | 22×50 | 3.05 | 25×40 | 3.05 | 30×30 | 3.05 |       |      |
| 12000        |       |      | 22×40 | 2.81 | 25×30 | 2.81 | 30×25 | 2.81 |       |      |       |      |       |      | 25×45 | 3.37 | 30×35 | 3.37 | 35×30 | 3.37 |
| 15000        |       |      | 22×45 | 3.13 | 25×35 | 3.13 | 30×30 | 3.13 |       |      |       |      |       |      | 25×50 | 3.72 | 30×40 | 3.72 | 35×35 | 3.72 |
| 18000        |       |      |       |      | 25×40 | 3.56 | 30×30 | 3.56 |       |      |       |      |       |      |       |      | 30×45 | 4.37 | 35×35 | 4.37 |
| 22000        |       |      |       |      | 25×50 | 4.04 | 30×35 | 4.04 | 35×30 | 4.04 |       |      |       |      |       |      | 30×50 | 4.92 | 35×40 | 4.92 |
| 27000        |       |      |       |      |       |      | 30×40 | 4.74 | 35×35 | 4.74 |       |      |       |      |       |      |       |      | 35×50 | 5.30 |
| 33000        |       |      |       |      |       |      | 30×50 | 5.50 | 35×40 | 5.50 |       |      |       |      |       |      |       |      |       |      |
| 39000        |       |      |       |      |       |      |       |      | 35×45 | 5.80 |       |      |       |      |       |      |       |      |       |      |
| 47000        |       |      |       |      |       |      |       |      | 35×50 | 6.30 |       |      |       |      |       |      |       |      |       |      |

| Cap.<br>(μF) | 50Vdc |      |       |      |       |      |       |      |       |      | 63Vdc |      |       |      |       |      |       |      |       |      |
|--------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|              | φ 20  | φ 22 | φ 25  | φ 30 | φ 35  | φ 20 | φ 22  | φ 25 | φ 30  | φ 35 | φ 20  | φ 22 | φ 25  | φ 30 | φ 35  | φ 20 | φ 22  | φ 25 | φ 30  | φ 35 |
| 1500         |       |      |       |      |       |      |       |      |       |      | 20×25 | 1.47 |       |      |       |      |       |      |       |      |
| 1800         |       |      |       |      |       |      |       |      |       |      | 20×30 | 1.58 |       |      |       |      |       |      |       |      |
| 2200         | 20×25 | 1.60 |       |      |       |      |       |      |       |      | 20×35 | 1.82 |       |      |       |      |       |      |       |      |
| 2700         | 20×30 | 1.73 | 22×25 | 1.73 |       |      |       |      |       |      |       |      | 22×30 | 2.11 | 25×25 | 2.11 |       |      |       |      |
| 3300         | 20×35 | 1.97 | 22×30 | 1.97 |       |      |       |      |       |      |       |      | 22×35 | 2.33 | 25×30 | 2.33 |       |      |       |      |
| 3900         | 20×40 | 2.22 | 22×35 | 2.22 | 25×25 | 2.22 |       |      |       |      |       |      | 22×40 | 2.55 | 25×30 | 2.55 | 30×25 | 2.55 |       |      |
| 4700         | 20×45 | 2.43 | 22×40 | 2.43 | 25×30 | 2.43 |       |      |       |      |       |      | 22×45 | 2.97 | 25×35 | 2.97 | 30×30 | 2.97 |       |      |
| 5600         |       |      | 22×45 | 2.75 | 25×35 | 2.75 | 30×25 | 2.75 |       |      |       |      |       |      | 25×40 | 3.22 | 30×30 | 3.22 | 35×25 | 3.22 |
| 6800         |       |      | 22×50 | 3.30 | 25×40 | 3.30 | 30×30 | 3.30 | 35×25 | 3.30 |       |      |       |      | 25×45 | 3.65 | 30×35 | 3.65 | 35×30 | 3.65 |
| 8200         |       |      |       |      | 25×45 | 3.60 | 30×35 | 3.60 | 35×30 | 3.60 |       |      |       |      |       |      | 30×40 | 4.04 | 35×35 | 4.04 |
| 10000        |       |      |       |      | 25×50 | 4.05 | 30×40 | 4.05 | 35×30 | 4.05 |       |      |       |      |       |      | 30×45 | 4.48 | 35×40 | 4.48 |
| 12000        |       |      |       |      |       |      | 30×45 | 4.56 | 35×35 | 4.56 |       |      |       |      |       |      |       |      | 35×45 | 4.75 |
| 15000        |       |      |       |      |       |      | 30×50 | 4.77 | 35×40 | 4.77 |       |      |       |      |       |      |       |      | 35×50 | 5.25 |

ケースサイズ Case Size φ D×L(mm) →  
リップル電流 Ripple Current (A.r.m.s./120Hz,105°C) →

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>(μ F) | 80Vdc |      |       |      |       |      |       |      |       |      | 100Vdc |      |       |      |       |      |       |      |       |      |
|---------------|-------|------|-------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|-------|------|
|               | φ 20  |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      |
| 680           |       |      |       |      |       |      |       |      |       |      | 20×25  | 1.15 |       |      |       |      |       |      |       |      |
| 820           |       |      |       |      |       |      |       |      |       |      | 20×30  | 1.32 | 22×25 | 1.32 |       |      |       |      |       |      |
| 1000          | 20×25 | 1.24 |       |      |       |      |       |      |       |      | 20×30  | 1.47 | 22×30 | 1.47 |       |      |       |      |       |      |
| 1200          | 20×30 | 1.44 | 22×25 | 1.44 |       |      |       |      |       |      | 20×35  | 1.69 | 22×30 | 1.69 | 25×25 | 1.69 |       |      |       |      |
| 1500          | 20×30 | 1.59 | 22×30 | 1.59 |       |      |       |      |       |      |        |      | 22×35 | 1.98 | 25×30 | 1.98 |       |      |       |      |
| 1800          | 20×35 | 1.79 | 22×30 | 1.79 | 25×25 | 1.79 |       |      |       |      |        |      | 22×40 | 2.23 | 25×35 | 2.23 | 30×25 | 2.23 |       |      |
| 2200          | 20×40 | 2.03 | 22×35 | 2.03 | 25×30 | 2.03 |       |      |       |      |        |      |       |      | 25×40 | 2.55 | 30×30 | 2.55 | 35×25 | 2.55 |
| 2700          |       |      | 22×40 | 2.39 | 25×35 | 2.39 | 30×25 | 2.39 |       |      |        |      |       |      | 25×45 | 2.89 | 30×35 | 2.89 | 35×30 | 2.89 |
| 3300          |       |      | 22×50 | 2.64 | 25×40 | 2.64 | 30×30 | 2.64 | 35×25 | 2.64 |        |      |       |      | 25×50 | 3.30 | 30×40 | 3.30 | 35×35 | 3.30 |
| 3900          |       |      |       |      | 25×45 | 2.97 | 30×30 | 2.97 | 35×30 | 2.97 |        |      |       |      |       |      | 30×45 | 3.67 | 35×35 | 3.67 |
| 4700          |       |      |       |      | 25×50 | 3.38 | 30×35 | 3.38 | 35×30 | 3.38 |        |      |       |      |       |      | 30×50 | 3.80 | 35×40 | 3.80 |
| 5600          |       |      |       |      |       |      | 30×40 | 3.80 | 35×35 | 3.80 |        |      |       |      |       |      |       |      | 35×45 | 4.05 |
| 6800          |       |      |       |      |       |      | 30×50 | 4.10 | 35×40 | 4.10 |        |      |       |      |       |      |       |      |       |      |
| 8200          |       |      |       |      |       |      |       |      | 35×45 | 4.30 |        |      |       |      |       |      |       |      |       |      |

| Cap.<br>(μ F) | 160Vdc |      |       |      |       |      |       |      |       |      | 180Vdc |      |       |      |       |      |       |      |       |      |
|---------------|--------|------|-------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|-------|------|
|               | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      |
| 330           | 20×25  | 1.32 |       |      |       |      |       |      |       |      | 20×25  | 1.32 |       |      |       |      |       |      |       |      |
| 390           | 20×25  | 1.39 |       |      |       |      |       |      |       |      | 20×30  | 1.53 | 22×25 | 1.43 |       |      |       |      |       |      |
| 470           | 20×30  | 1.62 | 22×25 | 1.51 |       |      |       |      |       |      | 20×35  | 1.75 | 22×30 | 1.67 |       |      |       |      |       |      |
| 560           | 20×35  | 1.85 | 22×30 | 1.75 |       |      |       |      |       |      | 20×40  | 1.98 | 22×30 | 1.75 | 25×25 | 1.59 |       |      |       |      |
| 680           | 20×40  | 2.09 | 22×30 | 1.83 | 25×25 | 1.70 |       |      |       |      | 20×45  | 2.22 | 22×35 | 2.01 | 25×30 | 1.86 |       |      |       |      |
| 820           | 20×50  | 2.47 | 22×35 | 2.10 | 25×30 | 2.00 |       |      |       |      |        |      | 22×40 | 2.27 | 25×35 | 2.14 | 30×25 | 2.00 |       |      |
| 1000          |        |      | 22×40 | 2.37 | 25×35 | 2.20 | 30×25 | 2.20 |       |      |        |      | 22×50 | 2.68 | 25×40 | 2.40 | 30×30 | 2.20 | 35×25 | 2.20 |
| 1200          |        |      | 22×55 | 2.98 | 25×40 | 2.50 | 30×30 | 2.30 | 35×25 | 2.30 |        |      | 22×60 | 3.09 | 25×45 | 2.67 | 30×35 | 2.30 | 35×30 | 2.30 |
| 1500          |        |      |       |      | 25×45 | 2.80 | 30×35 | 2.50 | 35×30 | 2.50 |        |      |       |      | 25×50 | 2.99 | 30×40 | 2.54 | 35×30 | 2.50 |
| 1800          |        |      |       |      | 25×60 | 3.43 | 30×40 | 2.70 | 35×35 | 2.70 |        |      |       |      |       |      | 30×45 | 2.79 | 35×35 | 2.70 |
| 2200          |        |      |       |      |       |      | 30×45 | 2.90 | 35×40 | 2.90 |        |      |       |      |       |      | 30×50 | 3.12 | 35×40 | 2.90 |
| 2700          |        |      |       |      |       |      | 30×60 | 3.58 | 35×45 | 3.10 |        |      |       |      |       |      |       |      | 35×50 | 3.10 |
| 3300          |        |      |       |      |       |      |       |      | 35×55 | 3.24 |        |      |       |      |       |      |       |      | 35×60 | 3.44 |

| Cap.<br>(μ F) | 200Vdc |      |       |      |       |      |       |      |       |      | 220Vdc |      |       |      |       |      |       |      |       |      |
|---------------|--------|------|-------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|-------|------|
|               | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      |
| 220           |        |      |       |      |       |      |       |      |       |      | 20×25  | 1.17 |       |      |       |      |       |      |       |      |
| 270           | 20×25  | 1.25 |       |      |       |      |       |      |       |      | 20×30  | 1.36 | 22×25 | 1.29 |       |      |       |      |       |      |
| 330           | 20×30  | 1.46 | 22×25 | 1.37 |       |      |       |      |       |      | 20×30  | 1.46 | 22×25 | 1.37 |       |      |       |      |       |      |
| 390           | 20×30  | 1.54 | 22×25 | 1.44 |       |      |       |      |       |      | 20×35  | 1.66 | 22×30 | 1.58 | 25×25 | 1.46 |       |      |       |      |
| 470           | 20×35  | 1.76 | 22×30 | 1.67 | 25×25 | 1.53 |       |      |       |      | 20×40  | 1.87 | 22×35 | 1.81 | 25×25 | 1.53 |       |      |       |      |
| 560           | 20×40  | 1.98 | 22×35 | 1.90 | 25×25 | 1.60 |       |      |       |      | 20×45  | 2.09 | 22×40 | 2.04 | 25×30 | 1.79 | 30×25 | 1.61 |       |      |
| 680           | 20×50  | 2.34 | 22×40 | 2.15 | 25×30 | 1.85 | 30×25 | 1.75 |       |      |        |      | 22×45 | 2.29 | 25×35 | 2.05 | 30×25 | 1.78 |       |      |
| 820           |        |      | 22×45 | 2.41 | 25×35 | 2.12 | 30×25 | 2.04 |       |      |        |      | 22×50 | 2.54 | 25×40 | 2.31 | 30×30 | 1.93 | 35×25 | 1.93 |
| 1000          |        |      | 22×55 | 2.84 | 25×45 | 2.58 | 30×30 | 2.30 |       |      |        |      |       |      | 25×50 | 2.72 | 30×35 | 2.33 | 35×30 | 2.33 |
| 1200          |        |      |       |      | 25×50 | 2.84 | 30×35 | 2.65 | 35×30 | 2.65 |        |      |       |      | 25×55 | 2.96 | 30×40 | 2.50 | 35×35 | 2.50 |
| 1500          |        |      |       |      | 25×60 | 3.28 | 30×45 | 2.80 | 35×35 | 2.80 |        |      |       |      |       |      | 30×50 | 2.92 | 35×40 | 2.76 |
| 1800          |        |      |       |      |       |      | 30×50 | 3.08 | 35×40 | 3.08 |        |      |       |      |       |      | 30×60 | 3.38 | 35×45 | 3.11 |
| 2200          |        |      |       |      |       |      | 30×60 | 3.45 | 35×45 | 3.48 |        |      |       |      |       |      |       |      | 35×55 | 3.67 |
| 2700          |        |      |       |      |       |      |       |      | 35×55 | 4.05 |        |      |       |      |       |      |       |      |       |      |

| Cap.<br>(μ F) | 250Vdc |      |       |      |       |      |       |      |       |      | 315Vdc |      |       |      |       |      |       |      |       |      |
|---------------|--------|------|-------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|-------|------|
|               | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      |
| 120           |        |      |       |      |       |      |       |      |       |      | 20×25  | 0.86 |       |      |       |      |       |      |       |      |
| 150           |        |      |       |      |       |      |       |      |       |      | 20×30  | 1.00 | 22×25 | 0.98 |       |      |       |      |       |      |
| 180           |        |      |       |      |       |      |       |      |       |      | 20×35  | 1.14 | 22×30 | 1.13 |       |      |       |      |       |      |
| 220           | 20×25  | 1.17 |       |      |       |      |       |      |       |      | 20×40  | 1.30 | 22×30 | 1.22 | 25×25 | 1.17 |       |      |       |      |
| 270           | 20×30  | 1.36 | 22×25 | 1.30 |       |      |       |      |       |      | 20×45  | 1.48 | 22×35 | 1.40 | 25×30 | 1.37 |       |      |       |      |
| 330           | 20×35  | 1.57 | 22×30 | 1.51 | 25×25 | 1.41 |       |      |       |      | 20×50  | 1.67 | 22×40 | 1.59 | 25×35 | 1.56 | 30×25 | 1.38 |       |      |
| 390           | 20×40  | 1.76 | 22×35 | 1.71 | 25×25 | 1.47 |       |      |       |      |        |      | 22×50 | 1.84 | 25×35 | 1.65 | 30×30 | 1.60 | 35×25 | 1.44 |
| 470           | 20×45  | 1.98 | 22×40 | 1.94 | 25×30 | 1.71 | 30×25 | 1.57 |       |      |        |      | 22×55 | 2.05 | 25×45 | 1.96 | 30×35 | 1.83 | 35×30 | 1.71 |
| 560           |        |      | 22×45 | 2.16 | 25×35 | 1.95 | 30×25 | 1.60 |       |      |        |      |       |      | 25×50 | 2.17 | 30×35 | 1.89 | 35×30 | 1.72 |
| 680           |        |      | 22×50 | 2.40 | 25×40 | 2.20 | 30×30 | 1.87 | 35×25 | 1.70 |        |      |       |      | 25×55 | 2.41 | 30×40 | 2.12 | 35×35 | 1.98 |
| 820           |        |      | 22×60 | 2.77 | 25×45 | 2.45 | 30×35 | 2.14 | 35×30 | 2.00 |        |      |       |      |       |      | 30×50 | 2.51 | 35×40 | 2.22 |
| 1000          |        |      |       |      | 25×55 | 2.87 | 30×40 | 2.40 | 35×35 | 2.20 |        |      |       |      |       |      | 30×55 | 2.75 | 35×45 | 2.45 |
| 1200          |        |      |       |      |       |      | 30×45 | 2.65 | 35×35 | 2.30 |        |      |       |      |       |      |       |      | 35×50 | 2.67 |
| 1500          |        |      |       |      |       |      | 30×55 | 3.12 | 35×45 | 2.67 |        |      |       |      |       |      |       |      | 35×60 | 3.08 |
| 1800          |        |      |       |      |       |      |       |      | 35×50 | 2.89 |        |      |       |      |       |      |       |      |       |      |
| 2200          |        |      |       |      |       |      |       |      | 35×60 | 3.32 |        |      |       |      |       |      |       |      |       |      |

ケースサイズ Case Size  $\phi$  D×L(mm)

リプル電流 Ripple Current (A.r.m.s./120Hz, 105°C)



### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>(μ F) | 350Vdc |      |       |      |       |      |       |      |       |      | 385Vdc |      |       |      |       |      |       |      |       |      |
|---------------|--------|------|-------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|-------|------|
|               | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      |
| 100           | 20×25  | 0.81 |       |      |       |      |       |      |       |      | 20×25  | 0.81 |       |      |       |      |       |      |       |      |
| 120           | 20×30  | 0.93 | 22×25 | 0.91 |       |      |       |      |       |      | 20×30  | 0.94 | 22×25 | 0.91 |       |      |       |      |       |      |
| 150           | 20×35  | 1.08 | 22×30 | 1.06 |       |      |       |      |       |      | 20×35  | 1.08 | 22×30 | 1.07 |       |      |       |      |       |      |
| 180           | 20×40  | 1.22 | 22×30 | 1.14 | 25×25 | 1.10 |       |      |       |      | 20×40  | 1.22 | 22×35 | 1.21 | 25×25 | 1.11 |       |      |       |      |
| 220           | 20×45  | 1.38 | 22×35 | 1.31 | 25×30 | 1.28 |       |      |       |      | 20×45  | 1.39 | 22×40 | 1.38 | 25×30 | 1.29 | 30×25 | 1.25 |       |      |
| 270           | 20×50  | 1.56 | 22×45 | 1.55 | 25×35 | 1.47 | 30×25 | 1.31 |       |      |        |      | 22×45 | 1.56 | 25×35 | 1.47 | 30×30 | 1.46 |       |      |
| 330           |        |      | 22×50 | 1.75 | 25×40 | 1.67 | 30×30 | 1.53 | 35×25 | 1.39 |        |      | 22×55 | 1.81 | 25×40 | 1.67 | 30×30 | 1.53 | 35×25 | 1.37 |
| 390           |        |      | 22×55 | 1.93 | 25×45 | 1.86 | 30×35 | 1.74 | 35×30 | 1.63 |        |      | 22×60 | 2.00 | 25×50 | 1.94 | 30×35 | 1.73 | 35×30 | 1.62 |
| 470           |        |      |       |      | 25×50 | 2.06 | 30×40 | 1.96 | 35×30 | 1.66 |        |      |       |      | 25×55 | 2.15 | 30×40 | 1.94 | 35×35 | 1.84 |
| 560           |        |      |       |      | 25×55 | 2.27 | 30×45 | 2.17 | 35×35 | 1.90 |        |      |       |      |       |      | 30×45 | 2.15 | 35×40 | 2.07 |
| 680           |        |      |       |      |       |      | 30×50 | 2.40 | 35×40 | 2.13 |        |      |       |      |       |      | 30×55 | 2.51 | 35×45 | 2.29 |
| 820           |        |      |       |      |       |      | 30×55 | 2.62 | 35×45 | 2.36 |        |      |       |      |       |      |       |      | 35×50 | 2.50 |
| 1000          |        |      |       |      |       |      |       |      | 35×55 | 2.77 |        |      |       |      |       |      |       |      | 35×60 | 2.89 |
| 1200          |        |      |       |      |       |      |       |      | 35×60 | 2.97 |        |      |       |      |       |      |       |      |       |      |

| Cap.<br>(μ F) | 400Vdc |      |       |      |       |      |       |      |       |      | 420Vdc |      |       |      |       |      |       |      |       |      |
|---------------|--------|------|-------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|-------|------|
|               | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      |
| 68            | 20×25  | 0.69 |       |      |       |      |       |      |       |      | 20×25  | 0.69 |       |      |       |      |       |      |       |      |
| 82            | 20×25  | 0.75 | 22×25 | 0.78 |       |      |       |      |       |      | 20×25  | 0.75 | 22×25 | 0.78 |       |      |       |      |       |      |
| 100           | 20×30  | 0.87 | 22×25 | 0.85 |       |      |       |      |       |      | 20×30  | 0.86 | 22×25 | 0.85 | 25×25 | 0.88 |       |      |       |      |
| 120           | 20×35  | 0.99 | 22×30 | 0.97 | 25×25 | 0.96 |       |      |       |      | 20×35  | 0.98 | 22×30 | 0.97 | 25×25 | 0.95 |       |      |       |      |
| 150           | 20×40  | 1.13 | 22×35 | 1.13 | 25×25 | 1.04 |       |      |       |      | 20×40  | 1.13 | 22×35 | 1.12 | 25×30 | 1.11 | 30×25 | 1.10 |       |      |
| 180           | 20×40  | 1.23 | 22×35 | 1.22 | 25×30 | 1.20 | 30×25 | 1.18 |       |      | 20×45  | 1.27 | 22×40 | 1.27 | 25×30 | 1.19 | 30×25 | 1.16 |       |      |
| 220           | 20×50  | 1.44 | 22×45 | 1.44 | 25×35 | 1.37 | 30×25 | 1.25 |       |      |        |      | 22×45 | 1.43 | 25×35 | 1.36 | 30×30 | 1.35 | 35×25 | 1.27 |
| 270           |        |      | 22×50 | 1.62 | 25×40 | 1.56 | 30×30 | 1.45 | 35×25 | 1.34 |        |      | 22×50 | 1.62 | 25×40 | 1.55 | 30×30 | 1.43 | 35×25 | 1.30 |
| 330           |        |      | 22×55 | 1.82 | 25×45 | 1.76 | 30×35 | 1.66 | 35×30 | 1.57 |        |      | 22×60 | 1.86 | 25×50 | 1.74 | 30×35 | 1.64 | 35×30 | 1.54 |
| 390           |        |      |       |      | 25×50 | 1.94 | 30×40 | 1.86 | 35×30 | 1.60 |        |      |       |      | 25×55 | 2.00 | 30×40 | 1.83 | 35×35 | 1.75 |
| 470           |        |      |       |      | 25×55 | 2.15 | 30×45 | 2.07 | 35×35 | 1.83 |        |      |       |      | 25×60 | 2.21 | 30×45 | 2.04 | 35×40 | 1.97 |
| 560           |        |      |       |      |       |      | 30×50 | 2.28 | 35×40 | 2.05 |        |      |       |      |       |      | 30×55 | 2.35 | 35×45 | 2.18 |
| 680           |        |      |       |      |       |      | 30×55 | 2.50 | 35×45 | 2.27 |        |      |       |      |       |      | 30×60 | 2.57 | 35×50 | 2.39 |
| 820           |        |      |       |      |       |      |       |      | 35×55 | 2.65 |        |      |       |      |       |      |       |      | 35×55 | 2.59 |

| Cap.<br>(μ F) | 450Vdc |      |       |      |       |      |       |      |       |      | 500Vdc |      |       |      |       |      |       |      |       |      |
|---------------|--------|------|-------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|-------|------|
|               | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      | φ 20   |      | φ 22  |      | φ 25  |      | φ 30  |      | φ 35  |      |
| 39            |        |      |       |      |       |      |       |      |       |      | 20×25  | 0.51 |       |      |       |      |       |      |       |      |
| 47            |        |      |       |      |       |      |       |      |       |      | 20×30  | 0.59 | 22×25 | 0.58 |       |      |       |      |       |      |
| 56            | 20×25  | 0.63 |       |      |       |      |       |      |       |      | 20×35  | 0.67 | 22×30 | 0.66 |       |      |       |      |       |      |
| 68            | 20×25  | 0.69 | 22×25 | 0.72 |       |      |       |      |       |      | 20×40  | 0.76 | 22×30 | 0.73 | 25×25 | 0.72 |       |      |       |      |
| 82            | 20×30  | 0.80 | 22×25 | 0.78 |       |      |       |      |       |      | 20×45  | 0.85 | 22×35 | 0.83 | 25×30 | 0.83 | 30×25 | 0.83 |       |      |
| 100           | 20×35  | 0.91 | 22×30 | 0.90 | 25×25 | 0.89 |       |      |       |      |        |      | 22×40 | 0.94 | 25×35 | 0.94 | 30×25 | 0.91 |       |      |
| 120           | 20×35  | 0.99 | 22×30 | 0.98 | 25×25 | 0.95 |       |      |       |      |        |      | 22×50 | 1.08 | 25×35 | 1.02 | 30×30 | 1.04 | 35×25 | 1.01 |
| 150           | 20×45  | 1.18 | 22×35 | 1.13 | 25×30 | 1.11 | 30×25 | 1.10 |       |      |        |      | 22×55 | 1.24 | 25×45 | 1.21 | 30×35 | 1.19 | 35×30 | 1.18 |
| 180           |        |      | 22×40 | 1.27 | 25×35 | 1.27 | 30×25 | 1.16 |       |      |        |      | 22×60 | 1.38 | 25×50 | 1.36 | 30×40 | 1.34 | 35×30 | 1.25 |
| 220           |        |      | 22×50 | 1.49 | 25×40 | 1.44 | 30×30 | 1.35 | 35×25 | 1.26 |        |      |       |      | 25×55 | 1.52 | 30×45 | 1.51 | 35×40 | 1.51 |
| 270           |        |      | 22×55 | 1.68 | 25×45 | 1.62 | 30×35 | 1.55 | 35×30 | 1.48 |        |      |       |      |       |      | 30×50 | 1.69 | 35×40 | 1.62 |
| 330           |        |      |       |      | 25×50 | 1.82 | 30×40 | 1.75 | 35×30 | 1.52 |        |      |       |      |       |      | 30×55 | 1.89 | 35×45 | 1.81 |
| 390           |        |      |       |      | 25×60 | 2.07 | 30×45 | 1.93 | 35×35 | 1.74 |        |      |       |      |       |      |       |      | 35×55 | 2.08 |
| 470           |        |      |       |      |       |      | 30×50 | 2.14 | 35×40 | 1.95 |        |      |       |      |       |      |       |      | 35×60 | 2.28 |
| 560           |        |      |       |      |       |      | 30×55 | 2.34 | 35×45 | 2.16 |        |      |       |      |       |      |       |      |       |      |
| 680           |        |      |       |      |       |      |       |      | 35×55 | 2.51 |        |      |       |      |       |      |       |      |       |      |
| 820           |        |      |       |      |       |      |       |      | 35×60 | 2.71 |        |      |       |      |       |      |       |      |       |      |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\longrightarrow$   
 リプル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$

## MXH series

105°C 2000 時間 小形化品  
Load Life : 105°C 2000 hours , Miniaturized



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                              |                                                            |                         |                                             |    |    |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|----|----|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |    |    |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～550Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |    |    |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |    |    |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                              |                                                            |                         |                                             |    |    |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～450</td><td>475～550</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 400～450                                           | 475～550                      | tan δ                                                      | 0.20                    | 0.25                                        |    |    |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 475～550                       |                                                   |                              |                                                            |                         |                                             |    |    |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.25                          |                                                   |                              |                                                            |                         |                                             |    |    |
| 耐久性<br>Endurance                                                         | 105℃中で2000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 2000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |    |    |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |    |    |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |    |    |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                                   |                              |                                                            |                         |                                             |    |    |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～450</td><td>475, 500</td><td>550</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>8</td><td>10</td><td>12</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                          | 定格電圧 (Vdc)<br>Rated Voltage   | 400～450                                           | 475, 500                     | 550                                                        | Z(-25℃)/Z(+20℃)         | 8                                           | 10 | 12 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 475, 500                      | 550                                               |                              |                                                            |                         |                                             |    |    |
| Z(-25℃)/Z(+20℃)                                                          | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10                            | 12                                                |                              |                                                            |                         |                                             |    |    |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | MXH             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

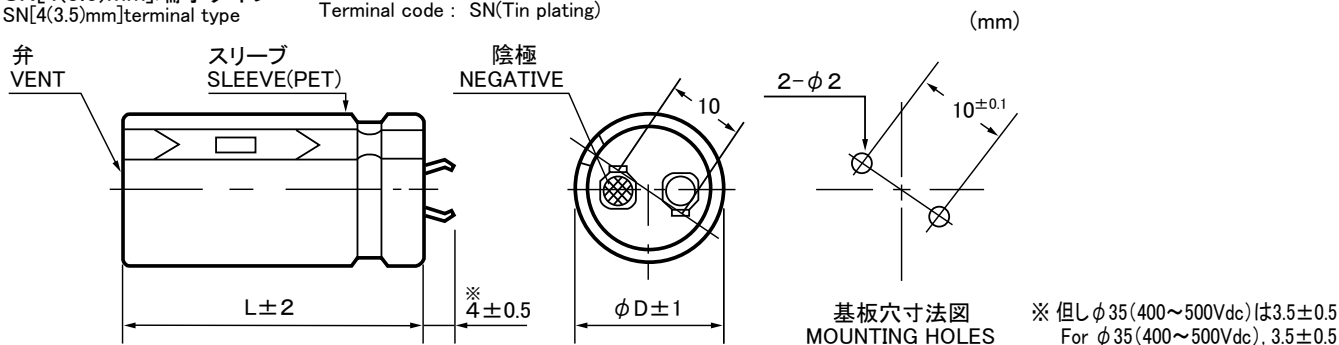
|                       |            |              |      |      |      |      |
|-----------------------|------------|--------------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数 Coefficient        | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ 端子記号 : SN(錫メッキ)  
SN[4(3.5)mm]terminal type Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>(μF) | 400Vdc |      |       |      |       |      |       |      | 420Vdc |      |       |      |       |      |       |      |
|--------------|--------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|
|              | φ 22   | φ 25 | φ 30  | φ 35 | φ 22  | φ 25 | φ 30  | φ 35 | φ 22   | φ 25 | φ 30  | φ 35 | φ 22  | φ 25 | φ 30  | φ 35 |
| 100          |        |      |       |      |       |      |       |      | 22×25  | 0.85 |       |      |       |      |       |      |
| 120          | 22×25  | 0.92 |       |      |       |      |       |      | 22×30  | 0.98 |       |      |       |      |       |      |
| 150          | 22×30  | 1.08 |       |      |       |      |       |      | 22×30  | 1.06 | 25×25 | 1.04 |       |      |       |      |
| 180          | 22×30  | 1.15 | 25×25 | 1.12 |       |      |       |      | 22×35  | 1.20 | 25×30 | 1.20 |       |      |       |      |
| 220          | 22×35  | 1.32 | 25×30 | 1.30 |       |      |       |      | 22×40  | 1.37 | 25×30 | 1.28 | 30×25 | 1.24 |       |      |
| 270          | 22×40  | 1.50 | 25×35 | 1.49 | 30×25 | 1.33 |       |      | 22×50  | 1.62 | 25×35 | 1.47 | 30×30 | 1.44 | 35×25 | 1.32 |
| 330          | 22×50  | 1.76 | 25×40 | 1.68 | 30×30 | 1.55 | 35×25 | 1.44 | 22×60  | 1.87 | 25×45 | 1.75 | 30×35 | 1.65 | 35×30 | 1.56 |
| 390          | 22×55  | 1.94 | 25×45 | 1.86 | 30×35 | 1.75 | 35×30 | 1.63 |        |      | 25×50 | 1.93 | 30×40 | 1.84 | 35×30 | 1.62 |
| 470          |        |      | 25×50 | 2.07 | 30×40 | 1.97 | 35×30 | 1.68 |        |      | 25×60 | 2.21 | 30×45 | 2.05 | 35×35 | 1.86 |
| 560          |        |      | 25×60 | 2.37 | 30×45 | 2.18 | 35×35 | 1.92 |        |      |       |      | 30×50 | 2.25 | 35×40 | 2.10 |
| 680          |        |      |       |      | 30×50 | 2.41 | 35×40 | 2.15 |        |      |       |      | 30×60 | 2.59 | 35×45 | 2.29 |
| 820          |        |      |       |      | 30×60 | 2.76 | 35×45 | 2.37 |        |      |       |      |       |      | 35×50 | 2.50 |
| 1000         |        |      |       |      |       |      | 35×55 | 2.78 |        |      |       |      |       |      | 35×60 | 2.88 |
| 1200         |        |      |       |      |       |      | 35×60 | 2.95 |        |      |       |      |       |      |       |      |

| Cap.<br>(μF) | 450Vdc |      |       |      |       |      |       |      | 475Vdc |      |       |      |       |      |       |      |
|--------------|--------|------|-------|------|-------|------|-------|------|--------|------|-------|------|-------|------|-------|------|
|              | φ 22   | φ 25 | φ 30  | φ 35 | φ 22  | φ 25 | φ 30  | φ 35 | φ 22   | φ 25 | φ 30  | φ 35 | φ 22  | φ 25 | φ 30  | φ 35 |
| 68           |        |      |       |      |       |      |       |      | 22×25  | 0.67 |       |      |       |      |       |      |
| 82           |        |      |       |      |       |      |       |      | 22×30  | 0.77 |       |      |       |      |       |      |
| 100          | 22×25  | 0.85 |       |      |       |      |       |      | 22×35  | 0.88 | 25×25 | 0.83 |       |      |       |      |
| 120          | 22×30  | 0.98 | 25×25 | 0.96 |       |      |       |      | 22×40  | 0.99 | 25×30 | 0.96 |       |      |       |      |
| 150          | 22×35  | 1.13 | 25×30 | 1.12 |       |      |       |      | 22×45  | 1.14 | 25×35 | 1.10 | 30×25 | 1.04 |       |      |
| 180          | 22×40  | 1.28 | 25×30 | 1.20 | 30×25 | 1.18 |       |      | 22×50  | 1.27 | 25×40 | 1.24 | 30×30 | 1.19 | 35×25 | 1.15 |
| 220          | 22×45  | 1.44 | 25×35 | 1.37 | 30×30 | 1.36 |       |      | 22×60  | 1.47 | 25×45 | 1.40 | 30×35 | 1.36 | 35×30 | 1.33 |
| 270          | 22×50  | 1.61 | 25×40 | 1.56 | 30×30 | 1.44 | 35×25 | 1.33 |        |      | 25×55 | 1.62 | 30×40 | 1.54 | 35×35 | 1.52 |
| 330          | 22×60  | 1.86 | 25×50 | 1.82 | 30×35 | 1.64 | 35×30 | 1.54 |        |      |       |      | 30×45 | 1.73 | 35×40 | 1.71 |
| 390          |        |      | 25×55 | 2.01 | 30×40 | 1.83 | 35×35 | 1.76 |        |      |       |      | 30×55 | 1.98 | 35×40 | 1.79 |
| 470          |        |      | 25×60 | 2.21 | 30×45 | 2.05 | 35×40 | 1.97 |        |      |       |      | 30×60 | 2.18 | 35×50 | 2.09 |
| 560          |        |      |       |      | 30×50 | 2.26 | 35×45 | 2.18 |        |      |       |      |       |      | 35×55 | 2.29 |
| 680          |        |      |       |      | 30×60 | 2.59 | 35×50 | 2.38 |        |      |       |      |       |      |       |      |
| 820          |        |      |       |      |       |      | 35×60 | 2.74 |        |      |       |      |       |      |       |      |

| Cap.<br>(μF) | 500.Vdc |      |       |      |       |      |       |      | 550Vdc |      |       |      |
|--------------|---------|------|-------|------|-------|------|-------|------|--------|------|-------|------|
|              | φ 22    | φ 25 | φ 30  | φ 35 | φ 30  | φ 35 | φ 30  | φ 35 | φ 30   | φ 35 | φ 30  | φ 35 |
| 56           | 22×25   | 0.63 |       |      |       |      |       |      |        |      |       |      |
| 68           | 22×30   | 0.72 |       |      |       |      |       |      |        |      |       |      |
| 82           | 22×30   | 0.80 | 25×25 | 0.78 |       |      |       |      |        |      |       |      |
| 100          | 22×35   | 0.92 | 25×30 | 0.90 |       |      |       |      | 30×25  | 0.80 |       |      |
| 120          | 22×40   | 1.03 | 25×35 | 1.02 | 30×25 | 0.97 |       |      | 30×30  | 0.93 | 35×25 | 0.92 |
| 150          | 22×50   | 1.20 | 25×40 | 1.17 | 30×30 | 1.13 | 35×25 | 1.09 | 30×35  | 1.07 | 35×30 | 1.05 |
| 180          | 22×60   | 1.37 | 25×45 | 1.31 | 30×35 | 1.28 | 35×30 | 1.26 | 30×40  | 1.21 | 35×30 | 1.14 |
| 220          |         |      | 25×50 | 1.46 | 30×40 | 1.45 | 35×35 | 1.44 | 30×45  | 1.36 | 35×35 | 1.30 |
| 270          |         |      | 25×60 | 1.70 | 30×45 | 1.63 | 35×35 | 1.52 | 30×55  | 1.57 | 35×40 | 1.47 |
| 330          |         |      |       |      | 30×50 | 1.81 | 35×40 | 1.71 |        |      | 35×50 | 1.72 |
| 390          |         |      |       |      | 30×60 | 2.06 | 35×50 | 1.99 |        |      | 35×55 | 1.88 |
| 470          |         |      |       |      |       |      | 35×55 | 2.19 |        |      |       |      |

ケースサイズ Case Size φD×L(mm) ↑  
リプル電流 Ripple Current (A.r.m.s./120Hz,105°C) →

## MXK series

105°C 3000 時間 超小型品

Load Life : 105°C 3000 hours ,Ultra Miniaturized



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |             |             |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|------|------------|-------------|-------------|--|-------------------------------|---------------------------------------------------|-------------|-------------|-------------|-----------------|------------|-------------|-------------|------------------------------|------------------------------------------------------------|------|------|------|------|------|------|------|-------------------------|---------------------------------------------|--|--|--|--|--|--|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |             |      |            | -25～+105℃   |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 16～250Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |             |             |      |            | 400～500Vdc  |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |             |             |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV 又は5mAいずれかの小なる値(定格電圧印加5分後)<br>I=3√CV or 5mA whichever is smaller(After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                         |             |             |             |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80～<br/>100</td><td>160～<br/>450</td><td>475,<br/>500</td></tr><tr><td>tan δ</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                    |             |             |             |      |            |             |             |  | 定格電圧 (Vdc)<br>Rated Voltage   | 16                                                | 25          | 35          | 50          | 63              | 80～<br>100 | 160～<br>450 | 475,<br>500 | tan δ                        | 0.50                                                       | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.20 | 0.25 |                         |                                             |  |  |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25          | 35          | 50          | 63   | 80～<br>100 | 160～<br>450 | 475,<br>500 |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| tan δ                                                                    | 0.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.45        | 0.40        | 0.35        | 0.30 | 0.25       | 0.20        | 0.25        |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 耐久性<br>Endurance                                                         | 105℃中で3000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 3000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="8">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="8">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="8">規格値以下<br/>Not more than the specified value.</td></tr></table> |             |             |             |      |            |             |             |  | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |             |             |             |                 |            |             |             | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      |      |      |      |      |      |      | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |  |  |  |  |  |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |             |             |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |             |             |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |             |             |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16～<br/>100</td><td>160～<br/>250</td><td>400～<br/>450</td><td>475,<br/>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>4</td><td>8</td><td>10</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>12</td><td>15</td><td>—</td><td>—</td></tr></table> (120Hz)                                                                                                                                                                                                                                                     |             |             |             |      |            |             |             |  | 定格電圧 (Vdc)<br>Rated Voltage   | 16～<br>100                                        | 160～<br>250 | 400～<br>450 | 475,<br>500 | Z(-25℃)/Z(+20℃) | 3          | 4           | 8           | 10                           | Z(-40℃)/Z(+20℃)                                            | 12   | 15   | —    | —    |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16～<br>100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 160～<br>250 | 400～<br>450 | 475,<br>500 |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4           | 8           | 10          |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| Z(-40℃)/Z(+20℃)                                                          | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 15          | —           | —           |      |            |             |             |  |                               |                                                   |             |             |             |                 |            |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | MXK             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|------------|--------------|------|------|------|------|
| 16~100Vdc             | 0.90       | 1.00         | 1.03 | 1.05 | 1.10 | 1.15 |
| 160~250Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
| 400~500Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

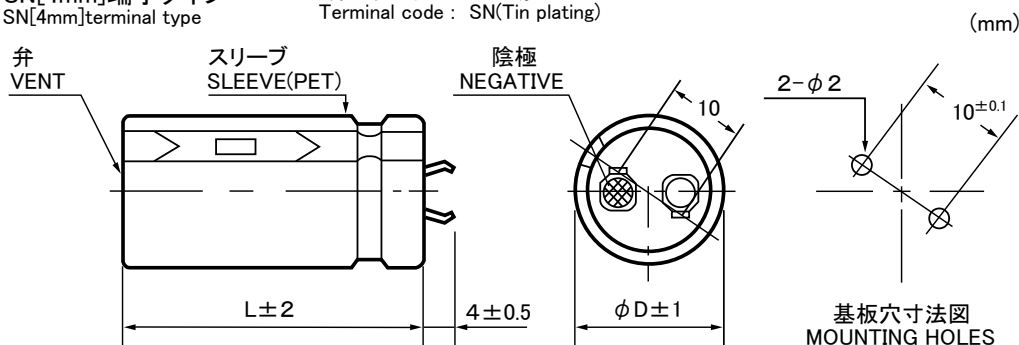
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 16Vdc     |           |           |           |           |           |           |           | 25Vdc     |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 8200               |           |           |           |           | 22×25     | 2.91      |           |           | 22×25     | 2.91      |           |           |           |           |           |           |
| 10000              |           |           |           |           | 22×30     | 3.41      |           |           | 22×30     | 3.41      |           |           |           |           |           |           |
| 12000              |           |           |           |           | 22×30     | 3.34      | 25×25     | 2.82      | 22×30     | 3.34      | 25×25     | 2.82      |           |           |           |           |
| 15000              | 22×25     | 2.90      |           |           | 22×35     | 3.75      | 25×30     | 3.33      | 22×35     | 3.75      | 25×30     | 3.33      |           |           |           |           |
| 18000              | 22×30     | 3.43      | 25×25     | 2.91      | 22×40     | 4.14      | 25×35     | 3.78      | 22×40     | 4.14      | 25×35     | 3.78      |           |           |           |           |
| 22000              | 22×35     | 3.87      | 25×30     | 3.44      | 22×50     | 4.88      | 25×40     | 4.14      | 22×50     | 4.88      | 25×40     | 4.14      | 30×30     | 5.13      |           |           |
| 27000              | 22×40     | 4.25      | 25×30     | 3.27      | 22×55     | 5.12      | 25×45     | 4.44      | 22×55     | 5.12      | 25×45     | 4.44      | 30×35     | 5.76      | 35×30     | 5.11      |
| 33000              | 22×45     | 4.57      | 25×35     | 3.69      | 30×30     | 5.27      |           |           |           |           | 25×50     | 4.72      | 30×40     | 6.30      | 35×35     | 5.76      |
| 39000              | 22×50     | 4.88      | 25×40     | 4.08      | 30×30     | 5.14      |           |           |           |           | 25×60     | 5.34      | 30×45     | 6.79      | 35×35     | 5.55      |
| 47000              | 22×60     | 5.50      | 25×50     | 4.87      | 30×35     | 5.78      | 35×30     | 5.07      |           |           |           |           | 30×50     | 7.20      | 35×40     | 6.09      |
| 56000              |           |           | 25×55     | 5.11      | 30×40     | 6.34      | 35×35     | 5.76      |           |           |           |           | 30×60     | 8.07      | 35×45     | 6.57      |
| 68000              |           |           |           |           | 30×50     | 7.40      | 35×40     | 6.30      |           |           |           |           |           |           | 35×55     | 7.52      |
| 82000              |           |           |           |           | 30×55     | 7.76      | 35×45     | 6.76      |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 35Vdc     |           |           |           |           |           |           |           | 50Vdc     |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 3300               |           |           |           |           | 22×25     | 2.47      |           |           | 22×25     | 2.47      |           |           |           |           |           |           |
| 3900               |           |           |           |           | 22×30     | 2.90      |           |           | 22×30     | 2.90      |           |           |           |           |           |           |
| 4700               |           |           |           |           | 22×30     | 2.89      | 25×25     | 2.48      | 22×30     | 2.89      | 25×25     | 2.48      |           |           |           |           |
| 5600               | 22×25     | 2.80      |           |           | 22×35     | 3.27      | 25×30     | 2.94      | 22×35     | 3.27      | 25×30     | 2.94      |           |           |           |           |
| 6800               | 22×30     | 3.29      |           |           | 22×40     | 3.63      | 25×35     | 3.34      | 22×40     | 3.63      | 25×35     | 3.34      | 30×25     | 3.79      |           |           |
| 8200               | 22×35     | 3.72      | 25×25     | 2.73      | 22×50     | 4.28      | 25×40     | 3.69      | 22×50     | 4.28      | 25×40     | 3.69      | 30×30     | 4.43      | 35×25     | 3.82      |
| 10000              | 22×40     | 4.10      | 25×30     | 3.22      | 22×55     | 4.55      | 25×45     | 3.99      | 22×55     | 4.55      | 25×45     | 3.99      | 30×35     | 5.00      | 35×30     | 4.52      |
| 12000              | 22×45     | 4.44      | 25×35     | 3.66      | 30×30     | 5.04      |           |           |           |           | 25×50     | 4.28      | 30×40     | 5.52      | 35×30     | 4.41      |
| 15000              | 22×50     | 4.72      | 25×40     | 3.99      | 30×30     | 4.94      |           |           |           |           | 25×60     | 4.84      | 30×45     | 5.97      | 35×40     | 5.62      |
| 18000              | 22×60     | 5.33      | 25×45     | 4.33      | 30×35     | 5.57      | 35×30     | 4.95      |           |           |           |           | 30×55     | 6.83      | 35×45     | 6.07      |
| 22000              |           |           | 25×55     | 4.98      | 30×40     | 6.10      | 35×35     | 5.58      |           |           |           |           |           |           | 35×50     | 6.45      |
| 27000              |           |           |           |           | 30×50     | 7.12      | 35×40     | 6.10      |           |           |           |           |           |           | 35×60     | 7.26      |
| 33000              |           |           |           |           | 30×55     | 7.49      | 35×45     | 6.55      |           |           |           |           |           |           |           |           |
| 39000              |           |           |           |           |           |           | 35×50     | 6.95      |           |           |           |           |           |           |           |           |
| 47000              |           |           |           |           |           |           | 35×60     | 7.82      |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 63Vdc     |           |           |           |           |           |           |           | 80Vdc     |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 1800               |           |           |           |           | 22×25     | 2.21      |           |           | 22×25     | 2.21      |           |           |           |           |           |           |
| 2200               | 22×25     | 2.28      |           |           | 22×30     | 2.59      | 25×25     | 2.32      | 22×30     | 2.59      | 25×25     | 2.32      |           |           |           |           |
| 2700               | 22×30     | 2.67      |           |           | 22×35     | 2.94      | 25×30     | 2.72      | 22×35     | 2.94      | 25×30     | 2.72      |           |           |           |           |
| 3300               | 22×30     | 2.70      | 25×25     | 2.38      | 22×40     | 3.27      | 25×30     | 2.70      | 22×40     | 3.27      | 25×30     | 2.70      | 30×25     | 3.39      |           |           |
| 3900               | 22×35     | 3.06      | 25×30     | 2.80      | 22×45     | 3.58      | 25×35     | 3.07      | 22×45     | 3.58      | 25×35     | 3.07      | 30×30     | 3.92      |           |           |
| 4700               | 22×40     | 3.40      | 25×35     | 3.18      | 30×25     | 3.53      |           |           | 22×50     | 3.89      | 25×40     | 3.41      | 30×30     | 3.99      | 35×25     | 3.52      |
| 5600               | 22×45     | 3.72      | 25×35     | 3.13      | 30×30     | 4.11      | 35×25     | 3.65      | 22×60     | 4.41      | 25×45     | 3.71      | 30×35     | 4.50      | 35×30     | 4.15      |
| 6800               | 22×55     | 4.29      | 25×40     | 3.48      | 30×35     | 4.64      | 35×30     | 4.29      |           |           | 25×55     | 4.30      | 30×40     | 4.99      | 35×35     | 4.69      |
| 8200               | 22×60     | 4.55      | 25×50     | 4.12      | 30×35     | 4.68      | 35×30     | 4.24      |           |           | 25×60     | 4.55      | 30×45     | 5.44      | 35×40     | 5.19      |
| 10000              |           |           | 25×55     | 4.38      | 30×45     | 5.60      | 35×35     | 4.80      |           |           |           |           | 30×55     | 6.23      | 35×45     | 5.63      |
| 12000              |           |           |           |           | 30×50     | 6.03      | 35×40     | 5.30      |           |           |           |           |           |           | 35×50     | 6.04      |
| 15000              |           |           |           |           | 30×60     | 6.80      | 35×45     | 5.72      |           |           |           |           |           |           | 35×60     | 6.80      |
| 18000              |           |           |           |           |           |           | 35×55     | 6.59      |           |           |           |           |           |           |           |           |
| 22000              |           |           |           |           |           |           | 35×60     | 6.92      |           |           |           |           |           |           |           |           |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\rightarrow$   
リップル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\rightarrow$

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 100Vdc    |           |           |           |           |           |           |           | 160Vdc    |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 560                |           |           |           |           |           |           |           |           | 22×25     | 1.60      |           |           |           |           |           |           |
| 680                |           |           |           |           |           |           |           |           | 22×30     | 1.87      | 25×25     | 1.72      |           |           |           |           |
| 820                |           |           |           |           |           |           |           |           | 22×35     | 2.14      | 25×30     | 1.92      |           |           |           |           |
| 1000               | 22×25     | 2.01      |           |           |           |           |           |           | 22×40     | 2.42      | 25×30     | 2.07      | 30×25     | 1.84      |           |           |
| 1200               | 22×30     | 2.33      |           |           |           |           |           |           | 22×45     | 2.69      | 25×35     | 2.36      | 30×30     | 2.00      |           |           |
| 1500               | 22×30     | 2.41      | 25×25     | 2.17      |           |           |           |           | 22×55     | 3.17      | 25×40     | 2.67      | 30×30     | 2.16      | 35×25     | 1.77      |
| 1800               | 22×35     | 2.74      | 25×30     | 2.54      |           |           |           |           | 22×60     | 3.46      | 25×50     | 3.18      | 30×35     | 2.46      | 35×30     | 2.13      |
| 2200               | 22×40     | 3.05      | 25×35     | 2.89      | 30×25     | 3.15      |           |           |           |           | 25×55     | 3.48      | 30×40     | 2.77      | 35×35     | 2.45      |
| 2700               | 22×50     | 3.59      | 25×40     | 3.21      | 30×30     | 3.67      | 35×25     | 3.31      |           |           |           |           | 30×50     | 3.32      | 35×40     | 2.73      |
| 3300               | 22×55     | 3.89      | 25×45     | 3.51      | 30×35     | 4.15      | 35×30     | 3.88      |           |           |           |           | 30×55     | 3.59      | 35×45     | 2.96      |
| 3900               |           |           | 25×50     | 3.79      | 30×40     | 4.60      | 35×30     | 3.89      |           |           |           |           |           |           | 35×50     | 3.23      |
| 4700               |           |           | 25×60     | 4.31      | 30×45     | 5.04      | 35×35     | 4.40      |           |           |           |           |           |           | 35×60     | 3.72      |
| 5600               |           |           |           |           | 30×50     | 5.46      | 35×40     | 4.87      |           |           |           |           |           |           |           |           |
| 6800               |           |           |           |           | 30×60     | 6.16      | 35×45     | 5.32      |           |           |           |           |           |           |           |           |
| 8200               |           |           |           |           |           |           | 35×55     | 6.10      |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 180Vdc    |           |           |           |           |           |           |           | 200Vdc    |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 470                | 22×25     | 1.53      |           |           |           |           |           |           | 22×25     | 1.53      |           |           |           |           |           |           |
| 560                | 22×30     | 1.75      |           |           |           |           |           |           | 22×30     | 1.78      | 25×25     | 1.65      |           |           |           |           |
| 680                | 22×30     | 1.87      | 25×25     | 1.70      |           |           |           |           | 22×35     | 2.04      | 25×30     | 1.85      |           |           |           |           |
| 820                | 22×35     | 2.13      | 25×30     | 2.00      |           |           |           |           | 22×40     | 2.30      | 25×30     | 1.99      | 30×25     | 1.79      |           |           |
| 1000               | 22×40     | 2.41      | 25×35     | 2.29      | 30×25     | 1.79      |           |           | 22×45     | 2.58      | 25×35     | 2.28      | 30×30     | 1.94      |           |           |
| 1200               | 22×50     | 2.85      | 25×40     | 2.58      | 30×30     | 2.13      | 35×25     | 1.79      | 22×50     | 2.85      | 25×40     | 2.56      | 30×30     | 2.10      | 35×25     | 1.75      |
| 1500               | 22×60     | 3.32      | 25×45     | 2.87      | 30×35     | 2.44      | 35×30     | 1.91      |           |           | 25×50     | 3.06      | 30×35     | 2.41      | 35×30     | 2.09      |
| 1800               |           |           | 25×55     | 3.36      | 30×40     | 2.73      | 35×30     | 2.09      |           |           | 25×60     | 3.52      | 30×45     | 2.99      | 35×35     | 2.41      |
| 2200               |           |           |           |           | 30×45     | 3.00      | 35×35     | 2.38      |           |           |           |           | 30×50     | 3.22      | 35×40     | 2.66      |
| 2700               |           |           |           |           | 30×55     | 3.53      | 35×45     | 2.99      |           |           |           |           | 30×60     | 3.72      | 35×45     | 2.91      |
| 3300               |           |           |           |           |           |           | 35×50     | 3.21      |           |           |           |           |           |           | 35×55     | 3.43      |
| 3900               |           |           |           |           |           |           | 35×55     | 3.45      |           |           |           |           |           |           | 35×60     | 3.66      |

| Cap.<br>( $\mu$ F) | 220Vdc    |           |           |           |           |           |           |           | 250Vdc    |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 330                |           |           |           |           |           |           |           |           | 22×25     | 1.38      |           |           |           |           |           |           |
| 390                | 22×25     | 1.46      |           |           |           |           |           |           | 22×30     | 1.58      |           |           |           |           |           |           |
| 470                | 22×30     | 1.70      |           |           |           |           |           |           | 22×30     | 1.68      | 25×25     | 1.55      |           |           |           |           |
| 560                | 22×35     | 1.93      | 25×25     | 1.64      |           |           |           |           | 22×35     | 1.91      | 25×30     | 1.81      |           |           |           |           |
| 680                | 22×40     | 2.19      | 25×30     | 1.91      |           |           |           |           | 22×40     | 2.16      | 25×35     | 2.07      | 30×25     | 1.66      |           |           |
| 820                | 22×45     | 2.44      | 25×35     | 2.19      | 30×25     | 1.74      |           |           | 22×50     | 2.55      | 25×40     | 2.33      | 30×30     | 1.97      | 35×25     | 1.68      |
| 1000               | 22×50     | 2.72      | 25×40     | 2.47      | 30×30     | 2.06      | 35×25     | 1.74      | 22×55     | 2.82      | 25×45     | 2.59      | 30×35     | 2.26      | 35×30     | 1.89      |
| 1200               | 22×60     | 3.13      | 25×45     | 2.74      | 30×35     | 2.36      | 35×30     | 2.09      |           |           | 25×50     | 2.86      | 30×40     | 2.51      | 35×30     | 1.94      |
| 1500               |           |           | 25×55     | 3.22      | 30×40     | 2.64      | 35×35     | 2.22      |           |           |           |           | 30×45     | 2.76      | 35×35     | 2.22      |
| 1800               |           |           |           |           | 30×45     | 2.91      | 35×35     | 2.34      |           |           |           |           | 30×50     | 3.03      | 35×40     | 2.49      |
| 2200               |           |           |           |           | 30×55     | 3.42      | 35×45     | 2.92      |           |           |           |           | 30×60     | 3.49      | 35×50     | 3.00      |
| 2700               |           |           |           |           |           |           | 35×50     | 3.13      |           |           |           |           |           |           | 35×55     | 3.23      |
| 3300               |           |           |           |           |           |           | 35×60     | 3.62      |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 400Vdc    |           |           |           |           |           |           |           | 420Vdc    |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 120                |           |           |           |           |           |           |           |           | 22×25     | 0.95      |           |           |           |           |           |           |
| 150                | 22×25     | 1.03      |           |           |           |           |           |           | 22×25     | 1.02      |           |           |           |           |           |           |
| 180                | 22×30     | 1.19      | 25×25     | 1.15      |           |           |           |           | 22×30     | 1.20      | 25×25     | 1.16      |           |           |           |           |
| 220                | 22×30     | 1.26      | 25×25     | 1.20      |           |           |           |           | 22×35     | 1.38      | 25×30     | 1.35      |           |           |           |           |
| 270                | 22×35     | 1.37      | 25×30     | 1.32      |           |           |           |           | 22×40     | 1.57      | 25×35     | 1.55      | 30×25     | 1.36      |           |           |
| 330                | 22×45     | 1.77      | 25×35     | 1.65      | 30×25     | 1.39      |           |           | 22×45     | 1.72      | 25×35     | 1.61      | 30×30     | 1.59      | 35×25     | 1.45      |
| 390                | 22×50     | 1.97      | 25×40     | 1.85      | 30×30     | 1.65      | 35×25     | 1.48      | 22×55     | 2.00      | 25×40     | 1.80      | 30×30     | 1.61      | 35×25     | 1.45      |
| 470                | 22×55     | 2.11      | 25×45     | 2.07      | 30×35     | 1.89      | 35×30     | 1.69      | 22×60     | 2.19      | 25×50     | 2.18      | 30×35     | 1.85      | 35×30     | 1.72      |
| 560                |           |           | 25×55     | 2.32      | 30×40     | 2.12      | 35×30     | 1.75      |           |           | 25×55     | 2.32      | 30×40     | 2.07      | 35×35     | 1.97      |
| 680                |           |           | 25×60     | 2.56      | 30×45     | 2.35      | 35×35     | 2.00      |           |           | 25×60     | 2.43      | 30×45     | 2.27      | 35×40     | 2.22      |
| 820                |           |           |           |           | 30×50     | 2.53      | 35×40     | 2.21      |           |           |           |           | 30×45     | 2.29      | 35×40     | 2.22      |
| 1000               |           |           |           |           | 30×55     | 2.66      | 35×45     | 2.48      |           |           |           |           | 30×50     | 2.50      | 35×45     | 2.45      |
| 1200               |           |           |           |           | 30×60     | 2.91      | 35×50     | 2.70      |           |           |           |           | 30×55     | 2.68      | 35×45     | 2.45      |
|                    |           |           |           |           |           |           | 35×55     | 2.85      |           |           |           |           | 30×60     | 2.79      | 35×50     | 2.64      |
|                    |           |           |           |           |           |           | 35×60     | 2.99      |           |           |           |           |           |           | 35×55     | 2.76      |
|                    |           |           |           |           |           |           |           |           |           |           |           |           |           |           | 35×60     | 3.03      |



### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      | 475Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 |           |      |           |      |           |      |           |      | 22×25     | 0.79 |           |      |           |      |           |      |
| 100                |           |      |           |      |           |      |           |      | 22×30     | 0.90 | 25×25     | 0.90 |           |      |           |      |
| 120                | 22×25     | 0.95 |           |      |           |      |           |      | 22×30     | 0.97 | 25×30     | 1.02 |           |      |           |      |
| 150                | 22×30     | 1.12 | 25×25     | 1.08 |           |      |           |      | 22×35     | 1.13 | 25×30     | 1.12 | 30×25     | 1.11 |           |      |
| 180                | 22×30     | 1.17 | 25×25     | 1.14 |           |      |           |      | 22×40     | 1.27 | 25×35     | 1.27 | 30×30     | 1.27 |           |      |
|                    | 22×35     | 1.27 | 25×30     | 1.24 |           |      |           |      |           |      |           |      |           |      |           |      |
| 220                | 22×35     | 1.34 | 25×30     | 1.34 | 30×25     | 1.29 |           |      | 22×45     | 1.44 | 25×40     | 1.44 | 30×30     | 1.37 | 35×25     | 1.27 |
|                    | 22×40     | 1.45 |           |      |           |      |           |      |           |      |           |      |           |      |           |      |
| 270                | 22×40     | 1.53 | 25×35     | 1.54 | 30×25     | 1.34 |           |      | 22×55     | 1.68 | 25×45     | 1.63 | 30×35     | 1.56 | 35×30     | 1.51 |
|                    | 22×45     | 1.65 |           |      | 30×30     | 1.49 |           |      |           |      |           |      |           |      |           |      |
| 330                | 22×50     | 1.81 | 25×40     | 1.72 | 30×30     | 1.58 | 35×25     | 1.42 |           |      | 25×50     | 1.83 | 30×40     | 1.77 | 35×30     | 1.57 |
|                    | 22×55     | 1.88 | 25×45     | 1.85 |           |      |           |      |           |      |           |      |           |      |           |      |
| 390                | 22×55     | 1.98 | 25×45     | 1.91 | 30×35     | 1.80 | 35×30     | 1.68 |           |      | 25×60     | 2.08 | 30×40     | 1.85 | 35×35     | 1.79 |
|                    | 22×60     | 2.07 | 25×50     | 2.04 |           |      |           |      |           |      |           |      |           |      |           |      |
| 470                |           |      | 25×55     | 2.21 | 30×40     | 2.02 | 35×30     | 1.69 |           |      |           |      | 30×50     | 2.17 | 35×40     | 2.00 |
|                    |           |      |           |      |           |      | 35×35     | 1.92 |           |      |           |      |           |      |           |      |
| 560                |           |      | 25×60     | 2.41 | 30×45     | 2.24 | 35×35     | 1.92 |           |      |           |      | 30×55     | 2.38 | 35×45     | 2.22 |
|                    |           |      |           |      |           |      | 35×40     | 2.15 |           |      |           |      |           |      |           |      |
| 680                |           |      |           |      | 30×50     | 2.41 | 35×40     | 2.16 |           |      |           |      |           |      | 35×50     | 2.45 |
|                    |           |      |           |      | 30×55     | 2.54 | 35×45     | 2.38 |           |      |           |      |           |      |           |      |
| 820                |           |      |           |      | 30×60     | 2.77 | 35×45     | 2.36 |           |      |           |      |           |      | 35×60     | 2.80 |
|                    |           |      |           |      |           |      | 35×50     | 2.59 |           |      |           |      |           |      |           |      |
| 1000               |           |      |           |      |           |      | 35×55     | 2.78 |           |      |           |      |           |      |           |      |
|                    |           |      |           |      |           |      | 35×60     | 2.90 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 68                 | 22×25     | 0.73 |           |      |           |      |           |      |
| 82                 | 22×30     | 0.83 |           |      |           |      |           |      |
| 100                | 22×30     | 0.91 |           |      |           |      |           |      |
| 120                | 22×35     | 1.03 | 25×30     | 1.03 |           |      |           |      |
| 150                | 22×40     | 1.18 | 25×30     | 1.12 |           |      |           |      |
| 180                | 22×45     | 1.33 | 25×35     | 1.28 | 30×30     | 1.28 | 35×25     | 1.20 |
| 220                | 22×50     | 1.50 | 25×40     | 1.45 | 30×30     | 1.36 | 35×30     | 1.42 |
| 270                | 22×60     | 1.73 | 25×50     | 1.70 | 30×35     | 1.56 | 35×30     | 1.50 |
| 330                |           |      | 25×55     | 1.90 | 30×40     | 1.76 | 35×35     | 1.71 |
| 390                |           |      |           |      | 30×45     | 1.95 | 35×40     | 1.91 |
| 470                |           |      |           |      | 30×55     | 2.26 | 35×45     | 2.13 |
| 560                |           |      |           |      | 30×60     | 2.47 | 35×50     | 2.33 |
| 680                |           |      |           |      |           |      | 35×55     | 2.56 |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\longrightarrow$  ↑  
 リプル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$  ↑

## NXG series

105°C 10000 時間品  
Load Life : 105°C 10000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--|-------------------------------|---------------------------------------------------|----------|------------------------------|------------------------------------------------------------|------|-------------------------|---------------------------------------------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400~500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                       |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td><td>475, 500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                        |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | 475, 500 | tan δ                        | 0.20                                                       | 0.25 |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 475, 500 |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.25     |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 耐久性<br>Endurance                                                         | 105℃中で10000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 10000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td></tr></table> |          |  | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |          | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td><td>475, 500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>8</td><td>12</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                        |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | 475, 500 | Z(-25℃)/Z(+20℃)              | 8                                                          | 12   |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 475, 500 |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| Z(-25℃)/Z(+20℃)                                                          | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12       |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | NXG             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

|                       |            |              |      |      |      |      |
|-----------------------|------------|--------------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数 Coefficient        | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

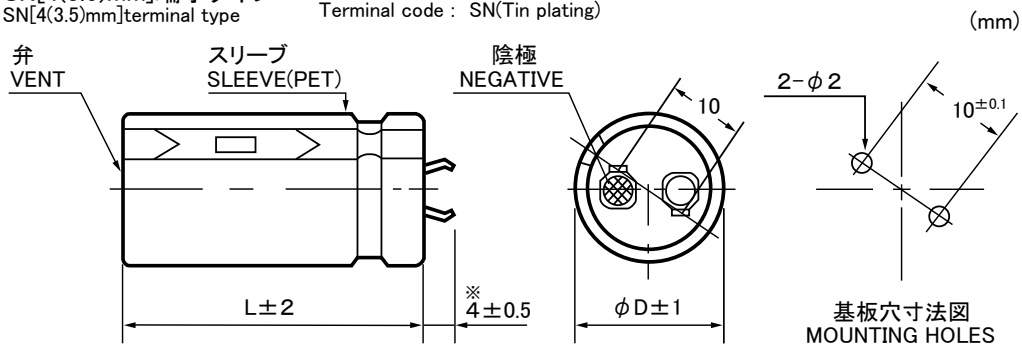
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

# ◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ  
SN[4(3.5)mm]terminal type

Terminal code : SN(Tin plating)



# ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      |           |      | 420Vdc    |      |           |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 20 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 20 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 150                | 20×45     | 1.22 |           |      |           |      |           |      |           |      | 20×45     | 1.20 |           |      |           |      |           |      |           |      |
| 180                | 20×50     | 1.37 | 22×40     | 1.33 | 25×35     | 1.32 |           |      |           |      |           |      | 22×45     | 1.35 | 25×35     | 1.29 |           |      |           |      |
| 220                |           |      | 22×50     | 1.55 | 25×40     | 1.50 | 30×30     | 1.43 | 35×25     | 1.34 |           |      | 22×55     | 1.57 | 25×40     | 1.47 | 30×30     | 1.39 | 35×25     | 1.31 |
| 270                |           |      | 22×60     | 1.80 | 25×45     | 1.70 | 30×35     | 1.63 |           |      |           |      |           |      | 25×50     | 1.73 | 30×35     | 1.59 | 35×30     | 1.53 |
| 330                |           |      |           |      | 25×55     | 1.98 | 30×40     | 1.84 | 35×30     | 1.63 |           |      |           |      | 25×55     | 1.93 | 30×40     | 1.80 | 35×35     | 1.75 |
| 390                |           |      |           |      | 25×60     | 2.18 | 30×45     | 2.04 | 35×35     | 1.85 |           |      |           |      |           |      | 30×50     | 2.09 | 35×40     | 1.95 |
| 470                |           |      |           |      |           |      | 30×50     | 2.26 | 35×40     | 2.07 |           |      |           |      |           |      | 30×60     | 2.40 | 35×45     | 2.16 |
| 560                |           |      |           |      |           |      | 30×60     | 2.59 | 35×50     | 2.45 |           |      |           |      |           |      |           |      | 35×55     | 2.51 |
| 680                |           |      |           |      |           |      |           |      | 35×60     | 2.80 |           |      |           |      |           |      |           |      | 35×60     | 2.73 |

| Cap.<br>( $\mu$ F) | 450Vdc    |           |           |           |           |           |           |           |           |           | 475Vdc    |           |           |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 120                | 20×45     | 1.11      |           |           |           |           |           |           |           |           |           |           | 22×40     | 1.00      | 25×30     | 0.96      |           |           |           |           |
| 150                | 20×50     | 1.25      | 22×45     | 1.26      | 25×35     | 1.21      |           |           |           |           |           |           | 22×45     | 1.14      | 25×35     | 1.11      |           |           |           |           |
| 180                |           |           | 22×50     | 1.41      | 25×40     | 1.37      | 30×30     | 1.31      | 35×25     | 1.24      |           |           | 22×50     | 1.28      | 25×40     | 1.25      | 30×30     | 1.19      | 35×25     | 1.15      |
| 220                |           |           | 25×60     | 1.63      | 25×45     | 1.55      | 30×35     | 1.49      |           |           |           |           | 22×60     | 1.47      | 25×50     | 1.45      | 30×35     | 1.36      | 35×30     | 1.34      |
| 270                |           |           |           |           | 25×55     | 1.80      | 30×40     | 1.69      | 35×30     | 1.52      |           |           |           |           | 25×60     | 1.68      | 30×40     | 1.54      | 35×35     | 1.53      |
| 330                |           |           |           |           | 25×60     | 2.01      | 30×45     | 1.90      | 35×35     | 1.74      |           |           |           |           |           |           | 30×55     | 1.88      | 35×40     | 1.72      |
| 390                |           |           |           |           |           |           | 30×50     | 2.10      | 35×40     | 1.94      |           |           |           |           |           |           |           |           | 35×50     | 2.00      |
| 470                |           |           |           |           |           |           |           |           | 35×50     | 2.29      |           |           |           |           |           |           |           |           | 35×55     | 2.20      |
| 560                |           |           |           |           |           |           |           |           | 35×60     | 2.61      |           |           |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 500Vdc    |           |           |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 100                |           |           | 22×40     | 0.94      | 25×30     | 0.90      | 30×25     | 0.90      |           |           |
| 120                |           |           | 22×45     | 1.05      | 25×35     | 1.02      | 30×30     | 1.12      |           |           |
| 150                |           |           | 22×50     | 1.20      | 25×40     | 1.17      | 30×35     | 1.27      | 35×25     | 1.09      |
| 180                |           |           | 22×60     | 1.37      | 25×45     | 1.31      | 30×40     | 1.44      | 35×30     | 1.26      |
| 220                |           |           |           |           | 25×55     | 1.52      | 30×50     | 1.69      | 35×35     | 1.44      |
| 270                |           |           |           |           |           |           | 30×55     | 1.88      | 35×40     | 1.62      |
| 330                |           |           |           |           |           |           |           |           | 35×45     | 1.82      |
| 390                |           |           |           |           |           |           |           |           | 35×50     | 2.00      |
| 470                |           |           |           |           |           |           |           |           | 35×55     | 2.20      |

ケースサイズ Case Size  $\phi D \times L$ (mm) →  
リップル電流 Ripple Current (A.r.m.s./120Hz, 105°C) →

## THC series

125°C 2000時間 標準品  
Load Life : 125°C 2000 hours Standard



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |                               |                                                   |                              |                                                            |                         |                                             |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=5√CV (定格電圧印加5分後)<br>I=5√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>400～450</td></tr><tr><td>tan δ</td><td>0.25</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                             | 定格電圧(Vdc)<br>Rated Voltage | 400～450                       | tan δ                                             | 0.25                         | (20℃, 120Hz)                                               |                         |                                             |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 400～450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |                               |                                                   |                              |                                                            |                         |                                             |
| tan δ                                                                    | 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 耐久性<br>Endurance                                                         | 125℃中で2000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 2000 hours at 125℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> |                            | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |                               |                                                   |                              |                                                            |                         |                                             |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧(Vdc)<br/>Rated Voltage</td><td>400～450</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>10</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                     | 定格電圧(Vdc)<br>Rated Voltage | 400～450                       | Z(-25℃)/Z(+20℃)                                   | 10                           | (120Hz)                                                    |                         |                                             |
| 定格電圧(Vdc)<br>Rated Voltage                                               | 400～450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |                               |                                                   |                              |                                                            |                         |                                             |
| Z(-25℃)/Z(+20℃)                                                          | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |                               |                                                   |                              |                                                            |                         |                                             |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | THC             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

|                      |            |              |      |      |      |      |
|----------------------|------------|--------------|------|------|------|------|
| 周波数(Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数<br>Coefficient    | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

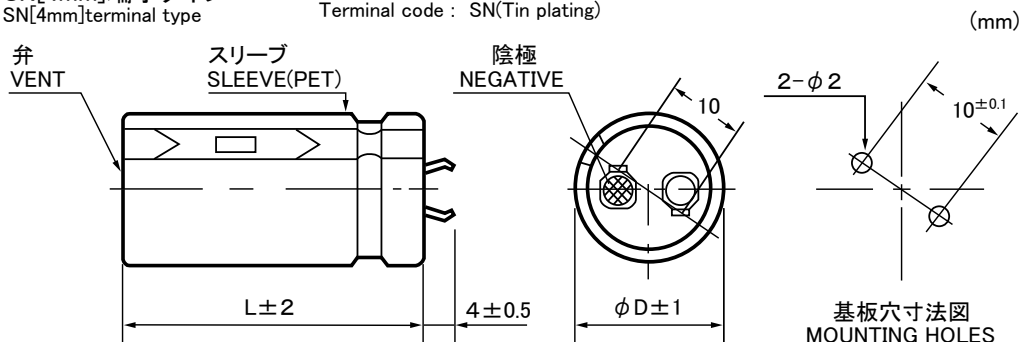
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 82             | 22x25     | 0.79 |           |      |           |      |           |      |
| 100            | 22x30     | 0.91 |           |      |           |      |           |      |
| 120            | 22x30     | 0.98 | 25x25     | 0.96 |           |      |           |      |
| 150            | 22x35     | 1.14 | 25x30     | 1.12 |           |      |           |      |
| 180            | 22x40     | 1.28 | 25x35     | 1.28 |           |      |           |      |
| 220            | 22x50     | 1.50 | 25x40     | 1.45 | 30x30     | 1.35 |           |      |
| 270            | 22x55     | 1.69 | 25x45     | 1.64 | 30x35     | 1.55 |           |      |
| 330            |           |      | 25x55     | 1.90 | 30x40     | 1.75 |           |      |
| 390            |           |      | 25x60     | 2.09 | 30x45     | 1.94 | 35x35     | 1.75 |
| 470            |           |      |           |      | 30x50     | 2.14 | 35x40     | 1.96 |
| 560            |           |      |           |      | 30x60     | 2.45 | 35x45     | 2.16 |
| 680            |           |      |           |      |           |      | 35x55     | 2.52 |
| 820            |           |      |           |      |           |      | 35x60     | 2.72 |

| Cap.( $\mu$ F) | 420Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 82             | 22x25     | 0.79 |           |      |           |      |           |      |
| 100            | 22x30     | 0.91 |           |      |           |      |           |      |
| 120            | 22x30     | 0.99 | 25x25     | 0.96 |           |      |           |      |
| 150            | 22x35     | 1.14 | 25x30     | 1.12 |           |      |           |      |
| 180            | 22x45     | 1.34 | 25x35     | 1.28 |           |      |           |      |
| 220            | 22x50     | 1.51 | 25x40     | 1.45 | 30x30     | 1.35 |           |      |
| 270            | 22x60     | 1.74 | 25x45     | 1.64 | 30x35     | 1.54 |           |      |
| 330            |           |      | 25x55     | 1.90 | 30x40     | 1.74 |           |      |
| 390            |           |      | 25x60     | 2.09 | 30x45     | 1.93 | 35x35     | 1.74 |
| 470            |           |      |           |      | 30x55     | 2.24 | 35x40     | 1.95 |
| 560            |           |      |           |      | 30x60     | 2.44 | 35x45     | 2.15 |
| 680            |           |      |           |      |           |      | 35x55     | 2.51 |

| Cap.( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 68             | 22x25     | 0.71 |           |      |           |      |           |      |
| 82             | 22x30     | 0.82 | 25x25     | 0.81 |           |      |           |      |
| 100            | 22x35     | 0.93 | 25x30     | 0.94 |           |      |           |      |
| 120            | 22x40     | 1.06 | 25x30     | 1.02 |           |      |           |      |
| 150            | 22x45     | 1.21 | 25x35     | 1.18 |           |      |           |      |
| 180            | 22x50     | 1.36 | 25x40     | 1.33 | 30x30     | 1.38 |           |      |
| 220            | 22x60     | 1.56 | 25x50     | 1.55 | 30x35     | 1.47 |           |      |
| 270            |           |      | 25x55     | 1.74 | 30x40     | 1.66 | 35x35     | 1.66 |
| 330            |           |      |           |      | 30x50     | 1.94 | 35x40     | 1.87 |
| 390            |           |      |           |      | 30x55     | 2.14 | 35x45     | 2.08 |
| 470            |           |      |           |      |           |      | 35x50     | 2.30 |
| 560            |           |      |           |      |           |      | 35x55     | 2.53 |

ケースサイズ Case Size  $\phi D \times L$ (mm) →  
リプル電流 Ripple Current (A.r.m.s./120Hz,125°C) →

## USG series

85°C 3000 時間 標準品  
Load Life : 85°C 3000 hours, Standard



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------|---------------------------------------------------|---------|------------------------------|------------------------------------------------------------|-----------------|-------------------------|---------------------------------------------|---------|-------|-----------------|------|------|------|------|------|------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+85℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -25～+85℃   |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 定格電圧範囲<br>Rated Voltage Range                                            | 10～250Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 400～450Vdc |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                        |            |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100～450</td></tr><tr><td>tan δ</td><td>0.55</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                  |            | 定格電圧 (Vdc)<br>Rated Voltage   | 10                                                | 16      | 25                           | 35                                                         | 50              | 63                      | 80                                          | 100～450 | tan δ | 0.55            | 0.50 | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.20 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 16         | 25                            | 35                                                | 50      | 63                           | 80                                                         | 100～450         |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| tan δ                                                                    | 0.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.50       | 0.45                          | 0.40                                              | 0.35    | 0.30                         | 0.25                                                       | 0.20            |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 耐久性<br>Endurance                                                         | <p>85℃中で3000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br/>After applying rated voltage with rated ripple current for 3000 hours at 85℃, the capacitors shall meet the following requirements.</p> <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td></tr></table> |            | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |         | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |                 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |         |       |                 |      |      |      |      |      |      |      |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                               |                                                   |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10～100</td><td>160～250</td><td>400</td><td>420～450</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>4</td><td>8</td><td>12</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>12</td><td>12</td><td>—</td><td>—</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                   |            | 定格電圧 (Vdc)<br>Rated Voltage   | 10～100                                            | 160～250 | 400                          | 420～450                                                    | Z(-25℃)/Z(+20℃) | 3                       | 4                                           | 8       | 12    | Z(-40℃)/Z(+20℃) | 12   | 12   | —    | —    |      |      |      |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10～100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 160～250    | 400                           | 420～450                                           |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4          | 8                             | 12                                                |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |
| Z(-40℃)/Z(+20℃)                                                          | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 12         | —                             | —                                                 |         |                              |                                                            |                 |                         |                                             |         |       |                 |      |      |      |      |      |      |      |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | USG             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|------------|--------------|------|------|------|------|
| 10~100Vdc             | 0.90       | 1.00         | 1.03 | 1.05 | 1.10 | 1.15 |
| 160~250Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
| 400~450Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

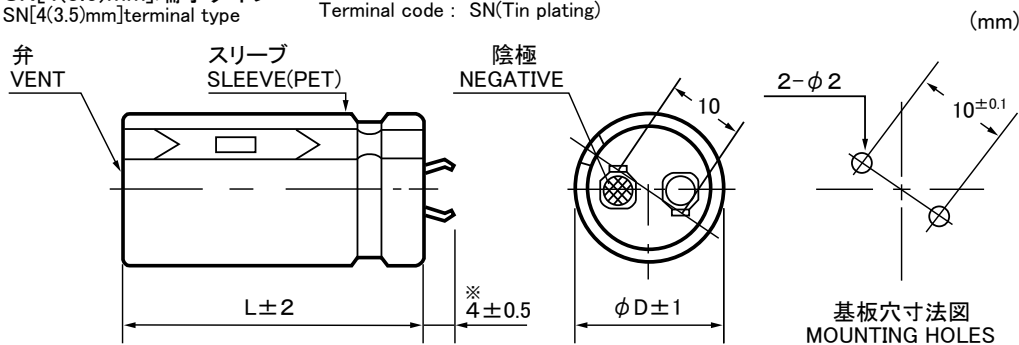
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate



◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ 端子記号 : SN(錫メッキ)  
SN[4(3.5)mm]terminal type Terminal code : SN(Tin plating)



基板穴寸法図  
MOUNTING HOLES

※ 但し  $\phi 35$  は  $3.5 \pm 0.5$   
For  $\phi 35$ ,  $3.5 \pm 0.5$

◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu F$ ) | 10Vdc      |            |            |            |            | 16Vdc      |            |            |            |            |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                     | $\phi 20$  | $\phi 22$  | $\phi 25$  | $\phi 30$  | $\phi 35$  | $\phi 20$  | $\phi 22$  | $\phi 25$  | $\phi 30$  | $\phi 35$  |
| 8200                |            |            |            |            |            | 20×25 2.56 |            |            |            |            |
| 10000               | 20×25 2.22 |            |            |            |            | 20×30 2.85 | 22×25 2.85 |            |            |            |
| 12000               | 20×30 2.44 | 22×25 2.41 |            |            |            | 20×35 3.20 | 22×30 3.20 |            |            |            |
| 15000               | 20×35 2.90 | 22×30 2.88 | 25×25 2.88 |            |            | 20×40 3.70 | 22×35 3.70 | 25×25 3.70 |            |            |
| 18000               | 20×40 3.31 | 22×35 3.22 | 25×30 3.08 |            |            |            | 22×40 3.98 | 25×30 3.98 |            |            |
| 22000               |            | 22×40 3.79 | 25×30 3.66 | 30×25 3.58 |            |            | 22×45 4.52 | 25×35 4.52 | 30×25 4.52 |            |
| 27000               |            | 22×45 4.04 | 25×35 4.04 | 30×30 3.99 |            |            | 22×50 4.98 | 25×40 4.98 | 30×30 4.98 |            |
| 33000               |            | 22×50 4.58 | 25×40 4.56 | 30×30 4.58 |            |            |            | 25×45 5.49 | 30×35 5.49 | 35×30 5.49 |
| 39000               |            |            | 25×45 5.29 | 30×35 5.21 | 35×30 5.05 |            |            | 25×50 6.11 | 30×40 6.11 | 35×35 6.11 |
| 47000               |            |            | 25×50 5.78 | 30×40 5.78 | 35×35 5.55 |            |            |            | 30×45 6.80 | 35×35 6.80 |
| 56000               |            |            |            | 30×45 6.59 | 35×35 6.40 |            |            |            | 30×50 7.62 | 35×40 7.62 |
| 68000               |            |            |            | 30×50 7.50 | 35×40 7.48 |            |            |            |            | 35×45 8.45 |
| 82000               |            |            |            |            | 35×50 8.50 |            |            |            |            | 35×50 9.14 |

| Cap.<br>( $\mu F$ ) | 25Vdc      |            |            |            |            | 35Vdc      |            |            |            |            |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                     | $\phi 20$  | $\phi 22$  | $\phi 25$  | $\phi 30$  | $\phi 35$  | $\phi 20$  | $\phi 22$  | $\phi 25$  | $\phi 30$  | $\phi 35$  |
| 3300                |            |            |            |            |            | 20×25 2.14 |            |            |            |            |
| 3900                |            |            |            |            |            | 20×30 2.28 |            |            |            |            |
| 4700                |            |            |            |            |            | 20×35 2.46 | 22×25 2.46 |            |            |            |
| 5600                | 20×25 2.33 |            |            |            |            | 20×40 2.79 | 22×30 2.79 | 25×25 2.79 |            |            |
| 6800                | 20×30 2.56 | 22×25 2.56 |            |            |            |            | 22×35 2.89 | 25×30 2.89 |            |            |
| 8200                | 20×35 2.91 | 22×30 2.91 |            |            |            |            | 22×40 3.47 | 25×30 3.47 | 30×25 3.47 |            |
| 10000               | 20×40 3.18 | 22×35 3.18 | 25×25 3.18 |            |            |            | 22×45 3.59 | 25×35 3.59 | 30×30 3.59 |            |
| 12000               |            | 22×40 3.53 | 25×30 3.53 |            |            |            | 22×50 4.51 | 25×40 4.51 | 30×30 4.51 |            |
| 15000               |            | 22×45 4.08 | 25×35 4.08 | 30×25 4.08 |            |            |            | 25×45 4.80 | 30×35 4.80 | 35×30 4.80 |
| 18000               |            | 22×50 4.68 | 25×40 4.68 | 30×30 4.68 |            |            |            |            | 30×40 5.70 | 35×35 5.70 |
| 22000               |            |            | 25×45 5.19 | 30×35 5.19 | 35×30 5.19 |            |            |            | 30×45 6.38 | 35×40 6.38 |
| 27000               |            |            | 25×50 6.02 | 30×40 6.02 | 35×35 6.02 |            |            |            |            | 35×45 6.90 |
| 33000               |            |            |            | 30×45 6.75 | 35×40 6.75 |            |            |            |            | 35×50 7.49 |
| 39000               |            |            |            | 30×50 7.56 | 35×45 7.56 |            |            |            |            |            |
| 47000               |            |            |            |            | 35×50 8.30 |            |            |            |            |            |

| Cap.<br>( $\mu F$ ) | 50Vdc      |            |            |            |            | 63Vdc      |            |            |            |            |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                     | $\phi 20$  | $\phi 22$  | $\phi 25$  | $\phi 30$  | $\phi 35$  | $\phi 20$  | $\phi 22$  | $\phi 25$  | $\phi 30$  | $\phi 35$  |
| 1500                |            |            |            |            |            | 20×25 1.69 |            |            |            |            |
| 1800                |            |            |            |            |            | 20×30 2.04 | 22×25 2.04 |            |            |            |
| 2200                | 20×25 2.07 |            |            |            |            | 20×35 2.40 | 22×30 2.40 |            |            |            |
| 2700                | 20×30 2.21 | 22×25 2.21 |            |            |            | 20×40 2.52 | 22×35 2.52 | 25×25 2.52 |            |            |
| 3300                | 20×35 2.41 | 22×30 2.41 |            |            |            |            | 22×40 2.69 | 25×30 2.69 |            |            |
| 3900                | 20×40 2.72 | 22×30 2.72 | 25×25 2.72 |            |            |            | 22×45 3.10 | 25×35 3.10 | 30×25 3.10 |            |
| 4700                |            | 22×35 3.01 | 25×30 3.01 |            |            |            | 22×50 3.49 | 25×40 3.49 | 30×30 3.49 |            |
| 5600                |            | 22×40 3.43 | 25×35 3.43 | 30×25 3.43 |            |            |            | 25×45 3.81 | 30×35 3.81 |            |
| 6800                |            | 22×45 3.94 | 25×35 3.94 | 30×30 3.94 |            |            |            | 25×50 4.41 | 30×40 4.41 | 35×30 4.41 |
| 8200                |            |            | 25×40 4.37 | 30×35 4.37 |            |            |            |            | 30×45 4.90 | 35×35 4.90 |
| 10000               |            |            | 25×50 5.02 | 30×40 5.02 | 35×30 5.02 |            |            |            | 30×50 5.49 | 35×40 5.49 |
| 12000               |            |            |            | 30×45 5.60 | 35×35 5.60 |            |            |            |            | 35×45 6.30 |
| 15000               |            |            |            | 30×50 6.44 | 35×40 6.44 |            |            |            |            |            |
| 18000               |            |            |            |            | 35×45 6.71 |            |            |            |            |            |

ケースサイズ Case Size  $\phi D \times L$ (mm) →  
リプル電流 Ripple Current (A.r.m.s./120Hz,85°C) →

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 80Vdc     |           |           |           |           |           |           |           |           |           | 100Vdc    |           |           |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 680                |           |           |           |           |           |           |           |           |           |           | 20×25     | 1.66      |           |           |           |           |           |           |           |           |
| 820                |           |           |           |           |           |           |           |           |           |           | 20×30     | 1.86      | 22×25     | 1.86      |           |           |           |           |           |           |
| 1000               | 20×25     | 1.56      |           |           |           |           |           |           |           |           | 20×30     | 2.02      | 22×30     | 2.02      |           |           |           |           |           |           |
| 1200               | 20×30     | 1.80      | 22×25     | 1.80      |           |           |           |           |           |           | 20×35     | 2.12      | 22×30     | 2.12      | 25×25     | 2.12      |           |           |           |           |
| 1500               | 20×30     | 2.10      | 22×30     | 2.10      |           |           |           |           |           |           | 20×40     | 2.45      | 22×35     | 2.45      | 25×30     | 2.45      |           |           |           |           |
| 1800               | 20×35     | 2.30      | 22×30     | 2.30      | 25×25     | 2.30      |           |           |           |           |           |           | 22×40     | 2.77      | 25×30     | 2.77      | 30×25     | 2.77      |           |           |
| 2200               | 20×40     | 2.53      | 22×35     | 2.53      | 25×30     | 2.53      |           |           |           |           |           |           | 22×45     | 3.12      | 25×35     | 3.12      | 30×30     | 3.12      |           |           |
| 2700               |           |           | 22×40     | 2.93      | 25×35     | 2.93      | 30×25     | 2.93      |           |           |           |           |           |           | 25×40     | 3.61      | 30×30     | 3.61      |           |           |
| 3300               |           |           | 22×45     | 3.25      | 25×35     | 3.25      | 30×30     | 3.25      |           |           |           |           |           |           | 25×50     | 4.06      | 30×35     | 4.06      | 35×30     | 4.06      |
| 3900               |           |           |           |           | 25×40     | 3.62      | 30×35     | 3.62      |           |           |           |           |           |           |           |           | 30×40     | 4.60      | 35×35     | 4.60      |
| 4700               |           |           |           |           | 25×45     | 4.28      | 30×40     | 4.28      | 35×30     | 4.28      |           |           |           |           |           |           | 30×45     | 5.13      | 35×40     | 5.13      |
| 5600               |           |           |           |           |           |           | 30×45     | 4.55      | 35×35     | 4.55      |           |           |           |           |           |           |           |           | 35×45     | 5.75      |
| 6800               |           |           |           |           |           |           | 30×45     | 5.83      | 35×40     | 5.83      |           |           |           |           |           |           |           |           | 35×50     | 6.01      |
| 8200               |           |           |           |           |           |           |           |           | 35×45     | 6.40      |           |           |           |           |           |           |           |           |           |           |
| 10000              |           |           |           |           |           |           |           |           | 35×50     | 7.03      |           |           |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 160Vdc    |           |           |           |           |           |           |           |           |           | 180Vdc    |           |           |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 390                | 20×25     | 1.19      |           |           |           |           |           |           |           |           | 20×25     | 1.84      |           |           |           |           |           |           |           |           |
| 470                | 20×30     | 1.76      | 22×25     | 1.76      |           |           |           |           |           |           | 20×30     | 2.08      | 22×25     | 2.08      |           |           |           |           |           |           |
| 560                | 20×30     | 2.25      | 22×25     | 2.25      |           |           |           |           |           |           | 20×35     | 2.25      | 22×30     | 2.25      |           |           |           |           |           |           |
| 680                | 20×35     | 2.50      | 22×30     | 2.50      | 25×25     | 2.50      |           |           |           |           | 20×40     | 2.50      | 22×35     | 2.50      | 25×25     | 2.50      |           |           |           |           |
| 820                | 20×40     | 2.75      | 22×35     | 2.75      | 25×30     | 2.75      |           |           |           |           | 20×45     | 2.75      | 22×40     | 2.75      | 25×30     | 2.75      |           |           |           |           |
| 1000               |           |           | 22×40     | 3.00      | 25×30     | 3.00      | 30×25     | 3.00      |           |           |           |           | 22×45     | 3.00      | 25×35     | 3.00      | 30×25     | 3.00      |           |           |
| 1200               |           |           | 22×45     | 3.25      | 25×35     | 3.25      | 30×30     | 3.25      |           |           |           |           | 22×50     | 3.31      | 25×40     | 3.31      | 30×30     | 3.31      | 35×25     | 3.31      |
| 1500               |           |           |           |           | 25×45     | 3.73      | 30×35     | 3.73      |           |           |           |           |           |           | 25×50     | 3.83      | 30×35     | 3.83      | 35×30     | 3.83      |
| 1800               |           |           |           |           | 25×50     | 4.20      | 30×35     | 4.20      | 35×30     | 4.20      |           |           |           |           |           |           | 30×40     | 4.32      | 35×35     | 4.32      |
| 2200               |           |           |           |           |           |           | 30×45     | 4.78      | 35×35     | 4.78      |           |           |           |           |           |           | 30×50     | 4.92      | 35×40     | 4.92      |
| 2700               |           |           |           |           |           |           | 30×50     | 5.45      | 35×40     | 5.45      |           |           |           |           |           |           |           |           | 35×45     | 5.52      |
| 3300               |           |           |           |           |           |           |           |           | 35×45     | 5.75      |           |           |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 200Vdc    |           |           |           |           |           |           |           |           |           | 220Vdc    |           |           |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 270                |           |           |           |           |           |           |           |           |           |           | 20×25     | 1.42      |           |           |           |           |           |           |           |           |
| 330                | 20×25     | 1.44      |           |           |           |           |           |           |           |           | 20×30     | 1.58      | 22×25     | 1.58      |           |           |           |           |           |           |
| 390                | 20×30     | 1.68      | 22×25     | 1.68      |           |           |           |           |           |           | 20×35     | 1.75      | 22×30     | 1.75      |           |           |           |           |           |           |
| 470                | 20×35     | 1.93      | 22×30     | 1.93      | 25×25     | 1.93      |           |           |           |           | 20×35     | 1.99      | 22×30     | 1.99      | 25×25     | 1.99      |           |           |           |           |
| 560                | 20×35     | 2.43      | 22×30     | 2.43      | 25×25     | 2.43      |           |           |           |           | 20×40     | 2.28      | 22×35     | 2.28      | 25×30     | 2.28      |           |           |           |           |
| 680                | 20×40     | 2.68      | 22×35     | 2.68      | 25×30     | 2.68      | 30×25     | 2.68      |           |           |           |           | 22×40     | 2.46      | 25×30     | 2.46      | 30×25     | 2.46      |           |           |
| 820                |           |           | 22×40     | 2.93      | 25×30     | 2.93      | 30×25     | 2.93      |           |           |           |           | 22×45     | 2.81      | 25×35     | 2.81      | 30×30     | 2.81      |           |           |
| 1000               |           |           | 22×45     | 3.25      | 25×35     | 3.25      | 30×30     | 3.25      | 35×25     | 3.25      |           |           |           |           | 25×45     | 3.29      | 30×30     | 3.29      |           |           |
| 1200               |           |           |           |           | 25×45     | 3.50      | 30×35     | 3.50      | 35×30     | 3.50      |           |           |           |           | 25×50     | 3.60      | 30×35     | 3.60      | 35×30     | 3.60      |
| 1500               |           |           |           |           | 25×50     | 3.87      | 30×40     | 3.87      | 35×30     | 3.87      |           |           |           |           |           |           | 30×45     | 3.92      | 35×35     | 3.92      |
| 1800               |           |           |           |           |           |           | 30×45     | 4.32      | 35×35     | 4.32      |           |           |           |           |           |           | 30×50     | 4.30      | 35×40     | 4.30      |
| 2200               |           |           |           |           |           |           | 30×50     | 4.92      | 35×40     | 4.92      |           |           |           |           |           |           |           |           | 35×50     | 4.95      |
| 2700               |           |           |           |           |           |           |           |           | 35×50     | 5.45      |           |           |           |           |           |           |           |           |           |           |

ケースサイズ Case Size  $\phi D \times L$ (mm)

リップル電流 Ripple Current (A.r.m.s./120Hz,85°C)

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 250Vdc    |      |           |      |           |      |           |      |           |      | 400Vdc    |      |           |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 20 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 20 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 |           |      |           |      |           |      |           |      |           |      | 20×25     | 0.80 |           |      |           |      |           |      |           |      |
| 100                |           |      |           |      |           |      |           |      |           |      | 20×30     | 0.94 | 22×25     | 0.94 |           |      |           |      |           |      |
| 120                |           |      |           |      |           |      |           |      |           |      | 20×30     | 1.08 | 22×25     | 1.08 |           |      |           |      |           |      |
| 150                |           |      |           |      |           |      |           |      |           |      | 20×35     | 1.21 | 22×30     | 1.21 | 25×25     | 1.21 |           |      |           |      |
| 180                |           |      |           |      |           |      |           |      |           |      | 20×40     | 1.45 | 22×35     | 1.45 | 25×25     | 1.45 |           |      |           |      |
| 220                | 20×25     | 1.23 |           |      |           |      |           |      |           |      |           |      | 22×40     | 1.58 | 25×30     | 1.58 | 30×25     | 1.58 |           |      |
| 270                | 20×30     | 1.31 | 22×25     | 1.31 |           |      |           |      |           |      |           |      | 22×45     | 1.67 | 25×35     | 1.67 | 30×25     | 1.67 |           |      |
| 330                | 20×30     | 1.75 | 22×25     | 1.75 |           |      |           |      |           |      |           |      | 22×50     | 1.90 | 25×40     | 1.90 | 30×30     | 1.90 | 35×25     | 1.90 |
| 390                | 20×35     | 1.91 | 22×30     | 1.91 | 25×25     | 1.91 |           |      |           |      |           |      |           |      | 25×45     | 2.13 | 30×35     | 2.13 | 35×30     | 2.13 |
| 470                | 20×40     | 2.11 | 22×35     | 2.11 | 25×25     | 2.11 |           |      |           |      |           |      |           |      | 25×50     | 2.39 | 30×40     | 2.39 | 35×30     | 2.39 |
| 560                |           |      | 22×40     | 2.25 | 25×30     | 2.25 | 30×25     | 2.25 |           |      |           |      |           |      |           |      | 30×45     | 2.69 | 35×35     | 2.69 |
| 680                |           |      | 22×45     | 2.50 | 25×35     | 2.50 | 30×30     | 2.50 |           |      |           |      |           |      |           |      |           |      | 35×40     | 2.96 |
| 820                |           |      |           |      | 25×40     | 2.77 | 30×30     | 2.77 | 35×25     | 2.77 |           |      |           |      |           |      |           |      | 35×50     | 3.25 |
| 1000               |           |      |           |      | 25×45     | 3.32 | 30×35     | 3.32 | 35×30     | 3.32 |           |      |           |      |           |      |           |      |           |      |
| 1200               |           |      |           |      |           |      | 30×40     | 3.84 | 35×35     | 3.84 |           |      |           |      |           |      |           |      |           |      |
| 1500               |           |      |           |      |           |      | 30×50     | 4.25 | 35×40     | 4.25 |           |      |           |      |           |      |           |      |           |      |
| 1800               |           |      |           |      |           |      |           |      | 35×45     | 4.55 |           |      |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 420Vdc    |           |           |           |           |      |       |      |       |      | 450Vdc    |           |           |           |           |      |       |      |       |      |
|--------------------|-----------|-----------|-----------|-----------|-----------|------|-------|------|-------|------|-----------|-----------|-----------|-----------|-----------|------|-------|------|-------|------|
|                    | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |      |       |      |       |      | $\phi$ 20 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |      |       |      |       |      |
| 68                 |           |           |           |           |           |      |       |      |       |      | 20×25     | 0.66      |           |           |           |      |       |      |       |      |
| 82                 | 20×25     | 0.83      |           |           |           |      |       |      |       |      | 20×25     | 0.83      |           |           |           |      |       |      |       |      |
| 100                | 20×30     | 0.97      | 22×25     | 0.97      |           |      |       |      |       |      | 20×30     | 0.93      | 22×25     | 0.93      |           |      |       |      |       |      |
| 120                | 20×30     | 1.08      | 22×25     | 1.08      |           |      |       |      |       |      | 20×35     | 1.04      | 22×30     | 1.04      | 25×25     | 1.04 |       |      |       |      |
| 150                | 20×35     | 1.30      | 22×30     | 1.30      | 25×25     | 1.30 |       |      |       |      | 20×40     | 1.29      | 22×35     | 1.29      | 25×25     | 1.29 |       |      |       |      |
| 180                | 20×40     | 1.48      | 22×35     | 1.48      | 25×30     | 1.48 |       |      |       |      |           |           | 22×40     | 1.40      | 25×30     | 1.40 | 30×25 | 1.40 |       |      |
| 220                |           |           | 22×40     | 1.65      | 25×35     | 1.65 | 30×25 | 1.65 |       |      |           |           | 22×45     | 1.66      | 25×35     | 1.66 | 30×25 | 1.66 |       |      |
| 270                |           |           | 22×50     | 1.94      | 25×35     | 1.94 | 30×30 | 1.94 |       |      |           |           | 22×50     | 1.81      | 25×40     | 1.81 | 30×30 | 1.81 | 35×25 | 1.81 |
| 330                |           |           |           |           | 25×45     | 2.17 | 30×35 | 2.17 | 35×30 | 2.17 |           |           |           |           | 25×45     | 2.10 | 30×35 | 2.10 | 35×30 | 2.10 |
| 390                |           |           |           |           | 25×50     | 2.27 | 30×35 | 2.27 | 35×30 | 2.27 |           |           |           |           |           |      | 30×40 | 2.32 | 35×35 | 2.32 |
| 470                |           |           |           |           |           |      | 30×40 | 2.61 | 35×35 | 2.61 |           |           |           |           |           |      | 30×45 | 2.66 | 35×40 | 2.66 |
| 560                |           |           |           |           |           |      | 30×50 | 2.82 | 35×40 | 2.82 |           |           |           |           |           |      |       |      | 35×40 | 2.82 |
| 680                |           |           |           |           |           |      |       |      | 35×45 | 3.11 |           |           |           |           |           |      |       |      | 35×50 | 3.00 |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\longrightarrow$   
 リプル電流 Ripple Current (A.r.m.s./120Hz,85°C)  $\longrightarrow$

## USK series

85℃ 3000時間 超小形化品  
Load Life : 85℃ 3000 hours, Ultra Miniaturized



RoHS  
compliance

### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |             |             |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|------|------|-------------|-------------|--|-------------------------------|---------------------------------------------------|-------------|-------------|-------------|-----------------|----|-------------|-------------|------------------------------|------------------------------------------------------------|------|------|------|------|------|------|------|-------------------------|---------------------------------------------|--|--|--|--|--|--|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+85℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |             |             |      |      | -25～+85℃    |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 16～250Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |             |             |      |      | 400～500Vdc  |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |             |             |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                   |             |             |             |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100～<br/>450</td><td>475,<br/>500</td></tr><tr><td>tan δ</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                           |             |             |             |      |      |             |             |  | 定格電圧 (Vdc)<br>Rated Voltage   | 16                                                | 25          | 35          | 50          | 63              | 80 | 100～<br>450 | 475,<br>500 | tan δ                        | 0.50                                                       | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.20 | 0.25 |                         |                                             |  |  |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 25          | 35          | 50          | 63   | 80   | 100～<br>450 | 475,<br>500 |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| tan δ                                                                    | 0.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.45        | 0.40        | 0.35        | 0.30 | 0.25 | 0.20        | 0.25        |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 耐久性<br>Endurance                                                         | 85℃中で3000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 3000 hours at 85℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="8">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="8">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="8">規格値以下<br/>Not more than the specified value.</td></tr></table> |             |             |             |      |      |             |             |  | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |             |             |             |                 |    |             |             | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      |      |      |      |      |      |      | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |  |  |  |  |  |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |             |             |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |             |             |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |             |             |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>16～<br/>100</td><td>160～<br/>250</td><td>400～<br/>450</td><td>475,<br/>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>4</td><td>8</td><td>10</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>12</td><td>12</td><td>-</td><td>-</td></tr></table> (120Hz)                                                                                                                                                                                                                                                   |             |             |             |      |      |             |             |  | 定格電圧 (Vdc)<br>Rated Voltage   | 16～<br>100                                        | 160～<br>250 | 400～<br>450 | 475,<br>500 | Z(-25℃)/Z(+20℃) | 3  | 4           | 8           | 10                           | Z(-40℃)/Z(+20℃)                                            | 12   | 12   | -    | -    |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 16～<br>100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 160～<br>250 | 400～<br>450 | 475,<br>500 |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4           | 8           | 10          |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |
| Z(-40℃)/Z(+20℃)                                                          | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12          | -           | -           |      |      |             |             |  |                               |                                                   |             |             |             |                 |    |             |             |                              |                                                            |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | USK             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≦ |
|-----------------------|------------|--------------|------|------|------|------|
| 16～100Vdc             | 0.90       | 1.00         | 1.03 | 1.05 | 1.10 | 1.15 |
| 100～250Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
| 400～500Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

ケースサイズ Case Size  $\phi D \times L(\text{mm})$  \_\_\_\_\_  
 リプル電流 Ripple Current (A.r.m.s./120Hz 85°C) \_\_\_\_\_

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 100Vdc    |      |           |      |           |      |           |      | 160Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 560                |           |      |           |      |           |      |           |      | 22×25     | 2.20 |           |      |           |      |           |      |
| 680                |           |      |           |      |           |      |           |      | 22×30     | 2.56 |           |      |           |      |           |      |
| 820                |           |      |           |      |           |      |           |      | 22×35     | 2.94 | 25×25     | 2.47 |           |      |           |      |
| 1000               |           |      |           |      |           |      |           |      | 22×35     | 3.07 | 25×30     | 2.90 |           |      |           |      |
| 1200               | 22×25     | 2.91 |           |      |           |      |           |      | 22×45     | 3.70 | 25×35     | 3.32 | 30×25     | 2.64 |           |      |
| 1500               | 22×30     | 3.40 |           |      |           |      |           |      | 22×50     | 4.14 | 25×40     | 3.75 | 30×30     | 3.12 | 35×25     | 2.63 |
| 1800               | 22×30     | 3.49 | 25×25     | 3.14 |           |      |           |      | 22×60     | 4.76 | 25×45     | 4.16 | 30×35     | 3.58 | 35×30     | 3.16 |
| 2200               | 22×35     | 3.97 | 25×30     | 3.69 |           |      |           |      |           |      | 25×55     | 4.87 | 30×40     | 4.00 | 35×35     | 3.63 |
| 2700               | 22×40     | 4.43 | 25×35     | 4.18 | 30×25     | 4.57 |           |      |           |      |           |      | 30×45     | 4.42 | 35×40     | 4.04 |
| 3300               | 22×50     | 5.20 | 25×40     | 4.65 | 30×30     | 5.31 | 35×25     | 4.79 |           |      |           |      | 30×55     | 5.18 | 35×45     | 4.41 |
| 3900               | 22×55     | 5.61 | 25×45     | 5.08 | 30×35     | 5.98 | 35×30     | 5.60 |           |      |           |      | 30×60     | 5.58 | 35×50     | 4.77 |
| 4700               |           |      | 25×50     | 5.50 | 30×40     | 6.64 | 35×30     | 5.63 |           |      |           |      |           |      | 35×55     | 5.13 |
| 5600               |           |      | 25×60     | 6.24 | 30×45     | 7.27 | 35×35     | 6.37 |           |      |           |      |           |      |           |      |
| 6800               |           |      |           |      | 30×50     | 7.89 | 35×40     | 7.05 |           |      |           |      |           |      |           |      |
| 8200               |           |      |           |      | 30×60     | 8.90 | 35×50     | 8.26 |           |      |           |      |           |      |           |      |
| 10000              |           |      |           |      |           |      | 35×55     | 8.81 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 180Vdc    |      |           |      |           |      |           |      | 200Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 470                |           |      |           |      |           |      |           |      | 22×25     | 2.12 |           |      |           |      |           |      |
| 560                | 22×25     | 2.20 |           |      |           |      |           |      | 22×30     | 2.45 | 25×25     | 2.31 |           |      |           |      |
| 680                | 22×30     | 2.57 | 25×25     | 2.40 |           |      |           |      | 22×35     | 2.81 | 25×30     | 2.68 |           |      |           |      |
| 820                | 22×35     | 2.93 | 25×30     | 2.78 |           |      |           |      | 22×40     | 3.17 | 25×30     | 2.80 | 30×25     | 2.57 |           |      |
| 1000               | 22×40     | 3.32 | 25×30     | 2.91 | 30×25     | 2.65 |           |      | 22×45     | 3.56 | 25×35     | 3.21 | 30×30     | 2.90 |           |      |
| 1200               | 22×45     | 3.71 | 25×35     | 3.32 | 30×30     | 2.99 |           |      | 22×50     | 3.94 | 25×40     | 3.61 | 30×30     | 3.04 | 35×25     | 2.59 |
| 1500               | 22×55     | 4.36 | 25×40     | 3.76 | 30×30     | 3.13 | 35×25     | 2.63 | 22×60     | 4.58 | 25×50     | 4.30 | 30×35     | 3.49 | 35×30     | 3.09 |
| 1800               | 22×60     | 4.77 | 25×50     | 4.46 | 30×35     | 3.57 | 35×30     | 3.15 |           |      | 25×55     | 4.71 | 30×40     | 3.91 | 35×35     | 3.55 |
| 2200               |           |      | 25×55     | 4.89 | 30×40     | 4.02 | 35×35     | 3.61 |           |      |           |      | 30×50     | 4.69 | 35×40     | 3.96 |
| 2700               |           |      |           |      | 30×50     | 4.81 | 35×40     | 4.03 |           |      |           |      | 30×55     | 5.08 | 35×45     | 4.33 |
| 3300               |           |      |           |      | 30×55     | 5.21 | 35×45     | 4.39 |           |      |           |      |           |      | 35×55     | 5.11 |
| 3900               |           |      |           |      |           |      | 35×50     | 4.79 |           |      |           |      |           |      | 35×60     | 5.42 |
| 4700               |           |      |           |      |           |      | 35×60     | 5.52 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 220Vdc    |      |           |      |           |      |           |      | 250Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 390                |           |      |           |      |           |      |           |      | 22×25     | 2.02 |           |      |           |      |           |      |
| 470                | 22×25     | 2.12 |           |      |           |      |           |      | 22×30     | 2.35 | 25×25     | 2.22 |           |      |           |      |
| 560                | 22×30     | 2.46 | 25×25     | 2.31 |           |      |           |      | 22×35     | 2.68 | 25×30     | 2.57 |           |      |           |      |
| 680                | 22×35     | 2.81 | 25×30     | 2.70 |           |      |           |      | 22×40     | 3.03 | 25×30     | 2.69 | 30×25     | 2.48 |           |      |
| 820                | 22×40     | 3.18 | 25×35     | 3.06 | 30×25     | 2.56 |           |      | 22×45     | 3.39 | 25×35     | 3.08 | 30×30     | 2.85 |           |      |
| 1000               | 22×45     | 3.56 | 25×35     | 3.21 | 30×30     | 2.95 |           |      | 22×55     | 3.95 | 25×40     | 3.47 | 30×30     | 2.96 | 35×25     | 2.53 |
| 1200               | 22×55     | 4.14 | 25×45     | 3.87 | 30×30     | 3.04 | 35×25     | 2.58 | 22×60     | 4.34 | 25×50     | 4.10 | 30×35     | 3.38 | 35×30     | 3.02 |
| 1500               |           |      | 25×55     | 4.54 | 30×40     | 3.88 | 35×30     | 3.06 |           |      | 25×60     | 4.76 | 30×40     | 3.81 | 35×35     | 3.45 |
| 1800               |           |      |           |      | 30×45     | 4.22 | 35×35     | 3.47 |           |      |           |      | 30×50     | 4.53 | 35×40     | 3.86 |
| 2200               |           |      |           |      | 30×55     | 4.95 | 35×45     | 4.30 |           |      |           |      | 30×60     | 5.19 | 35×45     | 4.22 |
| 2700               |           |      |           |      |           |      | 35×50     | 4.63 |           |      |           |      |           |      | 35×55     | 4.93 |
| 3300               |           |      |           |      |           |      | 35×60     | 5.35 |           |      |           |      |           |      |           |      |

ケースサイズ Case Size  $\phi$  D × L(mm)

リップル電流 Ripple Current (A.r.m.s./120Hz,85°C)



### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      | 420Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 150                | 22×25     | 1.40 |           |      |           |      |           |      | 22×25     | 1.42 |           |      |           |      |           |      |
| 180                | 22×25     | 1.47 |           |      |           |      |           |      | 22×30     | 1.63 | 25×25     | 1.59 |           |      |           |      |
|                    | 22×30     | 1.60 |           |      |           |      |           |      |           |      |           |      |           |      |           |      |
| 220                | 22×30     | 1.74 | 25×25     | 1.68 |           |      |           |      | 22×30     | 1.72 | 25×25     | 1.67 |           |      |           |      |
|                    |           |      |           |      |           |      |           |      | 22×35     | 1.87 | 25×30     | 1.84 |           |      |           |      |
| 270                | 22×35     | 1.99 | 25×30     | 1.95 |           |      |           |      | 22×35     | 1.97 | 25×30     | 1.98 | 30×25     | 1.91 |           |      |
|                    |           |      |           |      |           |      |           |      | 22×40     | 2.13 |           |      |           |      |           |      |
| 330                | 22×40     | 2.26 | 25×35     | 2.23 | 30×25     | 1.98 |           |      | 22×45     | 2.41 | 25×35     | 2.27 | 30×25     | 1.98 |           |      |
|                    |           |      |           |      |           |      |           |      |           |      |           |      | 30×30     | 2.22 |           |      |
| 390                | 22×45     | 2.51 | 25×35     | 2.34 | 30×30     | 2.30 |           |      | 22×50     | 2.67 | 25×40     | 2.54 | 30×30     | 2.31 | 35×25     | 2.10 |
|                    | 22×50     | 2.64 | 25×40     | 2.50 |           |      |           |      |           |      |           |      |           |      |           |      |
| 470                | 22×55     | 2.92 | 25×40     | 2.63 | 30×30     | 2.39 | 35×25     | 2.12 | 22×55     | 2.89 | 25×45     | 2.82 | 30×35     | 2.63 | 35×30     | 2.47 |
|                    | 22×60     | 3.03 | 25×45     | 2.81 | 30×35     | 2.61 |           |      |           |      | 25×50     | 2.97 |           |      |           |      |
| 560                | 22×60     | 3.17 | 25×50     | 3.12 | 30×35     | 2.75 | 35×30     | 2.50 |           |      | 25×50     | 3.08 | 30×40     | 2.95 | 35×30     | 2.54 |
|                    |           |      | 25×55     | 3.24 | 30×40     | 2.92 |           |      |           |      | 25×55     | 3.28 |           |      | 35×35     | 2.81 |
| 680                |           |      | 25×55     | 3.41 | 30×40     | 3.05 | 35×35     | 2.83 |           |      | 25×60     | 3.55 | 30×45     | 3.29 | 35×35     | 2.90 |
|                    |           |      | 25×60     | 3.58 | 30×45     | 3.25 |           |      |           |      |           |      | 30×50     | 3.47 | 35×40     | 3.15 |
| 820                |           |      |           |      | 30×50     | 3.57 | 35×40     | 3.17 |           |      |           |      | 30×50     | 3.64 | 35×40     | 3.25 |
|                    |           |      |           |      |           |      |           |      |           |      |           |      | 30×55     | 3.80 | 35×45     | 3.47 |
| 1000               |           |      |           |      | 30×60     | 4.12 | 35×45     | 3.62 |           |      |           |      | 30×60     | 4.13 | 35×45     | 3.57 |
|                    |           |      |           |      |           |      | 35×50     | 3.79 |           |      |           |      |           |      | 35×50     | 3.78 |
| 1200               |           |      |           |      |           |      | 35×55     | 4.09 |           |      |           |      |           |      | 35×55     | 4.15 |
|                    |           |      |           |      |           |      |           |      |           |      |           |      |           |      | 35×60     | 4.36 |

| Cap.<br>( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      | 475Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100                |           |      |           |      |           |      |           |      | 22×25     | 1.11 |           |      |           |      |           |      |
| 120                | 22×25     | 1.30 |           |      |           |      |           |      | 22×30     | 1.28 |           |      |           |      |           |      |
| 150                | 22×25     | 1.41 |           |      |           |      |           |      | 22×35     | 1.48 | 25×25     | 1.38 |           |      |           |      |
|                    | 22×30     | 1.53 |           |      |           |      |           |      |           |      |           |      |           |      |           |      |
| 180                | 22×30     | 1.65 | 25×25     | 1.60 |           |      |           |      | 22×35     | 1.60 | 25×30     | 1.59 |           |      |           |      |
| 220                | 22×35     | 1.89 | 25×30     | 1.85 |           |      |           |      | 22×45     | 1.89 | 25×35     | 1.82 | 30×25     | 1.70 |           |      |
| 270                | 22×40     | 2.15 | 25×35     | 2.12 | 30×25     | 1.90 |           |      | 22×50     | 2.14 | 25×40     | 2.07 | 30×30     | 1.97 | 35×25     | 1.87 |
| 330                | 22×45     | 2.37 | 25×35     | 2.23 | 30×30     | 2.22 | 35×25     | 2.04 | 22×60     | 2.46 | 25×45     | 2.33 | 30×35     | 2.25 | 35×30     | 2.18 |
|                    | 22×50     | 2.51 | 25×40     | 2.41 |           |      |           |      |           |      |           |      |           |      |           |      |
| 390                | 22×55     | 2.75 | 25×40     | 2.50 | 30×30     | 2.29 | 35×25     | 2.11 |           |      | 25×55     | 2.68 | 30×40     | 2.51 | 35×30     | 2.27 |
|                    | 22×60     | 2.86 | 25×45     | 2.67 | 30×35     | 2.51 | 35×30     | 2.39 |           |      |           |      |           |      |           |      |
| 470                | 22×60     | 3.01 | 25×50     | 2.96 | 30×35     | 2.63 | 35×30     | 2.43 |           |      | 25×60     | 2.95 | 30×45     | 2.81 | 35×35     | 2.58 |
|                    |           |      | 25×55     | 3.09 | 30×40     | 2.82 |           |      |           |      |           |      |           |      |           |      |
| 560                |           |      | 25×55     | 3.23 | 30×40     | 2.95 | 35×35     | 2.78 |           |      |           |      | 30×50     | 3.10 | 35×40     | 2.89 |
|                    |           |      | 25×60     | 3.40 | 30×45     | 3.13 |           |      |           |      |           |      |           |      |           |      |
| 680                |           |      |           |      | 30×45     | 3.25 | 35×40     | 3.10 |           |      |           |      | 30×60     | 3.56 | 35×50     | 3.40 |
|                    |           |      |           |      | 30×50     | 3.46 |           |      |           |      |           |      |           |      |           |      |
| 820                |           |      |           |      | 30×55     | 3.77 | 35×45     | 3.43 |           |      |           |      |           |      | 35×55     | 3.72 |
|                    |           |      |           |      | 30×60     | 3.97 |           |      |           |      |           |      |           |      |           |      |
| 1000               |           |      |           |      |           |      | 35×50     | 3.79 |           |      |           |      |           |      |           |      |
|                    |           |      |           |      |           |      | 35×55     | 4.01 |           |      |           |      |           |      |           |      |
| 1200               |           |      |           |      |           |      | 35×60     | 4.40 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100                | 22×25     | 1.12 |           |      |           |      |           |      |
| 120                | 22×30     | 1.28 | 25×25     | 1.27 |           |      |           |      |
| 150                | 22×35     | 1.49 | 25×30     | 1.48 |           |      |           |      |
| 180                | 22×40     | 1.68 | 25×30     | 1.60 |           |      |           |      |
| 220                | 22×45     | 1.91 | 25×40     | 1.93 | 30×25     | 1.70 |           |      |
| 270                | 22×55     | 2.23 | 25×45     | 2.18 | 30×35     | 2.12 | 35×25     | 1.87 |
| 330                |           |      | 25×50     | 2.45 | 30×40     | 2.39 | 35×30     | 2.18 |
| 390                |           |      | 25×60     | 2.79 | 30×40     | 2.52 | 35×35     | 2.47 |
| 470                |           |      |           |      | 30×50     | 2.95 | 35×40     | 2.78 |
| 560                |           |      |           |      | 30×55     | 3.25 | 35×45     | 3.08 |
| 680                |           |      |           |      |           |      | 35×50     | 3.40 |
| 820                |           |      |           |      |           |      | 35×60     | 3.89 |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\longrightarrow$   
 リプル電流 Ripple Current (A.r.m.s./120Hz,85°C)  $\longrightarrow$

## VXG series

105°C 5000 時間  
Load Life : 105°C 5000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |             |             |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|------|------|------------|------|-------------|-------------|-------------|-------------------------------|------------------------------------------------------------------------------|-------------|-------------|-------------|-----------------|----|----|-----|-------------|-----------------|------------------------------|------------------------------------------------------------|------|------|------|------|------|------|------|------|------|-------------------------|---------------------------------------------|--|--|--|--|--|--|--|--|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |             |             |      |      | -25～+105℃  |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 10～100Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |             |             |      |      | 200～500Vdc |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |             |             |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                |             |             |             |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>200～<br/>250</td><td>400～<br/>450</td><td>475～<br/>500</td></tr><tr><td>tan δ</td><td>0.55</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.20</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                        |             |             |             |      |      |            |      |             |             |             | 定格電圧 (Vdc)<br>Rated Voltage   | 10                                                                           | 16          | 25          | 35          | 50              | 63 | 80 | 100 | 200～<br>250 | 400～<br>450     | 475～<br>500                  | tan δ                                                      | 0.55 | 0.50 | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.20 | 0.20 | 0.20                    | 0.25                                        |  |  |  |  |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 16          | 25          | 35          | 50   | 63   | 80         | 100  | 200～<br>250 | 400～<br>450 | 475～<br>500 |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| tan δ                                                                    | 0.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.50        | 0.45        | 0.40        | 0.35 | 0.30 | 0.25       | 0.20 | 0.20        | 0.20        | 0.25        |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 耐久性<br>Endurance                                                         | 105℃中で5000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 5000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="10">初期値の ±20% (10WVは±25%)以内<br/>Within ±20%(For 10WV ; ±25%)of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="10">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="10">規格値以下<br/>Not more than the specified value.</td></tr></table> |             |             |             |      |      |            |      |             |             |             | 静電容量変化率<br>Capacitance Change | 初期値の ±20% (10WVは±25%)以内<br>Within ±20%(For 10WV ; ±25%)of the initial value. |             |             |             |                 |    |    |     |             |                 | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      |      |      |      |      |      |      |      |      | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |  |  |  |  |  |  |  |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% (10WVは±25%)以内<br>Within ±20%(For 10WV ; ±25%)of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |             |             |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |             |             |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |             |             |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>10～<br/>100</td><td>200～<br/>250</td><td>400～<br/>450</td><td>475～<br/>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>3</td><td>8</td><td>10</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>12</td><td>—</td><td>—</td><td>—</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                    |             |             |             |      |      |            |      |             |             |             | 定格電圧 (Vdc)<br>Rated Voltage   | 10～<br>100                                                                   | 200～<br>250 | 400～<br>450 | 475～<br>500 | Z(-25℃)/Z(+20℃) | 3  | 3  | 8   | 10          | Z(-40℃)/Z(+20℃) | 12                           | —                                                          | —    | —    |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 10～<br>100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 200～<br>250 | 400～<br>450 | 475～<br>500 |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3           | 8           | 10          |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |
| Z(-40℃)/Z(+20℃)                                                          | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | —           | —           | —           |      |      |            |      |             |             |             |                               |                                                                              |             |             |             |                 |    |    |     |             |                 |                              |                                                            |      |      |      |      |      |      |      |      |      |                         |                                             |  |  |  |  |  |  |  |  |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | VXG             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

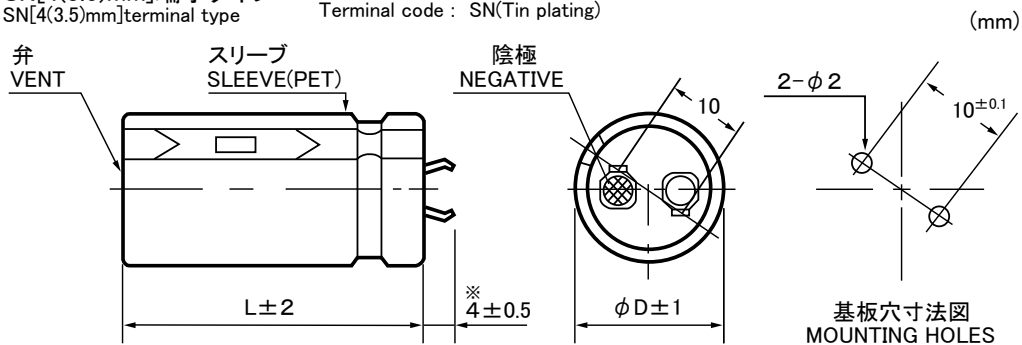
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|------------|--------------|------|------|------|------|
| 10~100Vdc             | 0.90       | 1.00         | 1.03 | 1.05 | 1.10 | 1.15 |
| 200~250Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
| 400~500Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ 端子記号 : SN(錫メッキ)  
SN[4(3.5)mm]terminal type Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 10Vdc     |      |           |      |           |      |           |      | 16Vdc     |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 5600               |           |      |           |      |           |      |           |      | 22×25     | 1.44 |           |      |           |      |           |      |
| 6800               |           |      |           |      |           |      |           |      | 22×30     | 1.66 |           |      |           |      |           |      |
| 8200               | 22×25     | 1.36 |           |      |           |      |           |      | 22×30     | 1.79 | 25×25     | 1.67 |           |      |           |      |
| 10000              | 22×30     | 1.65 |           |      |           |      |           |      | 22×35     | 2.08 | 25×30     | 2.07 |           |      |           |      |
| 12000              | 22×35     | 1.85 | 25×25     | 1.82 |           |      |           |      | 22×40     | 2.36 | 25×35     | 2.37 | 30×25     | 2.13 |           |      |
| 15000              | 22×40     | 2.12 | 25×30     | 2.11 | 30×25     | 2.14 |           |      | 22×45     | 2.69 | 25×40     | 2.72 | 30×30     | 2.54 |           |      |
| 18000              | 22×45     | 2.40 | 25×35     | 2.32 | 30×30     | 2.37 |           |      |           |      | 25×45     | 3.06 | 30×35     | 3.02 | 35×30     | 3.09 |
| 22000              |           |      | 25×40     | 2.59 | 30×30     | 2.73 |           |      |           |      | 25×50     | 3.39 | 30×40     | 3.46 | 35×30     | 3.31 |
| 27000              |           |      | 25×45     | 3.01 | 30×35     | 3.13 | 35×30     | 3.05 |           |      |           |      | 30×45     | 3.88 | 35×35     | 3.85 |
| 33000              |           |      | 25×50     | 3.43 | 30×40     | 3.53 | 35×35     | 3.49 |           |      |           |      | 30×50     | 4.33 | 35×40     | 4.33 |
| 39000              |           |      |           |      | 30×45     | 3.78 | 35×40     | 3.96 |           |      |           |      |           |      | 35×45     | 4.96 |
| 47000              |           |      |           |      | 30×50     | 4.58 | 35×45     | 4.60 |           |      |           |      |           |      | 35×50     | 5.49 |
| 56000              |           |      |           |      |           |      | 35×50     | 5.06 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 25Vdc     |      |           |      |           |      |           |      | 35Vdc     |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 2700               |           |      |           |      |           |      |           |      | 22×25     | 1.29 |           |      |           |      |           |      |
| 3300               |           |      |           |      |           |      |           |      | 22×30     | 1.54 |           |      |           |      |           |      |
| 3900               | 22×25     | 1.31 |           |      |           |      |           |      | 22×35     | 1.77 | 25×25     | 1.55 |           |      |           |      |
| 4700               | 22×30     | 1.55 |           |      |           |      |           |      | 22×40     | 2.01 | 25×30     | 1.87 |           |      |           |      |
| 5600               | 22×35     | 1.77 | 25×25     | 1.56 |           |      |           |      | 22×45     | 2.25 | 25×35     | 2.18 | 30×25     | 1.80 |           |      |
| 6800               | 22×40     | 2.02 | 25×30     | 1.88 |           |      |           |      | 22×50     | 2.49 | 25×40     | 2.45 | 30×30     | 2.28 |           |      |
| 8200               | 22×45     | 2.27 | 25×35     | 2.18 | 30×25     | 1.92 |           |      |           |      | 25×45     | 2.80 | 30×35     | 2.69 |           |      |
| 10000              | 22×50     | 2.56 | 25×40     | 2.53 | 30×30     | 2.38 |           |      |           |      |           |      | 30×40     | 3.04 | 35×30     | 2.78 |
| 12000              |           |      | 25×45     | 2.79 | 30×35     | 2.70 | 35×30     | 2.76 |           |      |           |      | 30×45     | 3.38 | 35×35     | 3.30 |
| 15000              |           |      |           |      | 30×40     | 3.13 | 35×30     | 3.00 |           |      |           |      |           |      | 35×40     | 3.88 |
| 18000              |           |      |           |      | 30×45     | 3.52 | 35×35     | 3.50 |           |      |           |      |           |      | 35×45     | 4.40 |
| 22000              |           |      |           |      | 30×50     | 3.92 | 35×40     | 3.95 |           |      |           |      |           |      |           |      |
| 27000              |           |      |           |      |           |      | 35×50     | 4.72 |           |      |           |      |           |      |           |      |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\longrightarrow$   
リップル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 50Vdc     |      |           |      |           |      |           |      | 63Vdc     |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 1000               |           |      |           |      |           |      |           |      | 22×25     | 1.10 |           |      |           |      |           |      |
| 1200               |           |      |           |      |           |      |           |      | 22×25     | 1.17 |           |      |           |      |           |      |
| 1500               | 22×25     | 1.21 |           |      |           |      |           |      | 22×30     | 1.41 | 25×25     | 1.38 |           |      |           |      |
| 1800               | 22×25     | 1.28 |           |      |           |      |           |      | 22×35     | 1.62 | 25×30     | 1.63 |           |      |           |      |
| 2200               | 22×30     | 1.52 | 25×25     | 1.46 |           |      |           |      | 22×40     | 1.85 | 25×30     | 1.75 | 30×25     | 1.66 |           |      |
| 2700               | 22×35     | 1.77 | 25×30     | 1.76 |           |      |           |      | 22×45     | 2.10 | 25×35     | 2.03 | 30×30     | 2.01 |           |      |
| 3300               | 22×40     | 2.02 | 25×30     | 1.87 | 30×25     | 1.72 |           |      |           |      | 25×40     | 2.33 | 30×30     | 2.15 |           |      |
| 3900               | 22×45     | 2.27 | 25×35     | 2.20 | 30×30     | 2.09 |           |      |           |      | 25×45     | 2.58 | 30×35     | 2.46 | 35×30     | 2.31 |
| 4700               |           |      | 25×40     | 2.43 | 30×30     | 2.22 |           |      |           |      |           |      | 30×40     | 2.82 | 35×35     | 2.77 |
| 5600               |           |      | 25×45     | 2.72 | 30×35     | 2.58 | 35×30     | 2.35 |           |      |           |      | 30×45     | 3.22 | 35×40     | 3.20 |
| 6800               |           |      |           |      | 30×40     | 3.01 | 35×35     | 2.91 |           |      |           |      |           |      | 35×45     | 3.61 |
| 8200               |           |      |           |      | 30×50     | 3.63 | 35×40     | 3.36 |           |      |           |      |           |      | 35×50     | 3.94 |
| 10000              |           |      |           |      |           |      | 35×45     | 3.79 |           |      |           |      |           |      |           |      |
| 12000              |           |      |           |      |           |      | 35×50     | 4.06 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 80Vdc     |      |           |      |           |      |           |      | 100Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 560                |           |      |           |      |           |      |           |      | 22×25     | 1.01 |           |      |           |      |           |      |
| 680                |           |      |           |      |           |      |           |      | 22×30     | 1.19 |           |      |           |      |           |      |
| 820                | 22×25     | 1.09 |           |      |           |      |           |      | 22×35     | 1.33 | 25×25     | 1.26 |           |      |           |      |
| 1000               | 22×30     | 1.29 |           |      |           |      |           |      | 22×40     | 1.56 | 25×30     | 1.52 | 30×25     | 1.47 |           |      |
| 1200               | 22×35     | 1.48 | 25×25     | 1.32 |           |      |           |      | 22×45     | 1.76 | 25×35     | 1.76 | 30×30     | 1.76 |           |      |
| 1500               | 22×40     | 1.70 | 25×30     | 1.74 | 30×25     | 1.58 |           |      | 22×50     | 2.00 | 25×40     | 2.03 | 30×30     | 1.89 |           |      |
| 1800               | 22×45     | 1.91 | 25×35     | 1.86 | 30×25     | 1.68 |           |      |           |      | 25×45     | 2.29 | 30×35     | 2.19 | 35×30     | 2.05 |
| 2200               |           |      | 25×45     | 2.22 | 30×30     | 2.02 |           |      |           |      |           |      | 30×40     | 2.52 | 35×35     | 2.48 |
| 2700               |           |      |           |      | 30×35     | 2.50 | 35×30     | 2.18 |           |      |           |      | 30×45     | 2.86 | 35×40     | 2.87 |
| 3300               |           |      |           |      | 30×40     | 2.69 | 35×35     | 2.60 |           |      |           |      |           |      | 35×45     | 3.25 |
| 3900               |           |      |           |      | 30×45     | 2.94 | 35×40     | 3.00 |           |      |           |      |           |      | 35×50     | 3.56 |
| 4700               |           |      |           |      |           |      | 35×45     | 3.44 |           |      |           |      |           |      |           |      |
| 5600               |           |      |           |      |           |      | 35×50     | 3.72 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 200Vdc    |      |           |      |           |      |           |      | 220Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 270                | 22×25     | 1.31 |           |      |           |      |           |      | 22×25     | 1.31 |           |      |           |      |           |      |
| 330                | 22×30     | 1.53 |           |      |           |      |           |      | 22×30     | 1.53 |           |      |           |      |           |      |
| 390                | 22×30     | 1.61 | 25×25     | 1.49 |           |      |           |      | 22×35     | 1.73 | 25×25     | 1.49 |           |      |           |      |
| 470                | 22×35     | 1.84 | 25×30     | 1.75 |           |      |           |      | 22×40     | 1.96 | 25×30     | 1.73 |           |      |           |      |
| 560                | 22×40     | 2.07 | 25×30     | 1.81 |           |      |           |      | 22×45     | 2.18 | 25×35     | 1.97 | 30×25     | 1.60 |           |      |
| 680                | 22×45     | 2.32 | 25×35     | 2.07 | 30×25     | 1.67 |           |      | 22×50     | 2.43 | 25×40     | 2.23 | 30×30     | 1.89 | 35×25     | 1.58 |
| 820                | 22×50     | 2.58 | 25×40     | 2.33 | 30×30     | 1.95 | 35×25     | 1.65 | 22×60     | 2.80 | 25×45     | 2.48 | 30×35     | 2.17 | 35×30     | 1.91 |
| 1000               |           |      | 25×45     | 2.62 | 30×35     | 2.23 | 35×30     | 1.94 |           |      | 25×50     | 2.77 | 30×40     | 2.43 | 35×35     | 2.21 |
| 1200               |           |      |           |      | 30×40     | 2.50 | 35×35     | 2.24 |           |      | 25×60     | 3.16 | 30×45     | 2.68 | 35×40     | 2.48 |
| 1500               |           |      |           |      | 30×45     | 2.82 | 35×40     | 2.56 |           |      |           |      | 30×50     | 3.01 | 35×40     | 2.50 |
| 1800               |           |      |           |      |           |      | 35×45     | 2.85 |           |      |           |      | 30×60     | 3.48 | 35×50     | 3.04 |
| 2200               |           |      |           |      |           |      | 35×50     | 3.14 |           |      |           |      |           |      | 35×60     | 3.40 |

ケースサイズ Case Size  $\phi$  D×L(mm)  $\longrightarrow$   
 リプル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 250Vdc    |      |           |      |           |      |           |      | 400Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 |           |      |           |      |           |      |           |      | 22×25     | 0.77 |           |      |           |      |           |      |
| 100                |           |      |           |      |           |      |           |      | 22×30     | 0.89 |           |      |           |      |           |      |
| 120                |           |      |           |      |           |      |           |      | 22×30     | 0.96 | 25×25     | 0.95 |           |      |           |      |
| 150                |           |      |           |      |           |      |           |      | 22×35     | 1.11 | 25×30     | 1.11 |           |      |           |      |
| 180                |           |      |           |      |           |      |           |      | 22×40     | 1.25 | 25×35     | 1.26 | 30×25     | 1.16 |           |      |
| 220                | 22×25     | 1.22 |           |      |           |      |           |      | 22×50     | 1.47 | 25×35     | 1.35 | 30×30     | 1.35 | 35×25     | 1.26 |
| 270                | 22×30     | 1.43 |           |      |           |      |           |      | 22×55     | 1.65 | 25×45     | 1.61 | 30×35     | 1.54 | 35×30     | 1.48 |
| 330                | 22×35     | 1.64 | 25×25     | 1.39 |           |      |           |      |           |      | 25×50     | 1.80 | 30×40     | 1.74 | 35×30     | 1.54 |
| 390                | 22×40     | 1.84 | 25×30     | 1.65 |           |      |           |      |           |      | 25×55     | 1.99 | 30×45     | 1.93 | 35×35     | 1.74 |
| 470                | 22×45     | 2.06 | 25×35     | 1.88 | 30×25     | 1.55 |           |      |           |      |           |      | 30×50     | 2.14 | 35×40     | 1.95 |
| 560                | 22×50     | 2.29 | 25×40     | 2.11 | 30×30     | 1.84 | 35×25     | 1.56 |           |      |           |      | 30×60     | 2.44 | 35×45     | 2.19 |
| 680                | 22×55     | 2.54 | 25×45     | 2.36 | 30×35     | 2.11 | 35×30     | 1.80 |           |      |           |      |           |      | 35×50     | 2.40 |
| 820                |           |      | 25×50     | 2.61 | 30×40     | 2.36 | 35×30     | 1.81 |           |      |           |      |           |      | 35×60     | 2.77 |
| 1000               |           |      | 25×60     | 3.02 | 30×45     | 2.63 | 35×35     | 2.38 |           |      |           |      |           |      |           |      |
| 1200               |           |      |           |      | 30×50     | 2.85 | 35×40     | 2.41 |           |      |           |      |           |      |           |      |
| 1500               |           |      |           |      | 30×60     | 3.31 | 35×50     | 2.92 |           |      |           |      |           |      |           |      |
| 1800               |           |      |           |      |           |      | 35×55     | 3.12 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 420Vdc    |      |           |      |           |      |           |      | 450Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 | 22×25     | 0.75 |           |      |           |      |           |      | 22×25     | 0.76 |           |      |           |      |           |      |
| 100                | 22×30     | 0.87 |           |      |           |      |           |      | 22×30     | 0.88 | 25×25     | 0.86 |           |      |           |      |
| 120                | 22×35     | 0.99 | 25×25     | 0.93 |           |      |           |      | 22×35     | 1.00 | 25×30     | 0.99 |           |      |           |      |
| 150                | 22×40     | 1.14 | 25×30     | 1.08 |           |      |           |      | 22×40     | 1.14 | 25×30     | 1.09 | 30×25     | 1.08 |           |      |
| 180                | 22×45     | 1.28 | 25×35     | 1.23 | 30×25     | 1.14 |           |      | 22×45     | 1.29 | 25×35     | 1.23 | 30×30     | 1.24 |           |      |
| 220                | 22×50     | 1.44 | 25×40     | 1.39 | 30×30     | 1.32 | 35×25     | 1.24 | 22×55     | 1.49 | 25×40     | 1.40 | 30×30     | 1.32 | 35×25     | 1.23 |
| 270                | 22×60     | 1.66 | 25×45     | 1.57 | 30×35     | 1.51 | 35×30     | 1.45 |           |      | 25×50     | 1.64 | 30×35     | 1.51 | 35×30     | 1.45 |
| 330                |           |      | 25×50     | 1.77 | 30×40     | 1.71 | 35×35     | 1.66 |           |      |           |      | 30×45     | 1.80 | 35×35     | 1.65 |
| 390                |           |      | 25×60     | 2.01 | 30×45     | 1.89 | 35×40     | 1.86 |           |      |           |      | 30×50     | 1.98 | 35×40     | 1.85 |
| 470                |           |      |           |      | 30×50     | 2.09 | 35×40     | 1.93 |           |      |           |      | 30×55     | 2.19 | 35×45     | 2.05 |
| 560                |           |      |           |      | 30×60     | 2.39 | 35×50     | 2.27 |           |      |           |      |           |      | 35×50     | 2.26 |
| 680                |           |      |           |      |           |      | 35×55     | 2.48 |           |      |           |      |           |      | 35×55     | 2.49 |
| 820                |           |      |           |      |           |      | 35×60     | 2.69 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 475Vdc    |      |           |      |           |      |           |      | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 47                 |           |      |           |      |           |      |           |      | 22×25     | 0.58 |           |      |           |      |           |      |
| 56                 | 22×25     | 0.62 |           |      |           |      |           |      | 22×30     | 0.66 |           |      |           |      |           |      |
| 68                 | 22×30     | 0.71 |           |      |           |      |           |      | 22×30     | 0.73 | 25×25     | 0.72 |           |      |           |      |
| 82                 | 22×30     | 0.77 | 25×25     | 0.77 |           |      |           |      | 22×35     | 0.83 | 25×30     | 0.83 | 30×25     | 0.83 |           |      |
| 100                | 22×35     | 0.89 | 25×30     | 0.88 |           |      |           |      | 22×40     | 0.94 | 25×35     | 0.94 | 30×25     | 0.91 |           |      |
| 120                | 22×40     | 1.00 | 25×30     | 0.96 | 30×25     | 0.96 |           |      | 22×50     | 1.08 | 25×35     | 1.02 | 30×30     | 1.04 | 35×25     | 1.01 |
| 150                | 22×45     | 1.15 | 25×35     | 1.11 | 30×30     | 1.12 |           |      | 22×55     | 1.24 | 25×45     | 1.21 | 30×35     | 1.19 | 35×30     | 1.18 |
| 180                | 22×55     | 1.32 | 25×40     | 1.25 | 30×30     | 1.20 | 35×25     | 1.14 | 22×60     | 1.38 | 25×50     | 1.36 | 30×40     | 1.34 | 35×30     | 1.25 |
| 220                |           |      | 25×50     | 1.45 | 30×35     | 1.36 | 35×30     | 1.33 |           |      | 25×55     | 1.52 | 30×45     | 1.51 | 35×40     | 1.51 |
| 270                |           |      | 25×60     | 1.68 | 30×40     | 1.55 | 35×35     | 1.52 |           |      |           |      | 30×50     | 1.69 | 35×40     | 1.62 |
| 330                |           |      |           |      | 30×55     | 1.89 | 35×40     | 1.71 |           |      |           |      | 30×55     | 1.89 | 35×45     | 1.81 |
| 390                |           |      |           |      |           |      | 35×50     | 1.99 |           |      |           |      |           |      | 35×55     | 2.08 |
| 470                |           |      |           |      |           |      | 35×60     | 2.28 |           |      |           |      |           |      | 35×60     | 2.28 |

ケースサイズ Case Size  $\phi$  D×L(mm)

リプル電流 Ripple Current (A.r.m.s./120Hz,105°C)

## VXH series

105°C 5000 時間 小形化品  
Load Life : 105°C 5000 hours, Miniaturized



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|---|----|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
| 定格電圧範囲<br>Rated Voltage Range                                            | 200～500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>200～450</td><td>475, 500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                            | 定格電圧 (Vdc)<br>Rated Voltage   | 200～450                                                                      | 475, 500                     | tan δ                                                      | 0.20                    | 0.25                                        |   |    |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 200～450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 475, 500                      |                                                                              |                              |                                                            |                         |                                             |   |    |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.25                          |                                                                              |                              |                                                            |                         |                                             |   |    |
| 耐久性<br>Endurance                                                         | 105℃中で5000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 5000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% (10WVは±25%)以内<br/>Within ±20%(For 10WV ; ±25%)of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% (10WVは±25%)以内<br>Within ±20%(For 10WV ; ±25%)of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |   |    |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% (10WVは±25%)以内<br>Within ±20%(For 10WV ; ±25%)of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                                              |                              |                                                            |                         |                                             |   |    |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>200～250</td><td>315～450</td><td>475, 500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>8</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 200～250                                                                      | 315～450                      | 475, 500                                                   | Z(-25℃)/Z(+20℃)         | 3                                           | 8 | 10 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 200～250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 315～450                       | 475, 500                                                                     |                              |                                                            |                         |                                             |   |    |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 8                             | 10                                                                           |                              |                                                            |                         |                                             |   |    |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | VXH             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

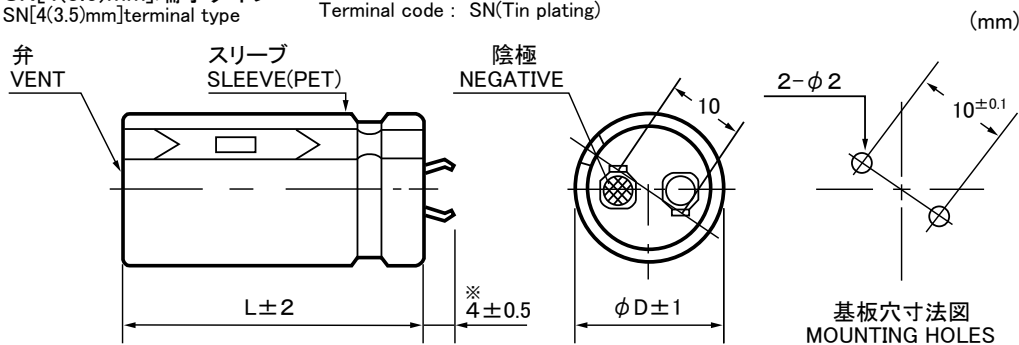
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|------------|--------------|------|------|------|------|
| 200~250Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
| 315~500Vdc            | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ 端子記号 : SN(錫メッキ)  
SN[4(3.5)mm]terminal type Terminal code : SN(Tin plating)



基板穴寸法図  
MOUNTING HOLES

※ 但し  $\phi 35$  は  $3.5 \pm 0.5$   
For  $\phi 35$ ,  $3.5 \pm 0.5$

◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu F$ ) | 200Vdc    |      |           |      |           |      |           |      | 220Vdc    |      |           |      |           |      |           |      |
|---------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                     | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 270                 |           |      |           |      |           |      |           |      | 22×25     | 1.33 |           |      |           |      |           |      |
| 330                 | 22×25     | 1.41 |           |      |           |      |           |      | 22×30     | 1.55 |           |      |           |      |           |      |
| 390                 | 22×30     | 1.63 |           |      |           |      |           |      | 22×30     | 1.63 | 25×25     | 1.50 |           |      |           |      |
| 470                 | 22×30     | 1.72 | 25×25     | 1.57 |           |      |           |      | 22×35     | 1.85 | 25×30     | 1.76 |           |      |           |      |
| 560                 | 22×35     | 1.95 | 25×30     | 1.84 |           |      |           |      | 22×40     | 2.08 | 25×30     | 1.83 | 30×25     | 1.64 |           |      |
| 680                 | 22×40     | 2.22 | 25×35     | 2.11 | 30×25     | 1.69 |           |      | 22×45     | 2.34 | 25×35     | 2.10 | 30×30     | 1.94 |           |      |
| 820                 | 22×50     | 2.60 | 25×40     | 2.37 | 30×30     | 2.01 | 35×25     | 1.68 | 22×55     | 2.73 | 25×40     | 2.35 | 30×30     | 1.99 | 35×25     | 1.89 |
| 1000                | 22×60     | 3.00 | 25×45     | 2.63 | 30×35     | 2.30 | 35×30     | 2.02 |           |      | 25×45     | 2.65 | 30×35     | 2.26 | 35×30     | 2.15 |
| 1200                |           |      | 25×50     | 2.88 | 30×40     | 2.55 | 35×30     | 2.22 |           |      | 25×60     | 3.19 | 30×40     | 2.53 | 35×35     | 2.48 |
| 1500                |           |      |           |      | 30×45     | 2.80 | 35×35     | 2.56 |           |      |           |      | 30×50     | 2.97 | 35×40     | 2.50 |
| 1800                |           |      |           |      | 30×50     | 3.08 | 35×40     | 2.85 |           |      |           |      | 30×60     | 3.43 | 35×45     | 3.04 |
| 2200                |           |      |           |      |           |      | 35×50     | 3.14 |           |      |           |      |           |      | 35×55     | 3.18 |
| 2700                |           |      |           |      |           |      | 35×60     | 3.49 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu F$ ) | 250Vdc    |      |           |      |           |      |           |      | 315Vdc    |      |           |      |           |      |           |      |
|---------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                     | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 150                 |           |      |           |      |           |      |           |      | 22×25     | 1.00 |           |      |           |      |           |      |
| 180                 |           |      |           |      |           |      |           |      | 22×30     | 1.14 |           |      |           |      |           |      |
| 220                 |           |      |           |      |           |      |           |      | 22×35     | 1.31 | 25×25     | 1.20 |           |      |           |      |
| 270                 | 22×25     | 1.32 |           |      |           |      |           |      | 22×40     | 1.49 | 25×30     | 1.39 |           |      |           |      |
| 330                 | 22×30     | 1.54 | 25×25     | 1.45 |           |      |           |      | 22×45     | 1.69 | 25×35     | 1.59 | 30×25     | 1.41 |           |      |
| 390                 | 22×35     | 1.75 | 25×30     | 1.68 |           |      |           |      | 22×50     | 1.87 | 25×40     | 1.78 | 30×30     | 1.63 | 35×25     | 1.48 |
| 470                 | 22×40     | 1.97 | 25×30     | 1.75 |           |      |           |      | 22×55     | 2.09 | 25×45     | 1.99 | 30×35     | 1.86 | 35×30     | 1.74 |
| 560                 | 22×45     | 2.20 | 25×35     | 1.99 | 30×25     | 1.63 |           |      | 22×60     | 2.29 | 25×50     | 2.21 | 30×40     | 2.08 | 35×30     | 1.76 |
| 680                 | 22×50     | 2.45 | 25×40     | 2.25 | 30×30     | 1.92 | 35×25     | 1.80 |           |      | 25×55     | 2.44 | 30×45     | 2.32 | 35×35     | 2.01 |
| 820                 | 22×60     | 2.81 | 25×45     | 2.49 | 30×35     | 2.19 | 35×30     | 1.94 |           |      | 25×60     | 2.68 | 30×50     | 2.55 | 35×40     | 2.26 |
| 1000                |           |      | 25×55     | 2.91 | 30×40     | 2.44 | 35×35     | 2.38 |           |      |           |      | 30×55     | 2.78 | 35×50     | 2.70 |
| 1200                |           |      |           |      | 30×45     | 2.68 | 35×40     | 2.47 |           |      |           |      | 30×60     | 3.01 | 35×55     | 2.92 |
| 1500                |           |      |           |      | 30×55     | 3.15 | 35×45     | 2.92 |           |      |           |      |           |      | 35×60     | 3.12 |
| 1800                |           |      |           |      |           |      | 35×50     | 3.04 |           |      |           |      |           |      |           |      |
| 2200                |           |      |           |      |           |      | 35×60     | 3.37 |           |      |           |      |           |      |           |      |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\longrightarrow$   
リップル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$



### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 350Vdc    |      |           |      |           |      |           |      | 385Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 120                | 22×25     | 0.92 |           |      |           |      |           |      | 22×25     | 0.93 |           |      |           |      |           |      |
| 150                | 22×30     | 1.08 |           |      |           |      |           |      | 22×30     | 1.08 |           |      |           |      |           |      |
| 180                | 22×35     | 1.22 | 25×25     | 1.13 |           |      |           |      | 22×30     | 1.17 | 25×25     | 1.13 |           |      |           |      |
| 220                | 22×40     | 1.39 | 25×30     | 1.30 |           |      |           |      | 22×35     | 1.33 | 25×30     | 1.31 |           |      |           |      |
| 270                | 22×45     | 1.57 | 25×35     | 1.49 | 30×25     | 1.34 |           |      | 22×45     | 1.58 | 25×35     | 1.50 | 30×25     | 1.33 |           |      |
| 330                | 22×50     | 1.77 | 25×40     | 1.69 | 30×30     | 1.56 | 35×25     | 1.42 | 22×50     | 1.78 | 25×40     | 1.70 | 30×30     | 1.55 | 35×25     | 1.40 |
| 390                | 22×55     | 1.96 | 25×45     | 1.88 | 30×35     | 1.77 | 35×30     | 1.66 | 22×60     | 2.03 | 25×45     | 1.88 | 30×35     | 1.76 | 35×30     | 1.64 |
| 470                | 22×60     | 2.17 | 25×50     | 2.09 | 30×40     | 1.99 | 35×35     | 1.90 |           |      | 25×55     | 2.18 | 30×40     | 1.97 | 35×35     | 1.87 |
| 560                |           |      | 25×55     | 2.30 | 30×45     | 2.20 | 35×40     | 2.13 |           |      | 25×60     | 2.39 | 30×45     | 2.18 | 35×35     | 1.89 |
| 680                |           |      |           |      | 30×50     | 2.43 | 35×40     | 2.17 |           |      |           |      | 30×50     | 2.40 | 35×40     | 2.12 |
| 820                |           |      |           |      | 30×55     | 2.65 | 35×45     | 2.39 |           |      |           |      | 30×60     | 2.76 | 35×50     | 2.53 |
| 1000               |           |      |           |      |           |      | 35×50     | 2.61 |           |      |           |      |           |      | 35×55     | 2.74 |
| 1200               |           |      |           |      |           |      | 35×60     | 3.01 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      | 420Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100                |           |      |           |      |           |      |           |      | 22×25     | 0.85 |           |      |           |      |           |      |
| 120                | 22×25     | 0.91 |           |      |           |      |           |      | 22×30     | 0.97 |           |      |           |      |           |      |
| 150                | 22×30     | 1.06 | 25×25     | 1.04 |           |      |           |      | 22×35     | 1.12 | 25×25     | 1.03 |           |      |           |      |
| 180                | 22×35     | 1.21 | 25×30     | 1.19 |           |      |           |      | 22×40     | 1.26 | 25×30     | 1.19 |           |      |           |      |
| 220                | 22×40     | 1.37 | 25×30     | 1.28 | 30×25     | 1.25 |           |      | 22×45     | 1.43 | 25×35     | 1.36 | 30×25     | 1.23 |           |      |
| 270                | 22×45     | 1.56 | 25×35     | 1.47 | 30×30     | 1.45 |           |      | 22×50     | 1.61 | 25×40     | 1.55 | 30×30     | 1.44 | 35×25     | 1.32 |
| 330                | 22×55     | 1.81 | 25×40     | 1.66 | 30×30     | 1.55 | 35×25     | 1.36 | 22×60     | 1.86 | 25×45     | 1.74 | 30×35     | 1.64 | 35×30     | 1.55 |
| 390                |           |      | 25×50     | 1.93 | 30×35     | 1.72 | 35×30     | 1.61 |           |      | 25×55     | 2.00 | 30×40     | 1.83 | 35×35     | 1.76 |
| 470                |           |      | 25×55     | 2.14 | 30×40     | 1.93 | 35×35     | 1.83 |           |      | 25×60     | 2.20 | 30×45     | 2.04 | 35×35     | 1.80 |
| 560                |           |      |           |      | 30×45     | 2.13 | 35×40     | 2.04 |           |      |           |      | 30×50     | 2.24 | 35×40     | 2.07 |
| 680                |           |      |           |      | 30×55     | 2.48 | 35×45     | 2.26 |           |      |           |      | 30×60     | 2.57 | 35×50     | 2.43 |
| 820                |           |      |           |      |           |      | 35×50     | 2.47 |           |      |           |      |           |      | 35×55     | 2.60 |
| 1000               |           |      |           |      |           |      | 35×60     | 2.85 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      | 475Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 68                 |           |      |           |      |           |      |           |      | 22×25     | 0.68 |           |      |           |      |           |      |
| 82                 |           |      |           |      |           |      |           |      | 22×30     | 0.78 |           |      |           |      |           |      |
| 100                | 22×25     | 0.85 |           |      |           |      |           |      | 22×35     | 0.90 | 25×25     | 0.85 |           |      |           |      |
| 120                | 22×30     | 0.98 | 25×25     | 0.96 |           |      |           |      | 22×35     | 0.98 | 25×30     | 0.97 |           |      |           |      |
| 150                | 22×35     | 1.13 | 25×30     | 1.12 |           |      |           |      | 22×45     | 1.16 | 25×35     | 1.12 | 30×25     | 1.05 |           |      |
| 180                | 22×40     | 1.27 | 25×30     | 1.19 | 30×25     | 1.17 |           |      | 22×50     | 1.30 | 25×40     | 1.26 | 30×30     | 1.21 | 35×25     | 1.17 |
| 220                | 22×45     | 1.44 | 25×35     | 1.37 | 30×30     | 1.36 | 35×25     | 1.27 | 22×60     | 1.50 | 25×45     | 1.43 | 30×35     | 1.38 | 35×30     | 1.36 |
| 270                | 22×55     | 1.68 | 25×45     | 1.62 | 30×30     | 1.43 | 35×30     | 1.48 |           |      | 25×50     | 1.61 | 30×40     | 1.57 | 35×30     | 1.43 |
| 330                |           |      | 25×50     | 1.82 | 30×40     | 1.75 | 35×30     | 1.53 |           |      | 25×60     | 1.85 | 30×45     | 1.76 | 35×35     | 1.63 |
| 390                |           |      | 25×55     | 2.00 | 30×45     | 1.93 | 35×35     | 1.74 |           |      |           |      | 30×50     | 1.94 | 35×40     | 1.82 |
| 470                |           |      |           |      | 30×50     | 2.14 | 35×40     | 1.95 |           |      |           |      | 30×60     | 2.22 | 35×45     | 2.02 |
| 560                |           |      |           |      | 30×55     | 2.36 | 35×45     | 2.16 |           |      |           |      |           |      | 35×55     | 2.34 |
| 680                |           |      |           |      |           |      | 35×50     | 2.41 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 56                 | 22×25     | 0.64 |           |      |           |      |           |      |
| 68                 | 22×30     | 0.73 |           |      |           |      |           |      |
| 82                 | 22×30     | 0.80 | 25×25     | 0.79 |           |      |           |      |
| 100                | 22×35     | 0.92 | 25×30     | 0.91 |           |      |           |      |
| 120                | 22×40     | 1.03 | 25×35     | 1.04 | 30×25     | 0.98 |           |      |
| 150                | 22×50     | 1.22 | 25×40     | 1.19 | 30×30     | 1.14 | 35×25     | 1.11 |
| 180                | 22×60     | 1.39 | 25×45     | 1.33 | 30×35     | 1.30 | 35×30     | 1.28 |
| 220                |           |      | 25×50     | 1.50 | 30×40     | 1.47 | 35×30     | 1.35 |
| 270                |           |      | 25×60     | 1.73 | 30×45     | 1.65 | 35×35     | 1.54 |
| 330                |           |      |           |      | 30×55     | 1.91 | 35×40     | 1.74 |
| 390                |           |      |           |      | 30×60     | 2.10 | 35×45     | 1.92 |
| 470                |           |      |           |      |           |      | 35×55     | 2.23 |

ケースサイズ Case Size  $\phi$  D×L(mm)  $\rightarrow$   
 リプル電流 Ripple Current (A.r.m.s./120Hz, 105°C)  $\rightarrow$

## VXK series

105°C 5000時間 超小形化品  
Load Life : 105°C 5000 hours, Ultra Miniaturized



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------|-------------------------------|---------------------------------------------------|------|------------------------------|------------------------------------------------------------|--|-------------------------|---------------------------------------------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                     |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～<br/>450</td><td>475,<br/>500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                          | 定格電圧 (Vdc)<br>Rated Voltage | 400～<br>450 | 475,<br>500                   | tan δ                                             | 0.20 | 0.25                         | (20℃, 120Hz)                                               |  |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～<br>450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 475,<br>500                 |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.25                        |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 耐久性<br>Endurance                                                         | 105℃中で5000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 5000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td></tr></table> |                             |             | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |      | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |  | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～<br/>450</td><td>475,<br/>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>8</td><td>10</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                     | 定格電圧 (Vdc)<br>Rated Voltage | 400～<br>450 | 475,<br>500                   | Z(-25℃)/Z(+20℃)                                   | 8    | 10                           | (120Hz)                                                    |  |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～<br>450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 475,<br>500                 |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |
| Z(-25℃)/Z(+20℃)                                                          | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10                          |             |                               |                                                   |      |                              |                                                            |  |                         |                                             |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | VXK             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

|                       |            |              |      |      |      |      |
|-----------------------|------------|--------------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数 Coefficient        | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

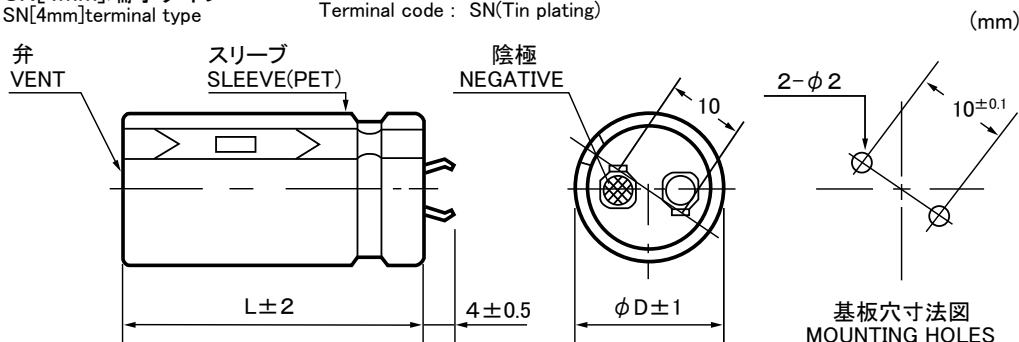
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      | 420Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 120                |           |      |           |      |           |      |           |      | 22×25     | 0.92 |           |      |           |      |           |      |
| 150                | 22×25     | 1.01 |           |      |           |      |           |      | 22×30     | 1.08 |           |      |           |      |           |      |
| 180                | 22×30     | 1.17 | 25×25     | 1.13 |           |      |           |      | 22×30     | 1.16 | 25×25     | 1.12 |           |      |           |      |
|                    |           |      |           |      |           |      |           |      | 22×35     | 1.23 |           |      |           |      |           |      |
| 220                | 22×35     | 1.33 | 25×30     | 1.31 |           |      |           |      | 22×35     | 1.33 | 25×30     | 1.30 |           |      |           |      |
|                    |           |      |           |      |           |      |           |      | 22×40     | 1.40 |           |      |           |      |           |      |
| 270                | 22×40     | 1.52 | 25×30     | 1.40 | 30×25     | 1.33 |           |      | 22×40     | 1.51 | 25×35     | 1.49 | 30×25     | 1.32 |           |      |
|                    |           |      | 25×35     | 1.50 |           |      |           |      | 22×45     | 1.58 |           |      |           |      |           |      |
| 330                | 22×45     | 1.71 | 25×35     | 1.61 | 30×30     | 1.55 |           |      | 22×50     | 1.78 | 25×40     | 1.69 | 30×30     | 1.54 | 35×25     | 1.40 |
|                    | 22×50     | 1.78 | 25×40     | 1.70 |           |      |           |      |           |      |           |      |           |      |           |      |
| 390                | 22×50     | 1.90 | 25×40     | 1.80 | 30×30     | 1.60 | 35×25     | 1.43 | 22×55     | 1.96 | 25×45     | 1.88 | 30×35     | 1.75 | 35×30     | 1.64 |
|                    | 22×55     | 1.97 | 25×45     | 1.89 |           |      |           |      | 22×60     | 2.02 |           |      |           |      |           |      |
| 470                | 22×60     | 2.18 | 25×50     | 2.10 | 30×35     | 1.82 | 35×30     | 1.68 |           |      | 25×50     | 2.10 | 30×40     | 1.96 | 35×30     | 1.70 |
|                    |           |      |           |      |           |      |           |      |           |      | 25×55     | 2.17 |           |      | 35×35     | 1.85 |
| 560                |           |      | 25×55     | 2.31 | 30×40     | 2.04 | 35×35     | 1.92 |           |      | 25×60     | 2.40 | 30×45     | 2.20 | 35×35     | 1.94 |
|                    |           |      |           |      |           |      |           |      |           |      |           |      | 30×50     | 2.29 | 35×40     | 2.07 |
| 680                |           |      |           |      | 30×45     | 2.31 | 35×35     | 2.00 |           |      |           |      | 30×50     | 2.43 | 35×40     | 2.17 |
|                    |           |      |           |      | 30×50     | 2.42 | 35×40     | 2.15 |           |      |           |      | 30×55     | 2.51 | 35×45     | 2.29 |
| 820                |           |      |           |      | 30×55     | 2.64 | 35×45     | 2.37 |           |      |           |      |           |      | 35×45     | 2.41 |
|                    |           |      |           |      |           |      |           |      |           |      |           |      |           |      | 35×50     | 2.50 |
| 1000               |           |      |           |      |           |      | 35×50     | 2.58 |           |      |           |      |           |      | 35×60     | 2.89 |
| 1200               |           |      |           |      |           |      | 35×60     | 2.95 |           |      |           |      |           |      |           |      |

ケースサイズ Case Size  $\phi D \times L$ (mm)  $\longrightarrow$   
リップル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      | 475Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 |           |      |           |      |           |      |           |      | 22×25     | 0.74 |           |      |           |      |           |      |
| 100                |           |      |           |      |           |      |           |      | 22×30     | 0.84 | 25×25     | 0.85 |           |      |           |      |
| 120                | 22×25     | 0.93 |           |      |           |      |           |      | 22×30     | 0.91 | 25×30     | 0.95 |           |      |           |      |
| 150                | 22×30     | 1.09 | 25×25     | 1.06 |           |      |           |      | 22×35     | 1.05 | 25×30     | 1.04 | 30×25     | 1.05 |           |      |
| 180                | 22×35     | 1.24 | 25×30     | 1.22 |           |      |           |      | 22×40     | 1.19 | 25×35     | 1.19 | 30×30     | 1.19 |           |      |
| 220                | 22×40     | 1.41 | 25×30     | 1.31 | 30×25     | 1.26 |           |      | 22×45     | 1.34 | 25×40     | 1.35 | 30×30     | 1.28 | 35×25     | 1.22 |
|                    |           |      | 25×35     | 1.39 |           |      |           |      |           |      |           |      |           |      |           |      |
| 270                | 22×45     | 1.59 | 25×35     | 1.50 | 30×30     | 1.46 | 35×25     | 1.35 | 22×55     | 1.56 | 25×45     | 1.52 | 30×35     | 1.47 | 35×30     | 1.43 |
|                    | 22×50     | 1.65 | 25×40     | 1.58 |           |      |           |      |           |      |           |      |           |      |           |      |
| 330                | 22×55     | 1.85 | 25×45     | 1.78 | 30×30     | 1.55 | 35×25     | 1.41 |           |      | 25×50     | 1.71 | 30×40     | 1.66 | 35×30     | 1.50 |
|                    |           |      |           |      | 30×35     | 1.67 | 35×30     | 1.58 |           |      |           |      |           |      |           |      |
| 390                | 22×60     | 2.03 | 25×50     | 1.97 | 30×35     | 1.75 | 35×30     | 1.61 |           |      | 25×60     | 1.95 | 30×40     | 1.75 | 35×35     | 1.70 |
|                    |           |      |           |      | 30×40     | 1.87 |           |      |           |      |           |      |           |      |           |      |
| 470                |           |      | 25×55     | 2.18 | 30×40     | 1.97 | 35×35     | 1.84 |           |      |           |      | 30×50     | 2.04 | 35×40     | 1.90 |
|                    |           |      | 25×60     | 2.26 | 30×45     | 2.08 |           |      |           |      |           |      |           |      |           |      |
| 560                |           |      |           |      | 30×50     | 2.29 | 35×40     | 2.06 |           |      |           |      | 30×60     | 2.33 | 35×45     | 2.11 |
| 680                |           |      |           |      | 30×55     | 2.54 | 35×45     | 2.28 |           |      |           |      |           |      | 35×55     | 2.45 |
|                    |           |      |           |      | 30×60     | 2.63 |           |      |           |      |           |      |           |      |           |      |
| 820                |           |      |           |      |           |      | 35×50     | 2.55 |           |      |           |      |           |      |           |      |
|                    |           |      |           |      |           |      | 35×55     | 2.66 |           |      |           |      |           |      |           |      |
| 1000               |           |      |           |      |           |      | 35×60     | 2.93 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 68                 | 22×25     | 0.69 |           |      |           |      |           |      |
| 82                 | 22×30     | 0.77 |           |      |           |      |           |      |
| 100                | 22×30     | 0.85 |           |      |           |      |           |      |
| 120                | 22×35     | 0.96 | 25×30     | 0.96 |           |      |           |      |
| 150                | 22×40     | 1.11 | 25×30     | 1.06 |           |      |           |      |
| 180                | 22×45     | 1.25 | 25×35     | 1.20 | 30×30     | 1.20 | 35×25     | 1.16 |
| 220                | 22×50     | 1.40 | 25×40     | 1.36 | 30×30     | 1.29 | 35×30     | 1.35 |
| 270                | 22×60     | 1.62 | 25×50     | 1.60 | 30×35     | 1.48 | 35×30     | 1.43 |
| 330                |           |      | 25×55     | 1.78 | 30×40     | 1.67 | 35×35     | 1.63 |
| 390                |           |      |           |      | 30×45     | 1.85 | 35×40     | 1.82 |
| 470                |           |      |           |      | 30×55     | 2.14 | 35×45     | 2.02 |
| 560                |           |      |           |      | 30×60     | 2.34 | 35×50     | 2.23 |
| 680                |           |      |           |      |           |      | 35×55     | 2.44 |

ケースサイズ Case Size  $\phi$  D × L(mm)

リップル電流 Ripple Current (A.r.m.s./120Hz, 105°C)

## VXR series

105°C 7000時間  
Load Life : 105°C 7000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|-------------------------------|---------------------------------------------------|-------------|--------------|------------------------------|------------------------------------------------------------|------|--|-------------------------|---------------------------------------------|--|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                    |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～<br/>250</td><td>315～<br/>450</td><td rowspan="2">(20℃, 120Hz)</td></tr><tr><td>tan δ</td><td>0.15</td><td>0.20</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                        |             |              | 定格電圧 (Vdc)<br>Rated Voltage   | 160～<br>250                                       | 315～<br>450 | (20℃, 120Hz) | tan δ                        | 0.15                                                       | 0.20 |  |                         |                                             |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～<br>250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 315～<br>450 | (20℃, 120Hz) |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| tan δ                                                                    | 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.20        |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 耐久性<br>Endurance                                                         | 105℃中で7000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 7000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="3">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="3">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="3">規格値以下<br/>Not more than the specified value.</td></tr></table> |             |              | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |             |              | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      |  | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～<br/>250</td><td>315～<br/>450</td><td rowspan="2">(120Hz)</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>8</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                         |             |              | 定格電圧 (Vdc)<br>Rated Voltage   | 160～<br>250                                       | 315～<br>450 | (120Hz)      | Z(-25℃)/Z(+20℃)              | 3                                                          | 8    |  |                         |                                             |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～<br>250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 315～<br>450 | (120Hz)      |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8           |              |                               |                                                   |             |              |                              |                                                            |      |  |                         |                                             |  |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | VXR             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

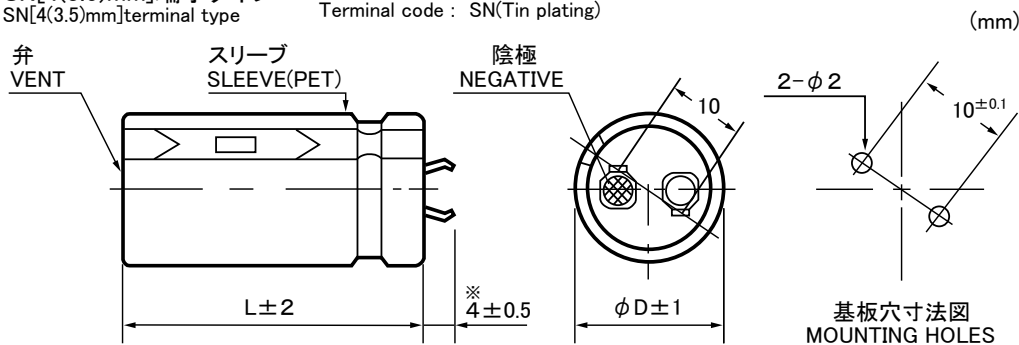
| 周波数 (Hz)<br>Frequency |                | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|----------------|------------|--------------|------|------|------|------|
| 係数<br>Coefficient     | 160~<br>250Vdc | 0.80       | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
|                       | 315~<br>450Vdc | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4(3.5)mm]端子タイプ 端子記号 : SN(錫メッキ)  
SN[4(3.5)mm]terminal type Terminal code : SN(Tin plating)



※ 但し  $\phi 35$  は  $3.5 \pm 0.5$   
For  $\phi 35$ ,  $3.5 \pm 0.5$

◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu F$ ) | 160Vdc    |      |           |      |           |      |           |      | 180Vdc    |      |           |      |           |      |           |      |
|---------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                     | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 220                 |           |      |           |      |           |      |           |      | 22×25     | 1.00 |           |      |           |      |           |      |
| 270                 | 22×25     | 1.10 |           |      |           |      |           |      | 22×25     | 1.10 |           |      |           |      |           |      |
| 330                 | 22×25     | 1.20 |           |      |           |      |           |      | 22×30     | 1.20 | 25×25     | 1.20 |           |      |           |      |
| 390                 | 22×30     | 1.30 | 25×25     | 1.30 |           |      |           |      | 22×30     | 1.30 | 25×25     | 1.30 |           |      |           |      |
| 470                 | 22×35     | 1.40 | 25×30     | 1.40 |           |      |           |      | 22×35     | 1.40 | 25×30     | 1.40 | 30×25     | 1.40 |           |      |
| 560                 | 22×40     | 1.50 | 25×30     | 1.50 | 30×25     | 1.50 |           |      | 22×40     | 1.50 | 25×35     | 1.50 | 30×25     | 1.50 |           |      |
| 680                 | 22×45     | 1.70 | 25×35     | 1.70 | 30×30     | 1.70 |           |      | 22×45     | 1.70 | 25×35     | 1.70 | 30×30     | 1.70 |           |      |
| 820                 | 22×50     | 2.00 | 25×40     | 2.00 | 30×30     | 2.00 |           |      |           |      | 25×40     | 2.00 | 30×35     | 2.00 | 35×30     | 2.00 |
| 1000                |           |      | 25×45     | 2.20 | 30×35     | 2.20 | 35×30     | 2.20 |           |      | 25×50     | 2.20 | 30×35     | 2.20 | 35×30     | 2.20 |
| 1200                |           |      | 25×50     | 2.30 | 30×40     | 2.30 | 35×35     | 2.30 |           |      |           |      | 30×40     | 2.30 | 35×35     | 2.30 |
| 1500                |           |      |           |      | 30×45     | 2.50 | 35×35     | 2.50 |           |      |           |      | 30×50     | 2.50 | 35×40     | 2.50 |
| 1800                |           |      |           |      | 30×50     | 2.70 | 35×40     | 2.70 |           |      |           |      |           |      | 35×45     | 2.70 |
| 2200                |           |      |           |      |           |      | 35×45     | 2.90 |           |      |           |      |           |      | 35×50     | 2.90 |

| Cap.<br>( $\mu F$ ) | 200Vdc    |      |           |      |           |      |           |      | 250Vdc    |      |           |      |           |      |           |      |
|---------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                     | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      | $\phi 22$ |      | $\phi 25$ |      | $\phi 30$ |      | $\phi 35$ |      |
| 180                 |           |      |           |      |           |      |           |      | 22×25     | 0.90 | 25×25     | 0.90 |           |      |           |      |
| 220                 | 22×25     | 1.00 |           |      |           |      |           |      | 22×30     | 1.00 | 25×25     | 1.00 |           |      |           |      |
| 270                 | 22×30     | 1.10 | 25×25     | 1.10 |           |      |           |      | 22×35     | 1.10 | 25×30     | 1.10 | 30×25     | 1.10 |           |      |
| 330                 | 22×30     | 1.20 | 25×25     | 1.20 |           |      |           |      | 22×40     | 1.20 | 25×30     | 1.20 | 30×25     | 1.20 |           |      |
| 390                 | 22×35     | 1.30 | 25×30     | 1.30 | 30×25     | 1.30 |           |      | 22×45     | 1.30 | 25×35     | 1.30 | 30×30     | 1.30 |           |      |
| 470                 | 22×40     | 1.40 | 25×35     | 1.40 | 30×25     | 1.40 |           |      | 22×50     | 1.40 | 25×40     | 1.40 | 30×30     | 1.40 | 35×30     | 1.40 |
| 560                 | 22×45     | 1.50 | 25×35     | 1.50 | 30×30     | 1.50 |           |      |           |      | 25×45     | 1.50 | 30×35     | 1.50 | 35×30     | 1.50 |
| 680                 | 22×50     | 1.70 | 25×40     | 1.70 | 30×30     | 1.70 |           |      |           |      | 25×50     | 1.70 | 30×40     | 1.70 | 35×35     | 1.70 |
| 820                 |           |      | 25×45     | 2.00 | 30×35     | 2.00 | 35×30     | 2.00 |           |      |           |      | 30×45     | 2.00 | 35×35     | 2.00 |
| 1000                |           |      |           |      | 30×40     | 2.20 | 35×35     | 2.20 |           |      |           |      | 30×50     | 2.20 | 35×40     | 2.20 |
| 1200                |           |      |           |      | 30×45     | 2.30 | 35×40     | 2.30 |           |      |           |      |           |      | 35×45     | 2.30 |
| 1500                |           |      |           |      |           |      | 35×50     | 2.50 |           |      |           |      |           |      |           |      |

ケースサイズ Case Size  $\phi D \times L$ (mm) →  
リップル電流 Ripple Current (A.r.m.s./120Hz,105°C) →

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 315Vdc    |      |           |      |           |      |           |      | 350Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 | 22×25     | 0.64 |           |      |           |      |           |      | 22×25     | 0.64 |           |      |           |      |           |      |
| 100                | 22×30     | 0.69 |           |      |           |      |           |      | 22×30     | 0.69 | 25×25     | 0.69 |           |      |           |      |
| 120                | 22×30     | 0.75 | 25×25     | 0.75 |           |      |           |      | 22×35     | 0.75 | 25×30     | 0.75 |           |      |           |      |
| 150                | 22×35     | 0.82 | 25×30     | 0.82 | 30×25     | 0.82 |           |      | 22×40     | 0.82 | 25×30     | 0.82 | 30×25     | 0.82 |           |      |
| 180                | 22×40     | 0.90 | 25×30     | 0.90 | 30×25     | 0.90 |           |      | 22×45     | 0.90 | 25×35     | 0.90 | 30×30     | 0.90 |           |      |
| 220                | 22×45     | 1.00 | 25×35     | 1.00 | 30×30     | 1.00 |           |      | 22×50     | 1.00 | 25×40     | 1.00 | 30×30     | 1.00 |           |      |
| 270                |           |      | 25×40     | 1.10 | 30×35     | 1.10 | 35×30     | 1.10 |           |      | 25×45     | 1.10 | 30×35     | 1.10 | 35×30     | 1.10 |
| 330                |           |      | 25×50     | 1.20 | 30×40     | 1.20 | 35×30     | 1.20 |           |      |           |      | 30×40     | 1.20 | 35×35     | 1.20 |
| 390                |           |      |           |      | 30×40     | 1.30 | 35×35     | 1.30 |           |      |           |      | 30×45     | 1.30 | 35×35     | 1.30 |
| 470                |           |      |           |      | 30×45     | 1.40 | 35×40     | 1.40 |           |      |           |      | 30×50     | 1.40 | 35×40     | 1.40 |
| 560                |           |      |           |      |           |      | 35×45     | 1.50 |           |      |           |      |           |      | 35×50     | 1.50 |
| 680                |           |      |           |      |           |      | 35×50     | 1.70 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      | 450Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 39                 |           |      |           |      |           |      |           |      | 22×25     | 0.37 |           |      |           |      |           |      |
| 47                 |           |      |           |      |           |      |           |      | 22×30     | 0.40 |           |      |           |      |           |      |
| 56                 | 22×25     | 0.51 |           |      |           |      |           |      | 22×35     | 0.47 | 25×25     | 0.47 |           |      |           |      |
| 68                 | 22×30     | 0.56 | 25×25     | 0.56 |           |      |           |      | 22×40     | 0.53 | 25×30     | 0.53 |           |      |           |      |
| 82                 | 22×30     | 0.64 | 25×25     | 0.64 |           |      |           |      | 22×45     | 0.56 | 25×35     | 0.56 | 30×25     | 0.56 |           |      |
| 100                | 22×35     | 0.69 | 25×30     | 0.69 |           |      |           |      | 22×50     | 0.64 | 25×40     | 0.64 | 30×30     | 0.64 |           |      |
| 120                | 22×40     | 0.75 | 25×30     | 0.75 | 30×25     | 0.75 |           |      |           |      | 25×45     | 0.72 | 30×30     | 0.72 |           |      |
| 150                | 22×45     | 0.82 | 25×35     | 0.82 | 30×30     | 0.82 |           |      |           |      | 25×50     | 0.79 | 30×40     | 0.79 | 35×30     | 0.79 |
| 180                | 22×50     | 0.90 | 25×40     | 0.90 | 30×30     | 0.90 | 35×25     | 0.90 |           |      |           |      | 30×45     | 0.87 | 35×35     | 0.87 |
| 220                |           |      | 25×45     | 1.00 | 30×35     | 1.00 | 35×30     | 1.00 |           |      |           |      | 30×50     | 1.00 | 35×40     | 1.00 |
| 270                |           |      |           |      | 30×40     | 1.10 | 35×35     | 1.10 |           |      |           |      |           |      | 35×45     | 1.19 |
| 330                |           |      |           |      | 30×45     | 1.20 | 35×40     | 1.20 |           |      |           |      |           |      | 35×50     | 1.38 |
| 390                |           |      |           |      |           |      | 35×45     | 1.30 |           |      |           |      |           |      |           |      |
| 470                |           |      |           |      |           |      | 35×50     | 1.40 |           |      |           |      |           |      |           |      |

ケースサイズ Case Size  $\phi$  D×L(mm)  $\longrightarrow$   
 リプル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$



## ◆RoHS規制物質への対応／Conforming to RoHS Directive

| 品種 TYPE                                                   | アルミ電解コンデンサ<br>Aluminum Electrolytic Capacitors                                                 |                      |                                     |                            |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------|-------------------------------------|----------------------------|
|                                                           | チップタイプ<br>SMD                                                                                  | リード線タイプ<br>Lead Wire | スナップイン<br>Snap-in                   | ネジ端子タイプ<br>Screw terminal  |
| RoHS 指令<br>RoHS Compliance                                | 対応済/Complied                                                                                   |                      |                                     |                            |
| 鉛<br>Lead                                                 | 含有せず / Not contain                                                                             |                      |                                     |                            |
| 端子材質<br>Terminal material                                 | (~φ10)<br>Fe/Cu/Sn-0.5Bi                                                                       | Fe/Cu/Sn             |                                     | アルミニウム<br>Aluminum         |
|                                                           | (φ12.5~)<br>Fe/Cu/Sn                                                                           |                      |                                     |                            |
| はんだ耐熱性<br>Resistance to Soldering heat                    | 「リフロー許容条件」を参照ください。<br>Please find "Reflow Soldering Condition"                                 |                      | フローはんだ付け260℃<br>260℃ Flow Soldering | はんだ付け対象外<br>Not applicable |
| カドミウム<br>Cadmium                                          | 含有せず / Not contain                                                                             |                      |                                     |                            |
| 水銀<br>Mercury                                             | 含有せず / Not contain                                                                             |                      |                                     |                            |
| 六価クロム<br>Chrome(VI)                                       | 含有せず / Not contain (※1)                                                                        |                      |                                     |                            |
| PBB<br>PBDE                                               | 含有せず / Not contain                                                                             |                      |                                     |                            |
| DEHP, BBP<br>DBP, DIBP                                    | 含有せず / Not contain                                                                             |                      |                                     |                            |
| RoHS 対応品識別<br>Identification for<br>RoHS Compliance Parts | 内装・外装ラベルに RoHS Compliance を表記<br>Add "RoHS Compliance" marking on inner and outer carton label |                      |                                     |                            |

※1: ネジ端子タイプ取付バンド: 三価クロムメッキ/Band of Screw terminal type: Chromium(Ⅲ)

欧州REACH規則への適合について/Regarding compliance to European REACH Regulation

RIP3.8TGD(Technical Guidance Document: 2008/5/26 公開)の内容に基づき、弊社製電子部品は「意図的放出のない成形物」であり、欧州REACH規則第7条1項「登録」の適用外です。

According to the content of RIP3.8TGD(Technical Guidance Document) which is published on 26 May 2008, our electronic components are "articles without any intended release." Therefore they are not applicable for "Registration" for European REACH Regulation Article 7(1).

## カタログ削除品、旧シリーズについてのお願い PROPOSAL ON DELETION OF OLD SERIES FROM CATALOG

当社では、旧シリーズの生産終息を計画的に進めております。旧シリーズに対して代替シリーズをご用意しており、サイズメリット、コストメリットのある製品をご提案いたします。

Production discontinuation of old series at Rubycon is implemented as planned. Technical documents and samples are available upon the request to study alternative products.

### ◆MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS LONG LIFE

| 製品の特長<br>FEATURES      | 旧シリーズ<br>PREVIOUS SERIES | 最終受注期日<br>FILNAL ACCEPTED<br>ORDER DATE | 代替シリーズ<br>SUBSTITUTE SERIES |
|------------------------|--------------------------|-----------------------------------------|-----------------------------|
| GENERAL<br>PURPOSE     | YK                       | 2012.09                                 | PK                          |
|                        | YXA                      | 2012.09                                 | PX                          |
| LOW<br>IMPEDANCE       | ZA                       | 2008.09                                 | YXG                         |
|                        |                          |                                         | YXJ                         |
|                        |                          |                                         | ZL                          |
|                        |                          |                                         | ZLJ                         |
|                        |                          |                                         | ZLG                         |
| LONG LIFE              | BXA                      | 2013.09                                 | BXC                         |
|                        | BXF                      | 2021.03                                 | BXW                         |
| FOR<br>POWER<br>SUPPLY | MXW(VSL)                 | 2002.09                                 | QXW                         |
|                        | AXW                      | 2010.09                                 |                             |
|                        | VXW                      | 2010.09                                 | TXW                         |

### ◆SNAP-IN ALUMINUM ELECTROLYTIC CAPACITORS

| 製品の特長<br>FEATURES                     | 旧シリーズ<br>PREVIOUS SERIES | 最終受注期日<br>FILNAL ACCEPTED<br>ORDER DATE | 代替シリーズ<br>SUBSTITUTE SERIES |
|---------------------------------------|--------------------------|-----------------------------------------|-----------------------------|
| 85℃ STANDARD                          | USP                      | 1999.09                                 | USG                         |
|                                       | USR                      | 2007.09                                 |                             |
| 105℃ STANDARD                         | MXP                      | 1998.09                                 | MXG                         |
|                                       | MXR                      | 2007.09                                 |                             |
| 105℃ LONG LIFE                        | VXP                      | 2008.09                                 | VXG                         |
| 105℃ 20mm HEIGHT                      | MXF                      | 2003.09                                 | KXF                         |
|                                       | AXF                      | 2012.09                                 |                             |
| OVER-VOLTAGE<br>VENTING SPECIFICATION | SXR                      | 2012.09                                 | SXC                         |
|                                       |                          |                                         | SXG                         |
| For Rapid Strobe Flash                | CDF                      | 2021.01                                 | -                           |

# Capacitors Catalog

**CHIP ALUMINUM ELECTROLYTIC CAPACITORS**  
**RADIAL LEAD ALUMINUM ELECTROLYTIC CAPACITORS**  
**SNAP-IN ALUMINUM ELECTROLYTIC CAPACITORS**

**New&Update**



## GXH series

105°C 7000 時間品  
Load Life : 105°C 7000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|--|-------------------------------|---------------------------------------------------|----------|----------|------------------------------|------------------------------------------------------------|---|----|-------------------------|---------------------------------------------|--|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160~500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                 |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160~450</td><td>475, 500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                     |          |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 160~450                                           | 475, 500 | tan δ    | 0.20                         | 0.25                                                       |   |    |                         |                                             |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 475, 500 |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.25     |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 耐久性<br>Endurance                                                         | 105℃中で7000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 7000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="3">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="3">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="3">規格値以下<br/>Not more than the specified value.</td></tr></table> |          |          |  | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |          |          | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |   |    | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160~250</td><td>315~450</td><td>475, 500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>4</td><td>8</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                           |          |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 160~250                                           | 315~450  | 475, 500 | Z(-25℃)/Z(+20℃)              | 4                                                          | 8 | 10 |                         |                                             |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160~250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 315~450  | 475, 500 |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| Z(-25℃)/Z(+20℃)                                                          | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8        | 10       |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | GXH             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60<br>(50)         | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|--------------------|--------------|------|------|------|------|
| 係数<br>Coefficient     | 160~250Vdc<br>0.80 | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
|                       | 315~500Vdc<br>0.80 | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

### ◆副記号／OPTION

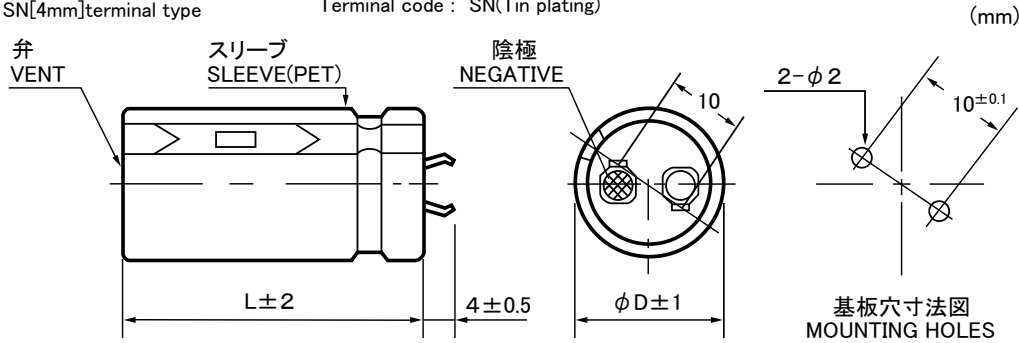
EFC : PET スリーブ、底板なし  
PET Sleeve without plate



◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 160Vdc    |      |           |      |           |      |           |      | 180Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 390                |           |      |           |      |           |      |           |      | 22×25     | 1.46 |           |      |           |      |           |      |
| 470                | 22×25     | 1.52 |           |      |           |      |           |      | 22×30     | 1.72 |           |      |           |      |           |      |
| 560                | 22×30     | 1.81 | 25×25     | 1.67 |           |      |           |      | 22×35     | 1.97 | 25×25     | 1.63 |           |      |           |      |
| 680                | 22×35     | 2.08 | 25×30     | 1.97 |           |      |           |      | 22×40     | 2.23 | 25×30     | 1.94 |           |      |           |      |
| 820                | 22×40     | 2.35 | 25×30     | 2.01 | 30×25     | 1.79 |           |      | 22×45     | 2.50 | 25×35     | 2.23 | 30×25     | 1.73 |           |      |
| 1000               | 22×45     | 2.63 | 25×35     | 2.32 | 30×30     | 2.14 |           |      | 22×50     | 2.76 | 25×40     | 2.52 | 30×30     | 2.06 | 35×25     | 1.73 |
| 1200               | 22×55     | 3.09 | 25×40     | 2.61 | 30×30     | 2.10 | 35×25     | 1.74 | 22×60     | 3.22 | 25×45     | 2.79 | 30×35     | 2.38 | 35×30     | 2.09 |
| 1500               |           |      | 25×50     | 3.15 | 30×35     | 2.42 | 35×30     | 2.09 |           |      | 25×55     | 3.30 | 30×40     | 2.66 | 35×35     | 2.40 |
| 1800               |           |      | 25×55     | 3.42 | 30×40     | 2.71 | 35×35     | 2.42 |           |      |           |      | 30×45     | 2.93 | 35×35     | 2.33 |
| 2200               |           |      |           |      | 30×50     | 3.29 | 35×40     | 2.71 |           |      |           |      | 30×55     | 3.47 | 35×45     | 2.94 |
| 2700               |           |      |           |      | 30×55     | 3.54 | 35×45     | 2.92 |           |      |           |      |           |      | 35×50     | 3.13 |
| 3300               |           |      |           |      |           |      | 35×55     | 3.45 |           |      |           |      |           |      | 35×60     | 3.63 |
| 3900               |           |      |           |      |           |      | 35×60     | 3.68 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 200Vdc    |      |           |      |           |      |           |      | 220Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 270                |           |      |           |      |           |      |           |      | 22×25     | 1.32 |           |      |           |      |           |      |
| 330                | 22×25     | 1.40 |           |      |           |      |           |      | 22×30     | 1.54 |           |      |           |      |           |      |
| 390                | 22×30     | 1.63 |           |      |           |      |           |      | 22×30     | 1.62 | 25×25     | 1.52 |           |      |           |      |
| 470                | 22×30     | 1.70 | 25×25     | 1.59 |           |      |           |      | 22×35     | 1.86 | 25×30     | 1.79 |           |      |           |      |
| 560                | 22×35     | 1.96 | 25×30     | 1.87 |           |      |           |      | 22×40     | 2.10 | 25×30     | 1.84 | 30×25     | 1.67 |           |      |
| 680                | 22×40     | 2.21 | 25×35     | 2.15 | 30×25     | 1.71 |           |      | 22×45     | 2.35 | 25×35     | 2.12 | 30×30     | 1.98 |           |      |
| 820                | 22×50     | 2.64 | 25×35     | 2.19 | 30×30     | 2.04 |           |      | 22×55     | 2.76 | 25×40     | 2.39 | 30×30     | 1.98 | 35×25     | 1.67 |
| 1000               | 22×55     | 2.91 | 25×45     | 2.71 | 30×35     | 2.33 | 35×25     | 1.69 | 22×60     | 3.00 | 25×45     | 2.64 | 30×35     | 2.28 | 35×30     | 2.01 |
| 1200               |           |      | 25×50     | 2.98 | 30×40     | 2.62 | 35×30     | 2.01 |           |      | 25×55     | 3.13 | 30×40     | 2.54 | 35×35     | 2.29 |
| 1500               |           |      | 25×60     | 3.45 | 30×45     | 2.88 | 35×35     | 2.30 |           |      |           |      | 30×50     | 3.06 | 35×40     | 2.56 |
| 1800               |           |      |           |      | 30×50     | 3.13 | 35×40     | 2.58 |           |      |           |      | 30×55     | 3.31 | 35×45     | 2.81 |
| 2200               |           |      |           |      | 30×60     | 3.63 | 35×50     | 3.07 |           |      |           |      |           |      | 35×55     | 3.31 |
| 2700               |           |      |           |      |           |      | 35×60     | 3.55 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 250Vdc    |      |           |      |           |      |           |      | 315Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 150                |           |      |           |      |           |      |           |      | 22×25     | 0.91 |           |      |           |      |           |      |
| 180                |           |      |           |      |           |      |           |      | 22×30     | 1.05 |           |      |           |      |           |      |
| 220                |           |      |           |      |           |      |           |      | 22×30     | 1.12 | 25×25     | 1.11 |           |      |           |      |
| 270                | 22×25     | 1.30 |           |      |           |      |           |      | 22×35     | 1.30 | 25×30     | 1.30 |           |      |           |      |
| 330                | 22×30     | 1.54 | 25×25     | 1.45 |           |      |           |      | 22×45     | 1.57 | 25×35     | 1.49 | 30×25     | 1.32 |           |      |
| 390                | 22×35     | 1.75 | 25×30     | 1.69 |           |      |           |      | 22×50     | 1.75 | 25×40     | 1.68 | 30×30     | 1.53 |           |      |
| 470                | 22×40     | 1.98 | 25×30     | 1.76 |           |      |           |      | 22×55     | 1.92 | 25×45     | 1.88 | 30×35     | 1.75 | 35×25     | 1.42 |
| 560                | 22×45     | 2.22 | 25×35     | 2.02 | 30×25     | 1.62 |           |      |           |      | 25×50     | 2.09 | 30×35     | 1.80 | 35×30     | 1.69 |
| 680                | 22×50     | 2.45 | 25×40     | 2.28 | 30×30     | 1.92 | 35×25     | 1.64 |           |      | 25×60     | 2.41 | 30×45     | 2.20 | 35×35     | 1.94 |
| 820                | 22×60     | 2.85 | 25×45     | 2.54 | 30×35     | 2.20 | 35×30     | 1.97 |           |      |           |      | 30×50     | 2.43 | 35×40     | 2.17 |
| 1000               |           |      | 25×55     | 2.98 | 30×40     | 2.47 | 35×35     | 2.25 |           |      |           |      | 30×60     | 2.81 | 35×45     | 2.40 |
| 1200               |           |      |           |      | 30×45     | 2.72 | 35×40     | 2.52 |           |      |           |      |           |      | 35×55     | 2.80 |
| 1500               |           |      |           |      | 30×60     | 3.42 | 35×45     | 2.73 |           |      |           |      |           |      |           |      |
| 1800               |           |      |           |      |           |      | 35×50     | 2.98 |           |      |           |      |           |      |           |      |
| 2200               |           |      |           |      |           |      | 35×60     | 3.45 |           |      |           |      |           |      |           |      |

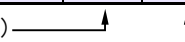
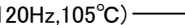
ケースサイズ Case Size  $\phi D \times L$ (mm)  $\rightarrow$   
リプル電流 Ripple Current (A.r.m.s./120Hz, 105°C)  $\rightarrow$

### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 350Vdc    |      |           |      |           |      |           |      | 400Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 120                |           |      |           |      |           |      |           |      | 22×25     | 0.84 |           |      |           |      |           |      |
| 150                | 22×25     | 0.91 |           |      |           |      |           |      | 22×30     | 1.01 | 25×25     | 0.99 |           |      |           |      |
| 180                | 22×30     | 1.06 | 25×25     | 1.04 |           |      |           |      | 22×35     | 1.16 | 25×30     | 1.15 |           |      |           |      |
| 220                | 22×35     | 1.23 | 25×30     | 1.21 |           |      |           |      | 22×40     | 1.32 | 25×30     | 1.22 | 30×25     | 1.20 |           |      |
| 270                | 22×40     | 1.40 | 25×30     | 1.31 | 30×25     | 1.26 |           |      | 22×50     | 1.56 | 25×35     | 1.40 | 30×30     | 1.40 |           |      |
| 330                | 22×45     | 1.58 | 25×35     | 1.50 | 30×30     | 1.47 |           |      | 22×55     | 1.73 | 25×45     | 1.70 | 30×35     | 1.60 | 35×25     | 1.33 |
| 390                | 22×50     | 1.73 | 25×40     | 1.69 | 30×30     | 1.53 | 35×25     | 1.40 |           |      | 25×50     | 1.89 | 30×35     | 1.66 | 35×30     | 1.58 |
| 470                | 22×60     | 2.01 | 25×45     | 1.88 | 30×35     | 1.75 | 35×30     | 1.65 |           |      | 25×55     | 2.07 | 30×40     | 1.87 | 35×35     | 1.80 |
| 560                |           |      | 25×55     | 2.20 | 30×40     | 1.97 | 35×35     | 1.87 |           |      |           |      | 30×50     | 2.22 | 35×40     | 2.02 |
| 680                |           |      |           |      | 30×45     | 2.18 | 35×40     | 2.10 |           |      |           |      | 30×55     | 2.41 | 35×45     | 2.23 |
| 820                |           |      |           |      | 30×60     | 2.68 | 35×45     | 2.33 |           |      |           |      |           |      | 35×55     | 2.62 |
| 1000               |           |      |           |      |           |      | 35×55     | 2.73 |           |      |           |      |           |      |           |      |
| 1200               |           |      |           |      |           |      | 35×60     | 2.93 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 420Vdc    |      |           |      |           |      |           |      | 450Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 |           |      |           |      |           |      |           |      | 22×25     | 0.76 |           |      |           |      |           |      |
| 100                | 22×25     | 0.82 |           |      |           |      |           |      | 22×30     | 0.88 |           |      |           |      |           |      |
| 120                | 22×30     | 0.95 | 25×25     | 0.94 |           |      |           |      | 22×30     | 0.96 | 25×25     | 0.94 |           |      |           |      |
| 150                | 22×35     | 1.10 | 25×30     | 1.10 |           |      |           |      | 22×35     | 1.11 | 25×30     | 1.10 |           |      |           |      |
| 180                | 22×40     | 1.25 | 25×30     | 1.18 | 30×25     | 1.15 |           |      | 22×40     | 1.25 | 25×30     | 1.16 | 30×25     | 1.15 |           |      |
| 220                | 22×45     | 1.42 | 25×35     | 1.35 | 30×30     | 1.34 |           |      | 22×50     | 1.48 | 25×35     | 1.33 | 30×30     | 1.34 | 35×25     | 1.26 |
| 270                | 22×55     | 1.66 | 25×40     | 1.54 | 30×30     | 1.41 | 35×25     | 1.31 | 22×55     | 1.64 | 25×45     | 1.62 | 30×35     | 1.54 | 35×30     | 1.48 |
| 330                |           |      | 25×50     | 1.82 | 30×35     | 1.62 | 35×30     | 1.54 |           |      | 25×50     | 1.82 | 30×40     | 1.74 | 35×30     | 1.53 |
| 390                |           |      | 25×55     | 2.01 | 30×40     | 1.82 | 35×35     | 1.76 |           |      | 25×60     | 2.08 | 30×45     | 1.93 | 35×35     | 1.74 |
| 470                |           |      |           |      | 30×45     | 2.02 | 35×35     | 1.79 |           |      |           |      | 30×50     | 2.14 | 35×40     | 1.96 |
| 560                |           |      |           |      | 30×55     | 2.36 | 35×40     | 2.01 |           |      |           |      | 30×60     | 2.45 | 35×45     | 2.16 |
| 680                |           |      |           |      |           |      | 35×50     | 2.41 |           |      |           |      |           |      | 35×55     | 2.56 |
| 820                |           |      |           |      |           |      | 35×55     | 2.60 |           |      |           |      |           |      | 35×60     | 2.78 |

| Cap.<br>( $\mu$ F) | 475Vdc    |      |           |      |           |      |           |      | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 68                 | 22×25     | 0.67 |           |      |           |      |           |      | 22×25     | 0.67 |           |      |           |      |           |      |
| 82                 | 22×30     | 0.77 |           |      |           |      |           |      | 22×30     | 0.78 | 25×25     | 0.78 |           |      |           |      |
| 100                | 22×30     | 0.83 | 25×25     | 0.84 |           |      |           |      | 22×35     | 0.90 | 25×30     | 0.90 |           |      |           |      |
| 120                | 22×35     | 0.96 | 25×30     | 0.96 |           |      |           |      | 22×40     | 1.02 | 25×30     | 0.97 | 30×25     | 0.96 |           |      |
| 150                | 22×45     | 1.15 | 25×35     | 1.12 | 30×25     | 1.04 |           |      | 22×45     | 1.15 | 25×35     | 1.13 | 30×30     | 1.13 |           |      |
| 180                | 22×50     | 1.30 | 25×40     | 1.26 | 30×30     | 1.20 | 35×25     | 1.15 | 22×55     | 1.35 | 25×40     | 1.27 | 30×30     | 1.20 | 35×25     | 1.15 |
| 220                | 22×55     | 1.42 | 25×45     | 1.43 | 30×35     | 1.37 | 35×30     | 1.34 |           |      | 25×50     | 1.50 | 30×35     | 1.38 | 35×30     | 1.34 |
| 270                |           |      | 25×50     | 1.60 | 30×40     | 1.56 | 35×30     | 1.41 |           |      | 25×55     | 1.67 | 30×40     | 1.55 | 35×35     | 1.54 |
| 330                |           |      | 25×60     | 1.86 | 30×45     | 1.76 | 35×35     | 1.62 |           |      |           |      | 30×50     | 1.84 | 35×40     | 1.74 |
| 390                |           |      |           |      | 30×50     | 1.94 | 35×40     | 1.81 |           |      |           |      | 30×55     | 2.02 | 35×45     | 1.93 |
| 470                |           |      |           |      | 30×60     | 2.23 | 35×45     | 2.01 |           |      |           |      |           |      | 35×50     | 2.13 |
| 560                |           |      |           |      |           |      | 35×55     | 2.34 |           |      |           |      |           |      | 35×60     | 2.44 |

ケースサイズ Case Size  $\phi D \times L(\text{mm})$    
 リプル電流 Ripple Current (A.r.m.s./120Hz, 105°C) 

## GXK series

105°C 7000 時間  
Load Life : 105°C 7000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|--|-------------------------------|---------------------------------------------------|----------|----------|------------------------------|------------------------------------------------------------|---|----|-------------------------|---------------------------------------------|--|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160～500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 (μA) C=静電容量 (μF) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                  |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～450</td><td>475, 500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                      |          |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 160～450                                           | 475, 500 | tan δ    | 0.20                         | 0.25                                                       |   |    |                         |                                             |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 475, 500 |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.25     |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 耐久性<br>Endurance                                                         | 105℃中で7000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 7000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="3">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="3">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="3">規格値以下<br/>Not more than the specified value.</td></tr></table> |          |          |  | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |          |          | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |   |    | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |          |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160～250</td><td>400～450</td><td>475, 500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>4</td><td>8</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                            |          |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 160～250                                           | 400～450  | 475, 500 | Z(-25℃)/Z(+20℃)              | 4                                                          | 8 | 10 |                         |                                             |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160～250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 400～450  | 475, 500 |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |
| Z(-25℃)/Z(+20℃)                                                          | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8        | 10       |  |                               |                                                   |          |          |                              |                                                            |   |    |                         |                                             |  |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | GXK             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60<br>(50)         | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
|-----------------------|--------------------|--------------|------|------|------|------|
| 係数<br>Coefficient     | 160~250Vdc<br>0.80 | 1.00         | 1.15 | 1.20 | 1.30 | 1.50 |
|                       | 400~500Vdc<br>0.80 | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

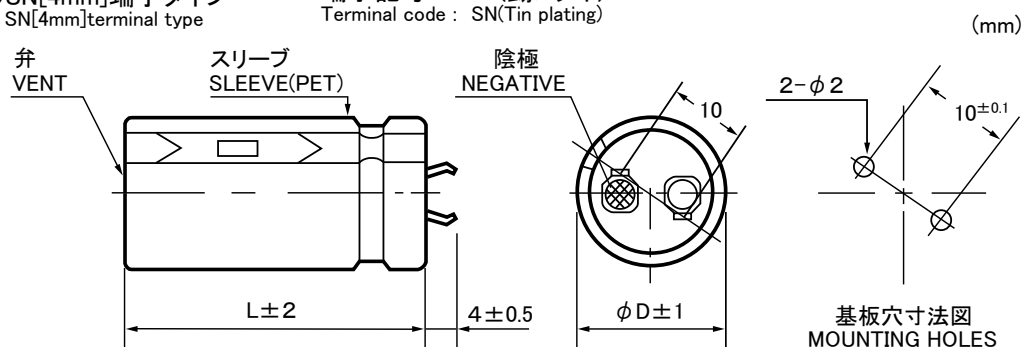
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 160Vdc    |           |           |           |           |           |           |           | 180Vdc    |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 390                |           |           |           |           |           |           |           |           | 22×25     | 1.50      |           |           |           |           |           |           |
| 470                | 22×25     | 1.23      |           |           |           |           |           |           | 22×30     | 1.75      |           |           |           |           |           |           |
| 560                | 22×30     | 1.85      |           |           |           |           |           |           | 22×30     | 1.84      | 25×25     | 1.69      |           |           |           |           |
| 680                | 22×30     | 1.92      | 25×25     | 1.76      |           |           |           |           | 22×35     | 2.12      | 25×30     | 2.00      |           |           |           |           |
| 820                | 22×35     | 2.22      | 25×30     | 2.08      |           |           |           |           | 22×40     | 2.40      | 25×35     | 2.30      | 30×25     | 1.84      |           |           |
| 1000               | 22×40     | 2.50      | 25×35     | 2.40      | 30×25     | 1.88      |           |           | 22×45     | 2.66      | 25×40     | 2.60      | 30×30     | 2.19      |           |           |
| 1200               | 22×50     | 2.99      | 25×40     | 2.70      | 30×30     | 2.24      | 35×25     | 1.89      | 22×55     | 3.15      | 25×45     | 2.89      | 30×35     | 2.52      | 35×25     | 1.82      |
| 1500               | 22×55     | 3.29      | 25×45     | 3.01      | 30×35     | 2.58      | 35×30     | 2.27      |           |           | 25×50     | 3.18      | 30×40     | 2.82      | 35×30     | 2.16      |
| 1800               |           |           | 25×55     | 3.55      | 30×40     | 2.89      | 35×30     | 2.19      |           |           | 25×60     | 3.70      | 30×45     | 3.11      | 35×35     | 2.49      |
| 2200               |           |           | 25×60     | 3.83      | 30×45     | 3.18      | 35×35     | 2.52      |           |           |           |           | 30×50     | 3.39      | 35×40     | 2.79      |
| 2700               |           |           |           |           | 30×55     | 3.76      | 35×40     | 2.83      |           |           |           |           | 30×60     | 3.92      | 35×45     | 3.07      |
| 3300               |           |           |           |           |           |           | 35×50     | 3.39      |           |           |           |           |           |           | 35×55     | 3.60      |
| 3900               |           |           |           |           |           |           | 35×60     | 3.95      |           |           |           |           |           |           |           |           |

| Cap.<br>( $\mu$ F) | 200Vdc    |           |           |           |           |           |           |           | 220Vdc    |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 330                |           |           |           |           |           |           |           |           | 22×25     | 1.43      |           |           |           |           |           |           |
| 390                | 22×25     | 1.50      |           |           |           |           |           |           | 22×30     | 1.66      |           |           |           |           |           |           |
| 470                | 22×30     | 1.76      |           |           |           |           |           |           | 22×30     | 1.74      | 25×25     | 1.62      |           |           |           |           |
| 560                | 22×35     | 2.00      | 25×25     | 1.67      |           |           |           |           | 22×35     | 2.00      | 25×30     | 1.90      |           |           |           |           |
| 680                | 22×35     | 2.08      | 25×30     | 1.99      |           |           |           |           | 22×40     | 2.27      | 25×35     | 2.18      | 30×25     | 1.77      |           |           |
| 820                | 22×45     | 2.55      | 25×35     | 2.28      | 30×25     | 1.81      |           |           | 22×45     | 2.51      | 25×40     | 2.46      | 30×30     | 2.11      | 35×25     | 1.81      |
| 1000               | 22×50     | 2.85      | 25×40     | 2.58      | 30×30     | 2.16      | 35×25     | 1.82      | 22×55     | 2.98      | 25×45     | 2.76      | 30×35     | 2.42      | 35×30     | 2.17      |
| 1200               | 22×60     | 3.28      | 25×45     | 2.86      | 30×35     | 2.48      | 35×30     | 2.20      |           |           | 25×50     | 3.03      | 30×35     | 2.42      | 35×30     | 2.12      |
| 1500               |           |           | 25×55     | 3.37      | 30×40     | 2.77      | 35×35     | 2.51      |           |           | 25×60     | 3.51      | 30×45     | 2.99      | 35×35     | 2.42      |
| 1800               |           |           |           |           | 30×45     | 3.06      | 35×40     | 2.80      |           |           |           |           | 30×50     | 3.26      | 35×40     | 2.72      |
| 2200               |           |           |           |           | 30×55     | 3.59      | 35×45     | 3.06      |           |           |           |           | 30×60     | 3.78      | 35×50     | 3.30      |
| 2700               |           |           |           |           |           |           | 35×55     | 3.54      |           |           |           |           |           |           | 35×60     | 3.79      |

| Cap.<br>( $\mu$ F) | 250Vdc    |           |           |           |           |           |           |           | 400Vdc    |           |           |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                    | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 | $\phi$ 22 | $\phi$ 25 | $\phi$ 30 | $\phi$ 35 |
| 120                |           |           |           |           |           |           |           |           | 22×25     | 0.86      |           |           |           |           |           |           |
| 150                |           |           |           |           |           |           |           |           | 22×30     | 1.01      |           |           |           |           |           |           |
| 180                |           |           |           |           |           |           |           |           | 22×30     | 1.08      | 25×25     | 1.05      |           |           |           |           |
| 220                |           |           |           |           |           |           |           |           | 22×35     | 1.25      | 25×30     | 1.23      |           |           |           |           |
| 270                | 22×25     | 1.34      |           |           |           |           |           |           | 22×40     | 1.40      | 25×35     | 1.41      | 30×25     | 1.27      |           |           |
| 330                | 22×30     | 1.57      |           |           |           |           |           |           | 22×50     | 1.68      | 25×40     | 1.61      | 30×30     | 1.48      | 35×25     | 1.37      |
| 390                | 22×30     | 1.65      | 25×25     | 1.55      |           |           |           |           | 22×55     | 1.85      | 25×45     | 1.79      | 30×35     | 1.69      | 35×30     | 1.63      |
| 470                | 22×35     | 1.90      | 25×30     | 1.81      |           |           |           |           |           |           | 25×50     | 1.98      | 30×40     | 1.90      | 35×30     | 1.64      |
| 560                | 22×40     | 2.14      | 25×35     | 2.07      | 30×25     | 1.72      |           |           |           |           | 25×60     | 2.29      | 30×45     | 2.11      | 35×35     | 1.87      |
| 680                | 22×45     | 2.39      | 25×35     | 2.14      | 30×30     | 2.04      |           |           |           |           |           |           | 30×50     | 2.33      | 35×40     | 2.11      |
| 820                | 22×55     | 2.81      | 25×45     | 2.62      | 30×30     | 2.05      | 35×25     | 1.74      |           |           |           |           | 30×60     | 2.68      | 35×50     | 2.51      |
| 1000               | 22×60     | 3.05      | 25×50     | 2.90      | 30×35     | 2.35      | 35×30     | 2.08      |           |           |           |           |           |           | 35×55     | 2.72      |
| 1200               |           |           | 25×60     | 3.35      | 30×40     | 2.63      | 35×35     | 2.38      |           |           |           |           |           |           |           |           |
| 1500               |           |           |           |           | 30×50     | 3.16      | 35×40     | 2.64      |           |           |           |           |           |           |           |           |
| 1800               |           |           |           |           | 30×60     | 3.64      | 35×50     | 3.21      |           |           |           |           |           |           |           |           |
| 2200               |           |           |           |           |           |           | 35×55     | 3.43      |           |           |           |           |           |           |           |           |



### ◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 420Vdc    |      |           |      |           |      |           |      | 450Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100                |           |      |           |      |           |      |           |      | 22×25     | 0.82 |           |      |           |      |           |      |
| 120                | 22×25     | 0.88 |           |      |           |      |           |      | 22×30     | 0.95 |           |      |           |      |           |      |
| 150                | 22×30     | 1.04 | 25×25     | 1.01 |           |      |           |      | 22×30     | 1.04 | 25×25     | 1.01 |           |      |           |      |
| 180                | 22×35     | 1.18 | 25×30     | 1.17 |           |      |           |      | 22×35     | 1.19 | 25×30     | 1.17 |           |      |           |      |
| 220                | 22×40     | 1.35 | 25×30     | 1.24 | 30×25     | 1.22 |           |      | 22×40     | 1.35 | 25×35     | 1.35 | 30×25     | 1.22 |           |      |
| 270                | 22×45     | 1.54 | 25×35     | 1.43 | 30×30     | 1.43 |           |      | 22×50     | 1.60 | 25×40     | 1.54 | 30×30     | 1.43 | 35×25     | 1.33 |
| 330                | 22×55     | 1.79 | 25×40     | 1.61 | 30×30     | 1.49 | 35×25     | 1.37 | 22×55     | 1.78 | 25×45     | 1.74 | 30×35     | 1.64 | 35×30     | 1.56 |
| 390                | 22×60     | 1.96 | 25×50     | 1.92 | 30×35     | 1.71 | 35×30     | 1.61 |           |      | 25×50     | 1.91 | 30×40     | 1.84 | 35×30     | 1.60 |
| 470                |           |      | 25×55     | 2.12 | 30×40     | 1.93 | 35×35     | 1.85 |           |      | 25×60     | 2.21 | 30×45     | 2.05 | 35×35     | 1.83 |
| 560                |           |      |           |      | 30×45     | 2.13 | 35×35     | 1.87 |           |      |           |      | 30×50     | 2.26 | 35×40     | 2.05 |
| 680                |           |      |           |      | 30×55     | 2.50 | 35×45     | 2.30 |           |      |           |      | 30×60     | 2.61 | 35×45     | 2.26 |
| 820                |           |      |           |      |           |      | 35×50     | 2.51 |           |      |           |      |           |      | 35×55     | 2.65 |
| 1000               |           |      |           |      |           |      | 35×60     | 2.89 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 475Vdc    |      |           |      |           |      |           |      | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82                 | 22×25     | 0.72 |           |      |           |      |           |      | 22×25     | 0.72 |           |      |           |      |           |      |
| 100                | 22×30     | 0.83 |           |      |           |      |           |      | 22×30     | 0.85 | 25×25     | 0.83 |           |      |           |      |
| 120                | 22×30     | 0.90 | 25×25     | 0.89 |           |      |           |      | 22×35     | 0.97 | 25×30     | 0.96 |           |      |           |      |
| 150                | 22×35     | 1.03 | 25×30     | 1.04 |           |      |           |      | 22×40     | 1.11 | 25×35     | 1.11 | 30×25     | 1.04 |           |      |
| 180                | 22×40     | 1.17 | 25×35     | 1.19 | 30×25     | 1.09 |           |      | 22×45     | 1.25 | 25×35     | 1.18 | 30×30     | 1.20 |           |      |
| 220                | 22×50     | 1.40 | 25×40     | 1.35 | 30×30     | 1.27 | 35×25     | 1.22 | 22×55     | 1.46 | 25×45     | 1.42 | 30×35     | 1.37 | 35×25     | 1.21 |
| 270                | 22×60     | 1.62 | 25×45     | 1.52 | 30×35     | 1.46 | 35×30     | 1.42 |           |      | 25×50     | 1.61 | 30×35     | 1.45 | 35×30     | 1.42 |
| 330                |           |      | 25×55     | 1.78 | 30×40     | 1.66 | 35×30     | 1.47 |           |      | 25×60     | 1.86 | 30×45     | 1.76 | 35×35     | 1.63 |
| 390                |           |      | 25×60     | 1.94 | 30×45     | 1.85 | 35×35     | 1.69 |           |      |           |      | 30×50     | 1.94 | 35×40     | 1.82 |
| 470                |           |      |           |      | 30×50     | 2.03 | 35×40     | 1.90 |           |      |           |      | 30×55     | 2.13 | 35×45     | 2.03 |
| 560                |           |      |           |      | 30×60     | 2.35 | 35×45     | 2.10 |           |      |           |      |           |      | 35×50     | 2.23 |
| 680                |           |      |           |      |           |      | 35×55     | 2.46 |           |      |           |      |           |      | 35×60     | 2.57 |

ケースサイズ Case Size  $\phi$  D×L(mm)   
 リプル電流 Ripple Current (A.r.m.s./120Hz,105°C) 

## NXH series

105°C 10000 時間  
Load Life : 105°C 10000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--|-------------------------------|---------------------------------------------------|-------------|------------------------------|------------------------------------------------------------|------|-------------------------|---------------------------------------------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流 ( μ A) C=静電容量 ( μ F) V=定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 損失角の正接 (tan δ )<br>Dissipation Factor (MAX)                              | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～<br/>450</td><td>475,<br/>500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                               |             |  | 定格電圧 (Vdc)<br>Rated Voltage   | 400～<br>450                                       | 475,<br>500 | tan δ                        | 0.20                                                       | 0.25 |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～<br>450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 475,<br>500 |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.25        |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 耐久性<br>Endurance                                                         | 105℃中で10000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 10000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td></tr></table> |             |  | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |             | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400～<br/>450</td><td>475,<br/>500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>8</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                               |             |  | 定格電圧 (Vdc)<br>Rated Voltage   | 400～<br>450                                       | 475,<br>500 | Z(-25℃)/Z(+20℃)              | 8                                                          | 10   |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400～<br>450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 475,<br>500 |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |
| Z(-25℃)/Z(+20℃)                                                          | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10          |  |                               |                                                   |             |                              |                                                            |      |                         |                                             |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | NXH             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

|                       |            |              |      |      |      |      |
|-----------------------|------------|--------------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数<br>Coefficient     | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

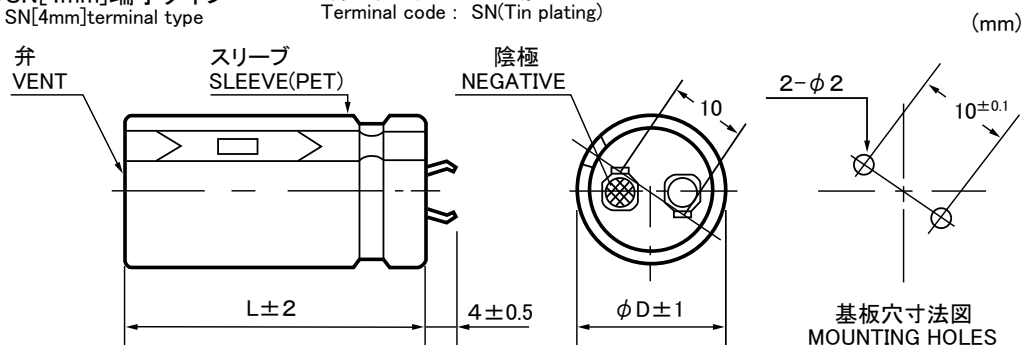
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      | 420Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 150                | 22×35     | 1.06 |           |      |           |      |           |      | 22×35     | 1.10 |           |      |           |      |           |      |
| 180                | 22×40     | 1.21 | 25×30     | 1.13 |           |      |           |      | 22×40     | 1.24 | 25×35     | 1.23 | 30×25     | 1.14 |           |      |
| 220                | 22×45     | 1.37 | 25×35     | 1.30 |           |      |           |      | 22×50     | 1.46 | 25×40     | 1.41 | 30×30     | 1.33 | 35×25     | 1.26 |
| 270                | 22×50     | 1.52 | 25×40     | 1.47 | 30×30     | 1.39 | 35×25     | 1.30 | 22×55     | 1.62 | 25×45     | 1.59 | 30×35     | 1.53 | 35×30     | 1.48 |
| 330                | 22×60     | 1.77 | 25×50     | 1.75 | 30×35     | 1.59 | 35×30     | 1.53 |           |      | 25×50     | 1.76 | 30×40     | 1.73 | 35×30     | 1.54 |
| 390                |           |      | 25×55     | 1.93 | 30×40     | 1.79 | 35×35     | 1.74 |           |      | 25×60     | 2.04 | 30×45     | 1.92 | 35×35     | 1.76 |
| 470                |           |      |           |      | 30×45     | 1.98 | 35×35     | 1.78 |           |      |           |      | 30×50     | 2.12 | 35×40     | 1.97 |
| 560                |           |      |           |      | 30×55     | 2.31 | 35×45     | 2.17 |           |      |           |      | 30×60     | 2.45 | 35×45     | 2.17 |
| 680                |           |      |           |      |           |      | 35×50     | 2.38 |           |      |           |      |           |      | 35×55     | 2.54 |
| 820                |           |      |           |      |           |      | 35×60     | 2.75 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      | 475Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 120                | 22×35     | 1.00 |           |      |           |      |           |      | 22×40     | 1.00 | 25×30     | 0.96 |           |      |           |      |
| 150                | 22×40     | 1.16 | 25×30     | 1.08 | 30×25     | 1.08 |           |      | 22×45     | 1.15 | 25×35     | 1.11 |           |      |           |      |
| 180                | 22×45     | 1.30 | 25×35     | 1.24 | 30×30     | 1.25 |           |      | 22×50     | 1.28 | 25×40     | 1.25 | 30×30     | 1.19 | 35×25     | 1.15 |
| 220                | 22×50     | 1.44 | 25×40     | 1.40 | 30×30     | 1.33 | 35×25     | 1.26 | 22×60     | 1.49 | 25×50     | 1.47 | 30×35     | 1.37 | 35×30     | 1.34 |
| 270                | 22×60     | 1.68 | 25×50     | 1.67 | 30×35     | 1.53 | 35×30     | 1.47 |           |      | 25×55     | 1.64 | 30×40     | 1.55 | 35×35     | 1.53 |
| 330                |           |      | 25×55     | 1.83 | 30×40     | 1.72 | 35×35     | 1.69 |           |      |           |      | 30×50     | 1.83 | 35×40     | 1.74 |
| 390                |           |      |           |      | 30×45     | 1.90 | 35×40     | 1.89 |           |      |           |      | 30×55     | 2.01 | 35×45     | 1.93 |
| 470                |           |      |           |      | 30×55     | 2.23 | 35×45     | 2.10 |           |      |           |      |           |      | 35×50     | 2.13 |
| 560                |           |      |           |      |           |      | 35×50     | 2.30 |           |      |           |      |           |      | 35×60     | 2.44 |
| 680                |           |      |           |      |           |      | 35×60     | 2.65 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100                | 22×40     | 0.94 | 25×30     | 0.90 |           |      |           |      |
| 120                | 22×45     | 1.06 | 25×35     | 1.02 | 30×25     | 0.95 |           |      |
| 150                | 22×50     | 1.20 | 25×40     | 1.18 | 30×30     | 1.13 | 35×25     | 1.09 |
| 180                | 22×60     | 1.40 | 25×45     | 1.30 | 30×35     | 1.28 | 35×30     | 1.26 |
| 220                |           |      | 25×55     | 1.54 | 30×40     | 1.46 | 35×35     | 1.45 |
| 270                |           |      |           |      | 30×45     | 1.62 | 35×40     | 1.64 |
| 330                |           |      |           |      | 30×55     | 1.91 | 35×45     | 1.84 |
| 390                |           |      |           |      |           |      | 35×50     | 2.03 |
| 470                |           |      |           |      |           |      | 35×55     | 2.20 |

ケースサイズ Case Size  $\phi$  D × L(mm)  $\longrightarrow$   
リップル電流 Ripple Current (A.r.m.s./120Hz, 105°C)  $\longrightarrow$

## NXK series

105°C 10000 時間  
Load Life : 105°C 10000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--|-------------------------------|---------------------------------------------------|----------|------------------------------|------------------------------------------------------------|------|-------------------------|---------------------------------------------|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25~+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400~500Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                       |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td><td>475, 500</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                        |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | 475, 500 | tan δ                        | 0.20                                                       | 0.25 |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 475, 500 |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.25     |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 耐久性<br>Endurance                                                         | 105℃中で10000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 10000 hours at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="2">初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="2">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="2">規格値以下<br/>Not more than the specified value.</td></tr></table> |          |  | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. |          | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td><td>475, 500</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>8</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                        |          |  | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | 475, 500 | Z(-25℃)/Z(+20℃)              | 8                                                          | 10   |                         |                                             |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 475, 500 |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |
| Z(-25℃)/Z(+20℃)                                                          | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10       |  |                               |                                                   |          |                              |                                                            |      |                         |                                             |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | NXK             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

|                       |            |              |      |      |      |      |
|-----------------------|------------|--------------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数<br>Coefficient     | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

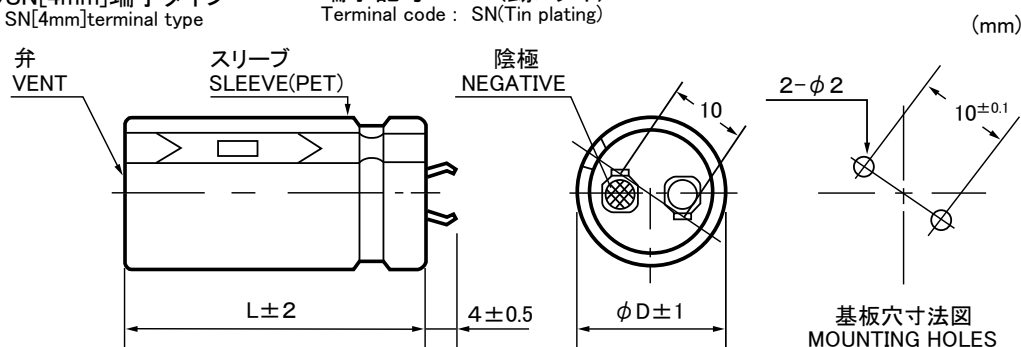
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.<br>( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      | 420Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 180                | 22×35     | 1.13 |           |      |           |      |           |      | 22×35     | 1.15 |           |      |           |      |           |      |
| 220                | 22×40     | 1.29 | 25×35     | 1.29 | 30×25     | 1.19 |           |      | 22×45     | 1.39 | 25×35     | 1.32 | 30×25     | 1.20 |           |      |
| 270                | 22×45     | 1.44 | 25×40     | 1.47 | 30×30     | 1.38 | 35×25     | 1.31 | 22×50     | 1.57 | 25×40     | 1.51 | 30×30     | 1.41 | 35×25     | 1.33 |
| 330                | 22×55     | 1.71 | 25×45     | 1.66 | 30×35     | 1.59 | 35×30     | 1.53 | 22×60     | 1.82 | 25×45     | 1.68 | 30×35     | 1.62 | 35×30     | 1.56 |
| 390                |           |      | 25×50     | 1.84 | 30×35     | 1.65 | 35×30     | 1.59 |           |      | 25×55     | 1.96 | 30×40     | 1.82 | 35×30     | 1.59 |
| 470                |           |      | 25×60     | 2.11 | 30×40     | 1.85 | 35×35     | 1.81 |           |      | 25×60     | 2.14 | 30×45     | 2.03 | 35×35     | 1.83 |
| 560                |           |      |           |      | 30×50     | 2.20 | 35×40     | 2.03 |           |      |           |      | 30×50     | 2.21 | 35×40     | 2.04 |
| 680                |           |      |           |      | 30×55     | 2.40 | 35×45     | 2.26 |           |      |           |      | 30×60     | 2.57 | 35×50     | 2.44 |
| 820                |           |      |           |      |           |      | 35×55     | 2.63 |           |      |           |      |           |      | 35×55     | 2.64 |

| Cap.<br>( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      | 475Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 150                |           |      |           |      |           |      |           |      | 22×40     | 1.09 |           |      |           |      |           |      |
| 180                | 22×40     | 1.24 |           |      |           |      |           |      | 22×45     | 1.22 | 25×35     | 1.16 |           |      |           |      |
| 220                | 22×45     | 1.39 | 25×35     | 1.30 |           |      |           |      | 22×55     | 1.43 | 25×40     | 1.31 | 30×30     | 1.24 | 35×25     | 1.21 |
| 270                | 22×55     | 1.63 | 25×45     | 1.59 | 30×30     | 1.39 | 35×25     | 1.31 |           |      | 25×50     | 1.58 | 30×35     | 1.43 | 35×30     | 1.42 |
| 330                |           |      | 25×50     | 1.78 | 30×35     | 1.60 | 35×30     | 1.55 |           |      | 25×60     | 1.82 | 30×45     | 1.73 | 35×35     | 1.62 |
| 390                |           |      | 25×60     | 2.04 | 30×40     | 1.80 | 35×35     | 1.76 |           |      |           |      | 30×50     | 1.92 | 35×40     | 1.81 |
| 470                |           |      |           |      | 30×50     | 2.14 | 35×40     | 1.98 |           |      |           |      | 30×55     | 2.10 | 35×45     | 2.02 |
| 560                |           |      |           |      | 30×55     | 2.33 | 35×45     | 2.20 |           |      |           |      |           |      | 35×50     | 2.23 |
| 680                |           |      |           |      |           |      | 35×55     | 2.56 |           |      |           |      |           |      | 35×60     | 2.56 |
| 820                |           |      |           |      |           |      | 35×60     | 2.76 |           |      |           |      |           |      |           |      |

| Cap.<br>( $\mu$ F) | 500Vdc    |      |           |      |           |      |           |      |
|--------------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                    | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 120                | 22×35     | 0.94 |           |      |           |      |           |      |
| 150                | 22×45     | 1.15 | 25×35     | 1.10 | 30×25     | 1.01 |           |      |
| 180                | 22×50     | 1.29 | 25×40     | 1.25 | 30×30     | 1.19 | 35×25     | 1.15 |
| 220                | 22×60     | 1.49 | 25×45     | 1.40 | 30×35     | 1.36 | 35×30     | 1.34 |
| 270                |           |      | 25×55     | 1.65 | 30×40     | 1.55 | 35×30     | 1.39 |
| 330                |           |      |           |      | 30×45     | 1.73 | 35×35     | 1.60 |
| 390                |           |      |           |      | 30×55     | 2.01 | 35×40     | 1.80 |
| 470                |           |      |           |      | 30×60     | 2.19 | 35×50     | 2.13 |
| 560                |           |      |           |      |           |      | 35×55     | 2.34 |

ケースサイズ Case Size  $\phi$  D × L(mm)  $\longrightarrow$   
リップル電流 Ripple Current (A.r.m.s./120Hz,105°C)  $\longrightarrow$

## THH series

125°C 2000 時間品  
Load Life : 125°C 2000 hours



RoHS  
compliance

### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                   |                                                 |                                                            |                         |                                             |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25~+125°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                                                 |                                                            |                         |                                             |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400~450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                                                 |                                                            |                         |                                             |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                   |                                                 |                                                            |                         |                                             |
| 漏れ電流<br>Leakage Current (MAX)                                            | $I=5\sqrt{CV}$ (定格電圧印加5分後)<br>$I=5\sqrt{CV}$ (After 5 minutes application of rated voltage)<br>$I$ =漏れ電流 (μA) $C$ =静電容量 (μF) $V$ =定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                                                 |                                                            |                         |                                             |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table border="1"> <tr> <td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td></tr> <tr> <td>tan δ</td><td>0.25</td></tr> </table> (20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | tan δ                                           | 0.25                                                       |                         |                                             |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                   |                                                 |                                                            |                         |                                             |
| tan δ                                                                    | 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                                                 |                                                            |                         |                                             |
| 耐久性<br>Endurance                                                         | 125°C中で2000時間定格電圧(リプル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 2000 hours at 125°C, the capacitors shall meet the following requirements. <table border="1"> <tr> <td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr> <tr> <td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr> <tr> <td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr> </table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor                    | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                                                 |                                                            |                         |                                             |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                                                 |                                                            |                         |                                             |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                                                   |                                                 |                                                            |                         |                                             |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table border="1"> <tr> <td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td></tr> <tr> <td><math>Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C})</math></td><td>10</td></tr> </table> (120Hz)                                                                                                                                                                                                                                                                                                                                                     | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | $Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C})$ | 10                                                         |                         |                                             |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |                                                   |                                                 |                                                            |                         |                                             |
| $Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C})$                          | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |                                                   |                                                 |                                                            |                         |                                             |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | THH             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リプル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

|                       |            |              |      |      |      |      |
|-----------------------|------------|--------------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数<br>Coefficient     | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

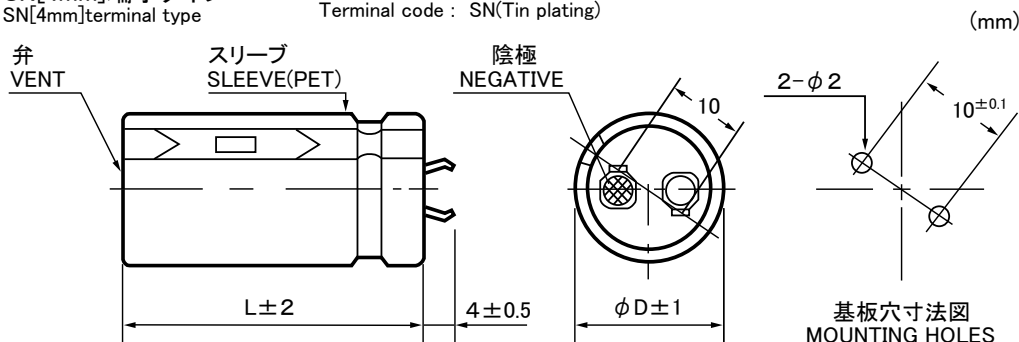
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82             | 22×25     | 0.79 |           |      |           |      |           |      |
| 100            | 22×30     | 0.91 |           |      |           |      |           |      |
| 120            | 22×30     | 0.98 | 25×25     | 0.96 |           |      |           |      |
| 150            | 22×35     | 1.14 | 25×30     | 1.12 |           |      |           |      |
| 180            | 22×40     | 1.28 | 25×35     | 1.28 |           |      |           |      |
| 220            | 22×50     | 1.50 | 25×40     | 1.45 | 30×30     | 1.35 |           |      |
| 270            | 22×55     | 1.69 | 25×45     | 1.64 | 30×35     | 1.55 |           |      |
| 330            |           |      | 25×55     | 1.90 | 30×40     | 1.75 |           |      |
| 390            |           |      | 25×60     | 2.09 | 30×45     | 1.94 | 35×35     | 1.75 |
| 470            |           |      |           |      | 30×50     | 2.14 | 35×40     | 1.96 |
| 560            |           |      |           |      | 30×60     | 2.45 | 35×45     | 2.16 |
| 680            |           |      |           |      |           |      | 35×55     | 2.52 |
| 820            |           |      |           |      |           |      | 35×60     | 2.72 |

| Cap.( $\mu$ F) | 420Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82             | 22×25     | 0.79 |           |      |           |      |           |      |
| 100            | 22×30     | 0.91 |           |      |           |      |           |      |
| 120            | 22×30     | 0.99 | 25×25     | 0.96 |           |      |           |      |
| 150            | 22×35     | 1.14 | 25×30     | 1.12 |           |      |           |      |
| 180            | 22×45     | 1.34 | 25×35     | 1.28 |           |      |           |      |
| 220            | 22×50     | 1.51 | 25×40     | 1.45 | 30×30     | 1.35 |           |      |
| 270            | 22×60     | 1.74 | 25×45     | 1.64 | 30×35     | 1.54 |           |      |
| 330            |           |      | 25×55     | 1.90 | 30×40     | 1.74 |           |      |
| 390            |           |      | 25×60     | 2.09 | 30×45     | 1.93 | 35×35     | 1.74 |
| 470            |           |      |           |      | 30×55     | 2.24 | 35×40     | 1.95 |
| 560            |           |      |           |      | 30×60     | 2.44 | 35×45     | 2.15 |
| 680            |           |      |           |      |           |      | 35×55     | 2.51 |

| Cap.( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 82             | 22×25     | 0.77 |           |      |           |      |           |      |
| 100            | 22×30     | 0.89 |           |      |           |      |           |      |
| 120            | 22×30     | 0.94 | 25×25     | 0.93 |           |      |           |      |
| 150            | 22×40     | 1.17 | 25×30     | 1.10 | 30×25     | 1.06 |           |      |
| 180            | 22×45     | 1.32 | 25×35     | 1.25 | 30×30     | 1.24 |           |      |
| 220            | 22×50     | 1.49 | 25×40     | 1.42 | 30×30     | 1.31 | 35×25     | 1.23 |
| 270            | 22×60     | 1.73 | 25×45     | 1.59 | 30×35     | 1.50 | 35×30     | 1.45 |
| 330            |           |      | 25×55     | 1.88 | 30×40     | 1.70 | 35×35     | 1.65 |
| 390            |           |      |           |      | 30×45     | 1.88 | 35×35     | 1.69 |
| 470            |           |      |           |      | 30×55     | 2.21 | 35×40     | 1.90 |
| 560            |           |      |           |      | 30×60     | 2.39 | 35×50     | 2.26 |
| 680            |           |      |           |      |           |      | 35×55     | 2.47 |

ケースサイズ Case Size  $\phi$  D × L(mm) →  
リプル電流 Ripple Current (A.r.m.s./120Hz,125°C) →



## THK series

125°C 2000 時間品  
Load Life : 125°C 2000 hours



RoHS  
compliance

### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                                                 |                                                            |                         |                                             |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25~+125°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                                                 |                                                            |                         |                                             |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400~450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                                                 |                                                            |                         |                                             |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                                                 |                                                            |                         |                                             |
| 漏れ電流<br>Leakage Current (MAX)                                            | $I=5\sqrt{CV}$ (定格電圧印加5分後)<br>$I=5\sqrt{CV}$ (After 5 minutes application of rated voltage)<br>$I$ =漏れ電流 (μA) $C$ =静電容量 (μF) $V$ =定格電圧 (Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                         |                               |                                                   |                                                 |                                                            |                         |                                             |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | <table border="1"> <tr> <td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td></tr> <tr> <td>tan δ</td><td>0.25</td></tr> </table> (20°C, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                   | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | tan δ                                           | 0.25                                                       |                         |                                             |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                                                 |                                                            |                         |                                             |
| tan δ                                                                    | 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |                                                   |                                                 |                                                            |                         |                                             |
| 耐久性<br>Endurance                                                         | 125°C中で2000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 2000 hours at 125°C, the capacitors shall meet the following requirements. <table border="1"> <tr> <td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr> <tr> <td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr> <tr> <td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr> </table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor                    | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                                                 |                                                            |                         |                                             |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |                                                   |                                                 |                                                            |                         |                                             |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |                                                   |                                                 |                                                            |                         |                                             |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table border="1"> <tr> <td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400~450</td></tr> <tr> <td><math>Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C})</math></td><td>10</td></tr> </table> (120Hz)                                                                                                                                                                                                                                                                                                                                                      | 定格電圧 (Vdc)<br>Rated Voltage   | 400~450                                           | $Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C})$ | 10                                                         |                         |                                             |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400~450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                   |                                                 |                                                            |                         |                                             |
| $Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C})$                          | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                   |                                                 |                                                            |                         |                                             |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                       |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-----------------------|---------------------|
| □□□                   | THK             | □□□□□               | M                                | □□□           | SN                    | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | 端子記号<br>Terminal Code | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／

#### MULTIPLIER FOR RIPPLE CURRENT

|                       |            |              |      |      |      |      |
|-----------------------|------------|--------------|------|------|------|------|
| 周波数 (Hz)<br>Frequency | 60<br>(50) | 120<br>(100) | 300  | 500  | 1k   | 10k≤ |
| 係数<br>Coefficient     | 0.80       | 1.00         | 1.15 | 1.20 | 1.25 | 1.40 |

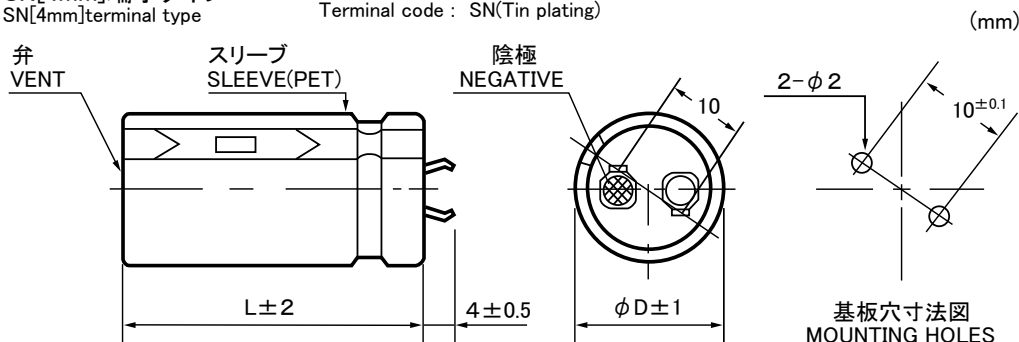
### ◆副記号／OPTION

EFC : PET スリーブ、底板なし  
PET Sleeve without plate

◆寸法図／DIMENSIONS

●SN[4mm]端子タイプ  
SN[4mm]terminal type

端子記号 : SN(錫メッキ)  
Terminal code : SN(Tin plating)



◆標準品一覧表／STANDARD SIZE

| Cap.( $\mu$ F) | 400Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100            | 22×25     | 0.84 |           |      |           |      |           |      |
| 120            | 22×30     | 0.97 |           |      |           |      |           |      |
| 150            | 22×30     | 1.06 | 25×25     | 1.03 |           |      |           |      |
| 180            | 22×35     | 1.22 | 25×30     | 1.19 |           |      |           |      |
| 220            | 22×40     | 1.38 | 25×35     | 1.37 | 30×25     | 1.22 |           |      |
| 270            | 22×50     | 1.64 | 25×40     | 1.56 | 30×30     | 1.43 | 35×25     | 1.33 |
| 330            | 22×55     | 1.81 | 25×45     | 1.76 | 30×35     | 1.64 | 35×30     | 1.56 |
| 390            |           |      | 25×50     | 1.94 | 30×40     | 1.84 | 35×30     | 1.59 |
| 470            |           |      | 25×60     | 2.25 | 30×45     | 2.06 | 35×35     | 1.82 |
| 560            |           |      |           |      | 30×50     | 2.27 | 35×40     | 2.05 |
| 680            |           |      |           |      | 30×60     | 2.62 | 35×45     | 2.26 |
| 820            |           |      |           |      |           |      | 35×55     | 2.66 |
| 1000           |           |      |           |      |           |      | 35×60     | 2.86 |

| Cap.( $\mu$ F) | 420Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100            | 22×25     | 0.84 |           |      |           |      |           |      |
| 120            | 22×30     | 0.97 |           |      |           |      |           |      |
| 150            | 22×30     | 1.04 | 25×25     | 1.02 |           |      |           |      |
| 180            | 22×35     | 1.21 | 25×30     | 1.19 |           |      |           |      |
| 220            | 22×40     | 1.36 | 25×35     | 1.37 | 30×25     | 1.20 |           |      |
| 270            | 22×50     | 1.64 | 25×40     | 1.56 | 30×30     | 1.43 | 35×25     | 1.32 |
| 330            | 22×60     | 1.90 | 25×45     | 1.75 | 30×35     | 1.64 | 35×30     | 1.54 |
| 390            |           |      | 25×55     | 2.03 | 30×40     | 1.84 | 35×30     | 1.58 |
| 470            |           |      | 25×60     | 2.22 | 30×45     | 2.05 | 35×35     | 1.81 |
| 560            |           |      |           |      | 30×50     | 2.25 | 35×40     | 2.03 |
| 680            |           |      |           |      | 30×60     | 2.61 | 35×45     | 2.24 |
| 820            |           |      |           |      |           |      | 35×55     | 2.64 |

| Cap.( $\mu$ F) | 450Vdc    |      |           |      |           |      |           |      |
|----------------|-----------|------|-----------|------|-----------|------|-----------|------|
|                | $\phi$ 22 |      | $\phi$ 25 |      | $\phi$ 30 |      | $\phi$ 35 |      |
| 100            | 22×25     | 0.83 |           |      |           |      |           |      |
| 120            | 22×30     | 0.95 | 25×25     | 0.93 |           |      |           |      |
| 150            | 22×35     | 1.11 | 25×30     | 1.08 |           |      |           |      |
| 180            | 22×40     | 1.25 | 25×30     | 1.16 | 30×25     | 1.12 |           |      |
| 220            | 22×45     | 1.42 | 25×35     | 1.34 | 30×30     | 1.32 |           |      |
| 270            | 22×50     | 1.57 | 25×40     | 1.51 | 30×35     | 1.51 | 35×25     | 1.28 |
| 330            | 22×60     | 1.83 | 25×50     | 1.80 | 30×35     | 1.57 | 35×30     | 1.52 |
| 390            |           |      | 25×55     | 1.98 | 30×40     | 1.77 | 35×35     | 1.73 |
| 470            |           |      |           |      | 30×50     | 2.11 | 35×40     | 1.95 |
| 560            |           |      |           |      | 30×55     | 2.32 | 35×45     | 2.16 |
| 680            |           |      |           |      |           |      | 35×50     | 2.37 |
| 820            |           |      |           |      |           |      | 35×55     | 2.56 |

ケースサイズ Case Size  $\phi$  D × L(mm) →  
リップル電流 Ripple Current (A.r.m.s./120Hz, 125°C) →

## TNV series

105°C 3000~5000時間 低ESR品  
Load Life : 105°C 3000~5000 hours Low ESR

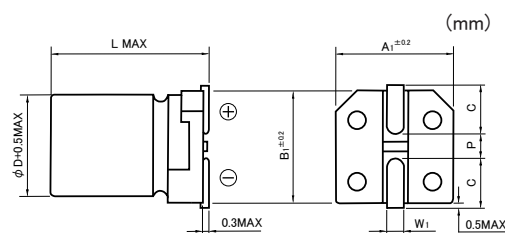
AEC-Q200



### ◆規格表／SPECIFICATIONS

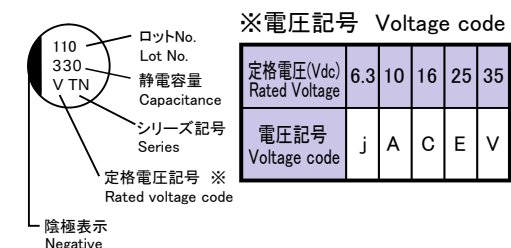
| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                   |                                                          |      |      |      |                  |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------|------|------|------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -55~+105°C                                                                                                                                                                           |                                                          |      |      |      |                  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 6.3~35Vdc                                                                                                                                                                            |                                                          |      |      |      |                  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20°C, 120Hz)                                                                                                                                                                   |                                                          |      |      |      |                  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.01CV 又は 3μA のいずれか大なる値以下 (定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage |                                                          |      |      |      |                  |
| 損失角の正接<br>(tan δ)<br>Dissipation Factor(MAX)                             | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                          | 6.3                                                      | 10   | 16   | 25   | 35 (20°C, 120Hz) |
|                                                                          | tan δ                                                                                                                                                                                | 0.26                                                     | 0.19 | 0.16 | 0.14 | 0.12             |
| 耐久性<br>Endurance                                                         | 105°C中で表の時間定格電圧印加後、下記項目を満足すること。<br>After applying rated voltage for specified time at 105°C, the capacitors shall meet the following requirements.                                   |                                                          |      |      |      |                  |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                        | 初期値の±30%以内<br>Within ±30% of the initial value.          |      |      |      |                  |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                         | 規格値の300%以下<br>Not more than 300% of the specified value. |      |      |      |                  |
|                                                                          | 漏れ電流<br>Leakage Current                                                                                                                                                              | 規格値以下<br>Not more than the specified value.              |      |      |      |                  |
|                                                                          | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                          | 時間 (hrs)<br>LifeTime                                     |      |      |      |                  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 6.3                                                                                                                                                                                  | 3000                                                     |      |      |      |                  |
|                                                                          | 10                                                                                                                                                                                   | 4000                                                     |      |      |      |                  |
|                                                                          | WV ≥ 16                                                                                                                                                                              | 5000                                                     |      |      |      |                  |
|                                                                          | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                          | 6.3                                                      | 10   | 16   | 25   | 35 (120Hz)       |
|                                                                          | Z(-25°C)/Z(20°C)                                                                                                                                                                     | 2                                                        | 2    | 2    | 2    | 2                |
|                                                                          | Z(-40°C)/Z(20°C)                                                                                                                                                                     | 3                                                        | 3    | 3    | 3    | 3                |
|                                                                          | Z(-55°C)/Z(20°C)                                                                                                                                                                     | 4                                                        | 4    | 4    | 3    | 3                |

### ◆寸法図／DIMENSIONS



| φD | L    | A1   | B1   | C   | W1      | P   |
|----|------|------|------|-----|---------|-----|
| 8  | 10.5 | 8.3  | 8.3  | 2.9 | 0.8~1.1 | 3.1 |
| 10 | 10.5 | 10.3 | 10.3 | 3.2 | 0.8~1.1 | 4.5 |

### ◆表示／MARKING



### ◆リプル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k ≤ |
|-----------------------|------|------|------|--------|
| 係数<br>Coefficient     | 0.60 | 0.85 | 0.95 | 1.00   |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|---------------------|
| □□□                   | TNV             | □□□□□               | M                                | □□□           | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | ケースサイズ<br>Case Size |

### ◆標準品一覧表／STANDARD SIZE

Size φD×L(mm), Rated Ripple Current (mA r.m.s./105°C, 100kHz), ESR(Ω MAX/20°C 100kHz)

| Vdc | Cap (μF) | Size (φD×L) | Ripple | ESR  |
|-----|----------|-------------|--------|------|
| 6.3 | 1200     | 8×10.5      | 850    | 0.08 |
|     | 2200     | 10×10.5     | 1190   | 0.06 |
| 10  | 1000     | 8×10.5      | 850    | 0.08 |
|     | 1500     | 10×10.5     | 1190   | 0.06 |
| 16  | 680      | 8×10.5      | 850    | 0.08 |
|     | 1000     | 10×10.5     | 1190   | 0.06 |

| Vdc | Cap (μF) | Size (φD×L) | Ripple | ESR  |
|-----|----------|-------------|--------|------|
| 25  | 470      | 8×10.5      | 850    | 0.08 |
|     | 820      | 10×10.5     | 1190   | 0.06 |
| 35  | 330      | 8×10.5      | 850    | 0.08 |
|     | 560      | 10×10.5     | 1190   | 0.06 |

## BXG series

105°C 10000~12000時間品  
Load Life: 105°C 10000~12000 hours



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------|-------------------------------------------------|-------|---------|-------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|-------|-------|---------|-------|------------------------------|------------------------------------------------------------|---|---|---|---|---|-------------------------|---------------------------------------------|--|--|--|--|--|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=0.04CV+100 μ A以下(1分値)<br>I=0.04CV+100 μ A (1minute)<br>I=0.02CV+25 μ A以下(5分値)<br>I=0.02CV+25 μ A (5minutes)<br>I=漏れ電流(μ A)<br>Leakage Current<br>C=静電容量(μ F)<br>Capacitance<br>V=定格電圧(Vdc)<br>Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160</td><td>200</td><td>250</td><td>350</td><td>400</td><td>450</td></tr><tr><td>tan δ</td><td>0.15</td><td>0.15</td><td>0.15</td><td>0.20</td><td>0.20</td><td>0.20</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |      |      |      |                                                                                                                                                                 |                     | 定格電圧 (Vdc)<br>Rated Voltage   | 160                                             | 200   | 250     | 350   | 400 | 450                                                                                                                                                             | tan δ               | 0.15                 | 0.15  | 0.15  | 0.20    | 0.20  | 0.20                         |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 200  | 250  | 350  | 400  | 450                                                                                                                                                             |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| tan δ                                                                    | 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.15 | 0.15 | 0.20 | 0.20 | 0.20                                                                                                                                                            |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td colspan="5">初期値の±20%以内<br/>Within ±20% of the initial value.</td><td><table><tr><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>φD=10</td><td>10000</td></tr><tr><td>φD≥12.5</td><td>12000</td></tr></table></td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td colspan="5">規格値の 200% 以下<br/>Not more than 200% of the specified value.</td><td></td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td colspan="5">規格値以下<br/>Not more than the specified value.</td><td></td></tr></table> |      |      |      |      |                                                                                                                                                                 |                     | 静電容量変化率<br>Capacitance Change | 初期値の±20%以内<br>Within ±20% of the initial value. |       |         |       |     | <table><tr><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>φD=10</td><td>10000</td></tr><tr><td>φD≥12.5</td><td>12000</td></tr></table> | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | φD=10 | 10000 | φD≥12.5 | 12000 | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. |   |   |   |   |   | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |  |  |  |  |  |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の±20%以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |      |      |      | <table><tr><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>φD=10</td><td>10000</td></tr><tr><td>φD≥12.5</td><td>12000</td></tr></table> | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs)          | φD=10                                           | 10000 | φD≥12.5 | 12000 |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| ケースサイズ<br>Case Size                                                      | 時間(hrs)<br>Time(hrs)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| φD=10                                                                    | 10000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| φD≥12.5                                                                  | 12000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |      |      |      |                                                                                                                                                                 |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>160</td><td>200</td><td>250</td><td>350</td><td>400</td><td>450</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td><td>5</td><td>5</td><td>6</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                     |      |      |      |      |                                                                                                                                                                 |                     | 定格電圧 (Vdc)<br>Rated Voltage   | 160                                             | 200   | 250     | 350   | 400 | 450                                                                                                                                                             | Z(-25℃)/Z(+20℃)     | 3                    | 3     | 3     | 5       | 5     | 6                            | Z(-40℃)/Z(+20℃)                                            | 6 | 6 | 6 | 6 | 6 | 10                      |                                             |  |  |  |  |  |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 200  | 250  | 350  | 400  | 450                                                                                                                                                             |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3    | 3    | 5    | 5    | 6                                                                                                                                                               |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |
| Z(-40℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6    | 6    | 6    | 6    | 10                                                                                                                                                              |                     |                               |                                                 |       |         |       |     |                                                                                                                                                                 |                     |                      |       |       |         |       |                              |                                                            |   |   |   |   |   |                         |                                             |  |  |  |  |  |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | BXG             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

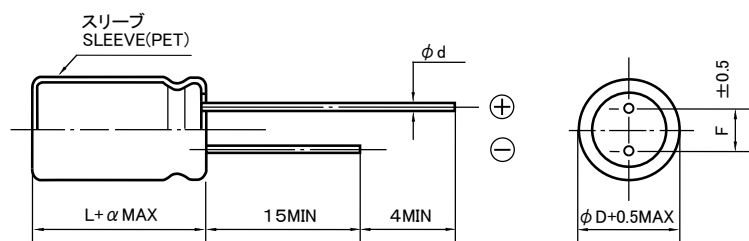
### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

| Frequency (Hz)    |                 | 120  | 1k   | 10k  | 100k≤ |
|-------------------|-----------------|------|------|------|-------|
| 係数<br>Coefficient | 8.2~18 $\mu F$  | 0.30 | 0.60 | 0.90 | 1.00  |
|                   | 22~82 $\mu F$   | 0.40 | 0.70 | 0.90 | 1.00  |
|                   | 100~270 $\mu F$ | 0.45 | 0.75 | 0.90 | 1.00  |

◆寸法図／DIMENSIONS



(mm)

| φ D | 10  | 12.5 | 16  | 18 |
|-----|-----|------|-----|----|
| φ d | 0.6 |      | 0.8 |    |
| F   | 5.0 |      | 7.5 |    |
| α   | 2.0 |      |     |    |

◆標準品一覧表／STANDARD SIZE

Size φ D×L (mm) , Rated Ripple Current (A r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance | 外形寸法<br>Size | 定格リプル電流<br>RatedRipple<br>Current |
|--------------------------------|---------------------|--------------|-----------------------------------|
| 160                            | 39                  | 10×16        | 630                               |
|                                | 47                  | 10×20        | 800                               |
|                                | 56                  | 10×20        | 860                               |
|                                | 68                  | 12.5×20      | 1200                              |
|                                | 82                  | 12.5×20      | 1280                              |
|                                | 100                 | 12.5×25      | 1450                              |
|                                | 120                 | 12.5×25      | 1500                              |
|                                | 150                 | 16×20        | 1650                              |
|                                | 180                 | 16×25        | 2000                              |
|                                |                     | 18×20        | 1700                              |
|                                | 220                 | 16×25        | 2100                              |
|                                | 270                 | 18×25        | 2370                              |
| 200                            | 33                  | 10×16        | 630                               |
|                                | 39                  | 10×20        | 800                               |
|                                | 47                  | 10×20        | 860                               |
|                                | 56                  | 12.5×20      | 1100                              |
|                                | 68                  | 12.5×20      | 1200                              |
|                                | 82                  | 12.5×25      | 1450                              |
|                                | 100                 | 12.5×25      | 1480                              |
|                                | 120                 | 16×20        | 1600                              |
|                                | 150                 | 16×25        | 1900                              |
|                                |                     | 18×20        | 1700                              |
|                                | 220                 | 18×25        | 2370                              |
| 250                            | 22                  | 10×16        | 500                               |
|                                | 33                  | 10×20        | 630                               |
|                                | 39                  | 10×20        | 800                               |
|                                | 47                  | 12.5×20      | 1000                              |
|                                | 56                  | 12.5×20      | 1100                              |
|                                | 68                  | 12.5×25      | 1350                              |
|                                | 82                  | 16×20        | 1480                              |
|                                | 100                 | 16×25        | 1600                              |
|                                | 120                 | 16×25        | 1700                              |
|                                |                     | 18×20        | 1600                              |
|                                | 150                 | 18×25        | 2000                              |
| 350                            | 15                  | 10×16        | 450                               |
|                                | 22                  | 10×20        | 550                               |
|                                | 33                  | 12.5×20      | 750                               |
|                                | 39                  | 12.5×25      | 900                               |
|                                | 47                  | 12.5×25      | 980                               |
|                                | 56                  | 16×20        | 1100                              |
|                                | 68                  | 16×25        | 1300                              |
|                                |                     | 18×20        | 1280                              |
|                                | 82                  | 18×25        | 1550                              |
|                                | 100                 | 18×25        | 1600                              |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>(μ F) | 外形寸法<br>Size | 定格リプル電流<br>RatedRipple<br>Current |
|--------------------------------|------------------------------|--------------|-----------------------------------|
| 400                            | 10                           | 10×16        | 380                               |
|                                | 12                           | 10×16        | 450                               |
|                                | 15                           | 10×20        | 500                               |
|                                | 18                           | 10×20        | 550                               |
|                                | 22                           | 12.5×20      | 650                               |
|                                | 27                           | 12.5×20      | 700                               |
|                                | 33                           | 12.5×25      | 850                               |
|                                | 39                           | 12.5×25      | 900                               |
|                                | 47                           | 16×20        | 1000                              |
|                                | 56                           | 16×25        | 1220                              |
|                                |                              | 18×20        | 1200                              |
|                                | 82                           | 18×25        | 1600                              |
| 450                            | 8.2                          | 10×16        | 330                               |
|                                | 10                           | 10×16        | 380                               |
|                                | 12                           | 10×20        | 470                               |
|                                | 15                           | 10×20        | 500                               |
|                                | 18                           | 12.5×20      | 560                               |
|                                | 22                           | 12.5×20      | 600                               |
|                                | 27                           | 12.5×25      | 750                               |
|                                | 33                           | 16×20        | 860                               |
|                                | 39                           | 16×25        | 1000                              |
|                                |                              | 18×20        | 960                               |
|                                | 47                           | 16×25        | 1100                              |
|                                |                              | 18×20        | 1000                              |
|                                | 56                           | 18×25        | 1250                              |
|                                | 68                           | 18×25        | 1350                              |

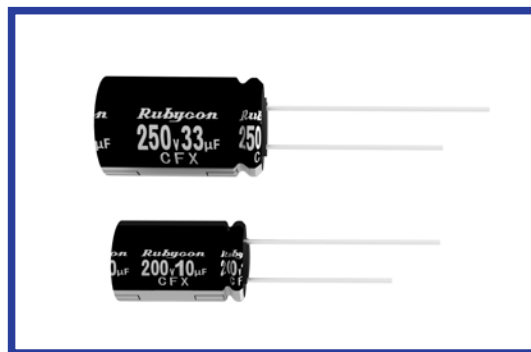
## CFX series

105°C 5000時間品

Load Life : 105°C 5000 hours

・LED照明用電源回路に最適。

For LED Lighting.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                 |      |                                                                                                               |                                                            |      |      |      |                                                                                                       |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------|------|------|-------------------------------------------------------------------------------------------------------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -25～+105℃                                                                                                                                                                          |      |                                                                                                               |                                                            |      |      |      |                                                                                                       |
| 定格電圧範囲<br>Rated Voltage Range                                            | 160～450Vdc                                                                                                                                                                         |      |                                                                                                               |                                                            |      |      |      |                                                                                                       |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                  |      |                                                                                                               |                                                            |      |      |      |                                                                                                       |
| 漏れ電流<br>Leakage Current (MAX)                                            | CV ≤ 1000                                                                                                                                                                          |      | CV > 1000                                                                                                     |                                                            |      |      |      | I = 漏れ電流 (μ A)<br>Leakage Current<br>C = 静電容量 (μ F)<br>Capacitance<br>V = 定格電圧 (Vdc)<br>Rated Voltage |
|                                                                          | I=0.1CV+40 μ A以下(1分値)<br>I=0.1CV+40 μ A (1minute)<br>I=0.03CV+15 μ A以下(5分値)<br>I=0.03CV+15 μ A (5minutes)                                                                          |      | I=0.04CV+100 μ A以下(1分値)<br>I=0.04CV+100 μ A (1minute)<br>I=0.02CV+25 μ A以下(5分値)<br>I=0.02CV+25 μ A (5minutes) |                                                            |      |      |      |                                                                                                       |
| 損失角の正接 (tan δ)<br>Dissipation Factor (MAX)                               | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                        | 160  | 200                                                                                                           | 250                                                        | 350  | 400  | 450  | (20℃, 120Hz)                                                                                          |
|                                                                          | tan δ                                                                                                                                                                              | 0.15 | 0.15                                                                                                          | 0.15                                                       | 0.20 | 0.20 | 0.20 |                                                                                                       |
| 耐久性<br>Endurance                                                         | 105℃中で5000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 5000hours at 105℃,<br>the capacitors shall meet the following requirements. |      |                                                                                                               |                                                            |      |      |      |                                                                                                       |
|                                                                          | 静電容量変化率<br>Capacitance Change                                                                                                                                                      |      |                                                                                                               | 初期値の ±20% 以内<br>Within ±20% of the initial value.          |      |      |      |                                                                                                       |
|                                                                          | 損失角の正接<br>Dissipation Factor                                                                                                                                                       |      |                                                                                                               | 規格値の 200% 以下<br>Not more than 200% of the specified value. |      |      |      |                                                                                                       |
|                                                                          | 漏れ電流<br>Leakage Current                                                                                                                                                            |      |                                                                                                               | 規格値以下<br>Not more than the specified value.                |      |      |      |                                                                                                       |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                        | 160  | 200                                                                                                           | 250                                                        | 350  | 400  | 450  | (120Hz)                                                                                               |
|                                                                          | Z(-25℃)/Z(+20℃)                                                                                                                                                                    | 3    | 3                                                                                                             | 3                                                          | 6    | 6    | 6    |                                                                                                       |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | CFX             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

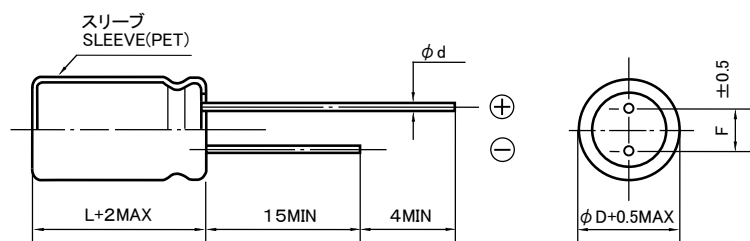
### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 120 | 1k  | 10k | 100k ≤ |
|-----------------------|-----|-----|-----|--------|
| 2.2~4.7 µF            | 0.2 | 0.4 | 0.8 | 1.0    |
| 6.8~10 µF             | 0.3 | 0.6 | 0.9 | 1.0    |
| 22~100 µF             | 0.5 | 0.8 | 0.9 | 1.0    |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve

◆寸法図／DIMENSIONS



(mm)

| $\phi D$ | 10  | 12.5 | 16  |
|----------|-----|------|-----|
| $\phi d$ | 0.6 |      | 0.8 |
| F        | 5.0 |      | 7.5 |

◆標準品一覧表／STANDARD SIZE

Rated Ripple Current (mA r.m.s./105°C, 100kHz)

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法<br>Size $\phi D \times L$<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current |
|--------------------------------|------------------------------------|----------------------------------------|----------------------------------------|
| 160                            | 27                                 | 10×12.5                                | 601                                    |
| 200                            | 10                                 | 10×16                                  | 300                                    |
|                                | 22                                 | 10×12.5                                | 595                                    |
|                                |                                    | 10×16                                  | 360                                    |
|                                | 33                                 | 10×20                                  | 500                                    |
|                                | 47                                 | 12.5×20                                | 660                                    |
|                                | 68                                 | 12.5×25                                | 760                                    |
|                                | 100                                | 16×25                                  | 1120                                   |
| 250                            | 6.8                                | 10×12.5                                | 340                                    |
|                                | 10                                 | 10×16                                  | 300                                    |
|                                | 15                                 | 10×12.5                                | 468                                    |
|                                | 22                                 | 10×20                                  | 500                                    |
|                                | 33                                 | 12.5×20                                | 600                                    |
|                                | 47                                 | 12.5×25                                | 720                                    |
|                                | 68                                 | 16×25                                  | 920                                    |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法<br>Size $\phi D \times L$<br>(mm) | 定格リプル<br>電流<br>Rated Ripple<br>Current |
|--------------------------------|------------------------------------|----------------------------------------|----------------------------------------|
| 350                            | 3.3                                | 10×16                                  | 180                                    |
|                                | 4.7                                | 10×16                                  | 220                                    |
|                                | 6.8                                | 10×16                                  | 220                                    |
|                                | 10                                 | 10×12.5                                | 400                                    |
|                                |                                    | 10×20                                  | 280                                    |
|                                | 22                                 | 12.5×20                                | 350                                    |
|                                | 33                                 | 12.5×25                                | 430                                    |
|                                | 47                                 | 16×25                                  | 660                                    |
| 400                            | 2.2                                | 10×16                                  | 160                                    |
|                                | 3.3                                | 10×16                                  | 180                                    |
|                                | 4.7                                | 10×16                                  | 220                                    |
|                                | 6.8                                | 10×16                                  | 220                                    |
|                                | 8.2                                | 10×12.5                                | 330                                    |
|                                | 10                                 | 10×20                                  | 280                                    |
|                                | 22                                 | 12.5×25                                | 430                                    |
|                                | 33                                 | 16×25                                  | 640                                    |
| 450                            | 3.3                                | 10×12.5                                | 307                                    |



## HCX series

125℃ 3000時間品  
Load Life: 125℃ 3000 hours

- ・高リップル、低ESR 車載専用高信頼性。  
High Ripple Current, Low ESR, High Reliability.
  - ・高圧インバータ等のDCリンクに最適。  
Suitable for DC Link of high voltage inverter.
- AEC-Q200.



車載専用 Automotive Only



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------|------|------|-----------------|---|---|---|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+125℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 定格電圧範囲<br>Rated Voltage Range                                            | 250～290Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20% (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                 |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>250</td><td>275</td><td>290</td></tr><tr><td>tan δ</td><td>0.15</td><td>0.15</td><td>0.15</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage   | 250                                               | 275                          | 290                                                        | tan δ                   | 0.15                                        | 0.15 | 0.15 |                 |   |   |   |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 275                           | 290                                               |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| tan δ                                                                    | 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.15                          | 0.15                                              |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 耐久性<br>Endurance                                                         | 125℃中で3000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for 3000 hours at 125℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td></tr></table> | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. |      |      |                 |   |   |   |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                                   |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>250</td><td>275</td><td>290</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>3</td><td>3</td><td>3</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>6</td><td>6</td><td>6</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                       | 定格電圧 (Vdc)<br>Rated Voltage   | 250                                               | 275                          | 290                                                        | Z(-25℃)/Z(+20℃)         | 3                                           | 3    | 3    | Z(-40℃)/Z(+20℃) | 6 | 6 | 6 |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 275                           | 290                                               |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| Z(-25℃)/Z(+20℃)                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3                             | 3                                                 |                              |                                                            |                         |                                             |      |      |                 |   |   |   |
| Z(-40℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6                             | 6                                                 |                              |                                                            |                         |                                             |      |      |                 |   |   |   |

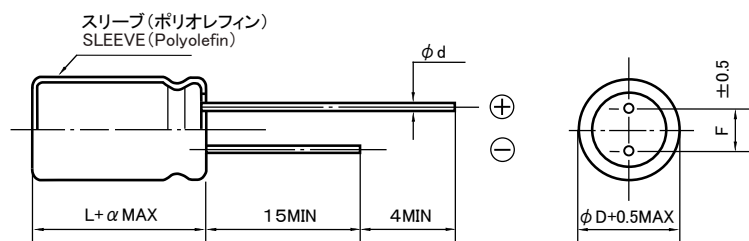
### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | HCX             | □□□□□               | M                                | SPA           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／MULTIPLIER FOR RIPPLE CURRENT

|                       |      |      |      |       |
|-----------------------|------|------|------|-------|
| 周波数 (Hz)<br>Frequency | 120  | 1k   | 10k  | 100k≤ |
| 係数 Coefficient        | 0.45 | 0.80 | 1.00 | 1.00  |

◆寸法図／DIMENSIONS



(mm)

|          |     |      |     |
|----------|-----|------|-----|
| $\phi D$ | 10  | 12.5 | 16  |
| $\phi d$ | 0.8 |      |     |
| F        | 5.0 |      | 7.5 |
| $\alpha$ | 2.0 |      |     |

◆標準品一覧表／STANDARD SIZE

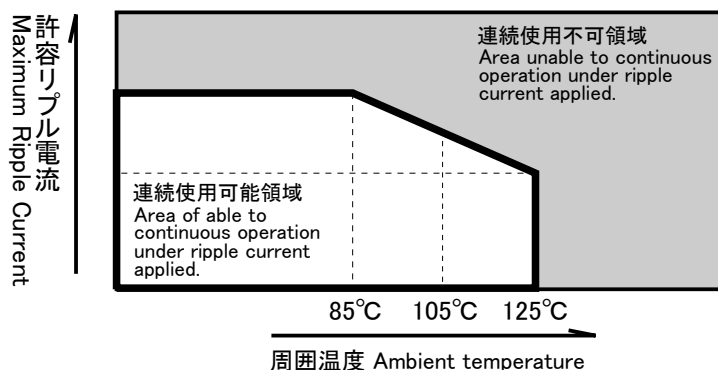
| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法<br>Size<br>$\phi D \times L$ (mm) | 定格リプル電流 $I_0$<br>Rated ripple current<br>$I_0$ (mA r.m.s./<br>125°C, 100kHz) | 許容リプル電流 IMAX<br>MAX ripple current<br>IMAX (mA r.m.s./<br>125°C, 100kHz) | 許容リプル電流 IMAX<br>MAX ripple current<br>IMAX (mA r.m.s./<br>105°C, 100kHz) |
|--------------------------------|------------------------------------|----------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 250                            | 27                                 | 12.5×20                                | 1780                                                                         | 1780                                                                     | 2380                                                                     |
|                                | 39                                 | 12.5×25                                | 2280                                                                         | 2280                                                                     | 3050                                                                     |
|                                | 47                                 | 10×40                                  | 2440                                                                         | 2440                                                                     | 3260                                                                     |
|                                | 47                                 | 16×20                                  | 2280                                                                         | 2280                                                                     | 3050                                                                     |
|                                | 51                                 | 12.5×30                                | 2770                                                                         | 2770                                                                     | 3710                                                                     |
| 275                            | 27                                 | 12.5×20                                | 1790                                                                         | 1790                                                                     | 2390                                                                     |
|                                | 39                                 | 12.5×25                                | 2290                                                                         | 2290                                                                     | 3060                                                                     |
|                                | 47                                 | 10×40                                  | 2450                                                                         | 2450                                                                     | 3280                                                                     |
|                                | 47                                 | 16×20                                  | 2270                                                                         | 2270                                                                     | 3040                                                                     |
|                                | 51                                 | 12.5×30                                | 2780                                                                         | 2780                                                                     | 3720                                                                     |
| 290                            | 22                                 | 12.5×20                                | 1740                                                                         | 1740                                                                     | 2330                                                                     |
|                                | 33                                 | 12.5×25                                | 2240                                                                         | 2240                                                                     | 3000                                                                     |
|                                | 39                                 | 10×40                                  | 2390                                                                         | 2390                                                                     | 3200                                                                     |
|                                | 39                                 | 16×20                                  | 2240                                                                         | 2240                                                                     | 3000                                                                     |
|                                | 43                                 | 12.5×30                                | 2710                                                                         | 2710                                                                     | 3630                                                                     |

定格リプル電流 $I_0$ : 耐久性規格を満たす、連続印加可能なリプル電流。

Rated ripple current  $I_0$ : Ripple current continuous operation within endurance lifetime.

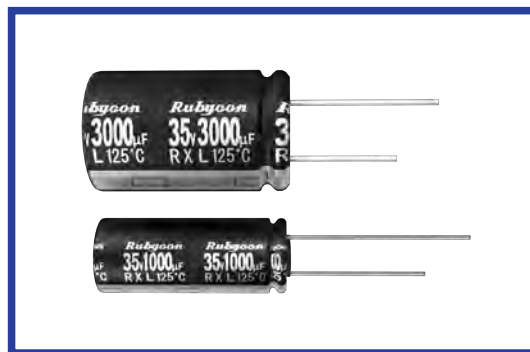
許容リプル電流IMAX: 連続印加可能なリプル電流最大値。寿命推定時間は、寿命計算式に従う。

Maximum ripple current IMAX: Maximum ripple current continuous operation. Estimated lifetime complies with our lifetime calculation formula.



## RXL series

125°C 3000～8000時間品 高リップル、小形化品。  
125°C 3000～8000 hours High Ripple Current, Miniaturized.



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                                                                                                                    | 特性 Characteristics                                                                                                                                                                    |                                                            |                      |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                                                                                                                     | -55～+125℃                                                                                                                                                                             |                                                            |                      |      |
| 定格電圧範囲<br>Rated Voltage Range                                                                                                                                              | 16～35Vdc                                                                                                                                                                              |                                                            |                      |      |
| 静電容量許容差<br>Capacitance Tolerance                                                                                                                                           | ±20%(20℃, 120Hz)                                                                                                                                                                      |                                                            |                      |      |
| 漏れ電流<br>Leakage Current (MAX)                                                                                                                                              | I=0.01CV又は3μAのいずれか大なる値以下(定格電圧印加2分後)<br>I=0.01CV or 3μA whichever is greater. (After 2 minutes)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage      |                                                            |                      |      |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                                                                                                                  | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                           | 16                                                         | 25                   | 35   |
|                                                                                                                                                                            | tan δ                                                                                                                                                                                 | 0.16                                                       | 0.14                 | 0.12 |
| (20℃, 120Hz)<br>1000μFを越えるものは1000μF増す毎に上表の値に0.02を加えた値とする。<br>When capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF. |                                                                                                                                                                                       |                                                            |                      |      |
| 耐久性<br>Endurance                                                                                                                                                           | 125℃中で右表の時間定格電圧(定格リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 125℃, the capacitors shall meet the following requirements. |                                                            |                      |      |
|                                                                                                                                                                            | 静電容量変化率<br>Capacitance Change                                                                                                                                                         | 初期値の±30%以内<br>Within ±30% of the initial value.            |                      |      |
|                                                                                                                                                                            | 損失角の正接<br>Dissipation Factor                                                                                                                                                          | 規格値の 300% 以下<br>Not more than 300% of the specified value. |                      |      |
|                                                                                                                                                                            | 漏れ電流<br>Leakage Current                                                                                                                                                               | 規格値以下<br>Not more than the specified value.                |                      |      |
|                                                                                                                                                                            |                                                                                                                                                                                       | ケースサイズ<br>Case Size                                        | 時間(hrs)<br>Time(hrs) |      |
|                                                                                                                                                                            |                                                                                                                                                                                       | 10x16                                                      | 3000                 |      |
|                                                                                                                                                                            |                                                                                                                                                                                       | 10x20                                                      | 4000                 |      |
|                                                                                                                                                                            |                                                                                                                                                                                       | 10x25                                                      | 5000                 |      |
|                                                                                                                                                                            |                                                                                                                                                                                       | φD≥12.5                                                    | L≥20                 | 6000 |
|                                                                                                                                                                            |                                                                                                                                                                                       |                                                            | L≥25                 | 8000 |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX)                                                                                                   | 定格電圧 (Vdc)<br>Rated Voltage                                                                                                                                                           | 16                                                         | 25                   | 35   |
|                                                                                                                                                                            | Z(-55℃)/Z(+20℃)                                                                                                                                                                       | 3                                                          | 3                    | 3    |
| (120Hz)                                                                                                                                                                    |                                                                                                                                                                                       |                                                            |                      |      |

### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | RXL             | □□□□□               | M                                | □□□           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz)<br>Frequency | 120                 | 1k   | 10k  | 100k≤ |
|----------------------|---------------------|------|------|-------|
| 係数<br>Coefficient    | 510μF<br>0.55       | 0.77 | 0.94 | 1.00  |
|                      | 750～1800μF<br>0.60  | 0.80 | 0.96 | 1.00  |
|                      | 2000～7500μF<br>0.70 | 0.85 | 0.98 | 1.00  |

### ◆副記号／OPTION

EFC : PETスリーブ PET Sleeve



## BHW series

車載専用 Automotive Only

105℃ 10000～12000時間品 -40℃対応  
105℃ 10000～12000 hours, Temp.Range : -40℃

・車載充電器向けに最適  
Suitable for On Board Charger.

AEC-Q200



### ◆規格表／SPECIFICATIONS

| 項目 Item                                                                  | 特性 Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|-------------------------------|---------------------------------------------------|---------------------|----------------------|------------------------------|------------------------------------------------------------|-----------------|-------|-------------------------|---------------------------------------------|--------|-------|
| カテゴリ温度範囲<br>Category Temperature Range                                   | -40～+105℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 定格電圧範囲<br>Rated Voltage Range                                            | 400～450Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 静電容量許容差<br>Capacitance Tolerance                                         | ±20%(20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 漏れ電流<br>Leakage Current (MAX)                                            | I=3√CV (定格電圧印加5分後)<br>I=3√CV (After 5 minutes application of rated voltage)<br>I=漏れ電流(μA) C=静電容量(μF) V=定格電圧(Vdc)<br>Leakage Current Capacitance Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 損失角の正接(tan δ)<br>Dissipation Factor (MAX)                                | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400</td><td>420, 450</td></tr><tr><td>tan δ</td><td>0.20</td><td>0.25</td></tr></table> (20℃, 120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                      | 定格電圧 (Vdc)<br>Rated Voltage   | 400                                               | 420, 450            | tan δ                | 0.20                         | 0.25                                                       |                 |       |                         |                                             |        |       |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 420, 450            |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| tan δ                                                                    | 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.25                |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 耐久性<br>Endurance                                                         | 105℃中で右表の時間定格電圧(リップル重畳)印加後、下記項目を満足すること。<br>After applying rated voltage with rated ripple current for specified time at 105℃, the capacitors shall meet the following requirements. <table><tr><td>静電容量変化率<br/>Capacitance Change</td><td>初期値の ±20% 以内<br/>Within ±20% of the initial value.</td><td>ケースサイズ<br/>Case Size</td><td>時間(hrs)<br/>Time(hrs)</td></tr><tr><td>損失角の正接<br/>Dissipation Factor</td><td>規格値の 200% 以下<br/>Not more than 200% of the specified value.</td><td>L ≤ 20</td><td>10000</td></tr><tr><td>漏れ電流<br/>Leakage Current</td><td>規格値以下<br/>Not more than the specified value.</td><td>L ≥ 25</td><td>12000</td></tr></table> |                     |                      | 静電容量変化率<br>Capacitance Change | 初期値の ±20% 以内<br>Within ±20% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) | 損失角の正接<br>Dissipation Factor | 規格値の 200% 以下<br>Not more than 200% of the specified value. | L ≤ 20          | 10000 | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | L ≥ 25 | 12000 |
| 静電容量変化率<br>Capacitance Change                                            | 初期値の ±20% 以内<br>Within ±20% of the initial value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ケースサイズ<br>Case Size | 時間(hrs)<br>Time(hrs) |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 損失角の正接<br>Dissipation Factor                                             | 規格値の 200% 以下<br>Not more than 200% of the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | L ≤ 20              | 10000                |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 漏れ電流<br>Leakage Current                                                  | 規格値以下<br>Not more than the specified value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | L ≥ 25              | 12000                |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio (MAX) | <table><tr><td>定格電圧 (Vdc)<br/>Rated Voltage</td><td>400</td><td>420, 450</td></tr><tr><td>Z(-25℃)/Z(+20℃)</td><td>5</td><td>6</td></tr><tr><td>Z(-40℃)/Z(+20℃)</td><td>6</td><td>10</td></tr></table> (120Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                      | 定格電圧 (Vdc)<br>Rated Voltage   | 400                                               | 420, 450            | Z(-25℃)/Z(+20℃)      | 5                            | 6                                                          | Z(-40℃)/Z(+20℃) | 6     | 10                      |                                             |        |       |
| 定格電圧 (Vdc)<br>Rated Voltage                                              | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 420, 450            |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| Z(-25℃)/Z(+20℃)                                                          | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6                   |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |
| Z(-40℃)/Z(+20℃)                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10                  |                      |                               |                                                   |                     |                      |                              |                                                            |                 |       |                         |                                             |        |       |

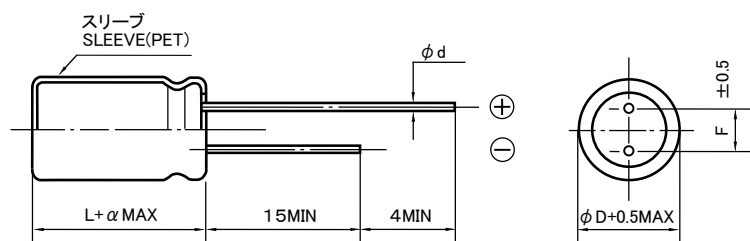
### ◆呼称方法／PART NUMBER

|                       |                 |                     |                                  |               |                         |                     |
|-----------------------|-----------------|---------------------|----------------------------------|---------------|-------------------------|---------------------|
| □□□                   | BHW             | □□□□□               | M                                | SPA           | □□                      | D x L               |
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 静電容量<br>Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |

### ◆リップル電流補正係数／ MULTIPLIER FOR RIPPLE CURRENT

| 周波数 (Hz)<br>Frequency | 60(50)     | 120  | 500  | 1k   | 10k  | 100k ≤ |
|-----------------------|------------|------|------|------|------|--------|
| 係数<br>Coefficient     | 47～91 μF   | 0.80 | 1.00 | 1.30 | 1.50 | 2.00   |
|                       | 100～220 μF | 0.80 | 1.00 | 1.30 | 1.50 | 2.00   |

◆寸法図／DIMENSIONS



(mm)

|          |     |    |
|----------|-----|----|
| $\phi D$ | 16  | 18 |
| $\phi d$ | 0.8 |    |
| F        | 7.5 |    |
| $\alpha$ | 2.0 |    |

◆標準品一覧表／STANDARD SIZE

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法<br>Size<br>$\phi D \times L$ (mm) | 定格リプル電流<br>Rated Ripple Current<br>(Ar.m.s./105°C, 120Hz) |
|--------------------------------|------------------------------------|----------------------------------------|-----------------------------------------------------------|
| 400                            | 56                                 | 16×20                                  | 0.50                                                      |
|                                | 68                                 | 18×20                                  | 0.57                                                      |
|                                | 75                                 | 16×25                                  | 0.62                                                      |
|                                | 100                                | 16×30                                  | 0.75                                                      |
|                                | 100                                | 18×25                                  | 0.73                                                      |
|                                | 120                                | 16×35                                  | 0.86                                                      |
|                                | 130                                | 16×40                                  | 0.93                                                      |
|                                | 130                                | 18×30                                  | 0.87                                                      |
|                                | 150                                | 16×45                                  | 1.03                                                      |
|                                | 160                                | 18×35                                  | 1.00                                                      |
|                                | 180                                | 18×40                                  | 1.11                                                      |
|                                | 190                                | 18×45                                  | 1.18                                                      |
|                                | 220                                | 18×50                                  | 1.31                                                      |
| 420                            | 51                                 | 16×20                                  | 0.47                                                      |
|                                | 68                                 | 16×25                                  | 0.58                                                      |
|                                | 68                                 | 18×20                                  | 0.55                                                      |
|                                | 91                                 | 16×30                                  | 0.70                                                      |
|                                | 91                                 | 18×25                                  | 0.69                                                      |
|                                | 110                                | 16×35                                  | 0.80                                                      |
|                                | 120                                | 18×30                                  | 0.82                                                      |
|                                | 130                                | 16×40                                  | 0.91                                                      |
|                                | 150                                | 18×35                                  | 0.95                                                      |
|                                | 150                                | 16×45                                  | 1.01                                                      |
|                                | 160                                | 18×40                                  | 1.03                                                      |
|                                | 180                                | 18×45                                  | 1.13                                                      |
|                                | 190                                | 18×50                                  | 1.20                                                      |

| 定格電圧<br>Rated Voltage<br>(Vdc) | 静電容量<br>Capacitance<br>( $\mu F$ ) | 外形寸法<br>Size<br>$\phi D \times L$ (mm) | 定格リプル電流<br>Rated Ripple Current<br>(Ar.m.s./105°C, 120Hz) |
|--------------------------------|------------------------------------|----------------------------------------|-----------------------------------------------------------|
| 450                            | 47                                 | 16×20                                  | 0.45                                                      |
|                                | 62                                 | 16×25                                  | 0.56                                                      |
|                                | 62                                 | 18×20                                  | 0.53                                                      |
|                                | 82                                 | 16×30                                  | 0.67                                                      |
|                                | 82                                 | 18×25                                  | 0.66                                                      |
|                                | 100                                | 16×35                                  | 0.78                                                      |
|                                | 110                                | 18×30                                  | 0.79                                                      |
|                                | 120                                | 16×40                                  | 0.87                                                      |
|                                | 130                                | 18×35                                  | 0.90                                                      |
|                                | 130                                | 16×45                                  | 0.95                                                      |
|                                | 160                                | 18×40                                  | 1.02                                                      |
|                                | 180                                | 18×45                                  | 1.12                                                      |
|                                | 190                                | 18×50                                  | 1.20                                                      |