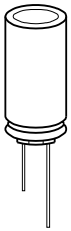
# Aluminum electrolytic capacitors

Single-ended capacitors

**Series/Type:** **B41827, B43827**
Date: December 2010



## General-purpose grade capacitors

### Applications

- General-purpose applications
- Semi-professional to professional application range
- For filtering, coupling and pulse circuits

### Features

- Miniaturized dimensions
- RoHS-compatible
- Useful life of 2000 h at 85 °C

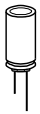
### Construction

- Radial leads
- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Minus pole marking on the insulating sleeve
- Case with safety vent from diameter 8 mm

### Delivery mode

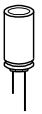
- Bulk
- Taped, Ammo pack
- Cut (see chapter "Single-ended – Taping, packing and lead configurations, Cut leads (Chapter A)")
- Kinked (see chapter "Single-ended – Taping, packing and lead configurations, Kinked leads (Chapter A)")

Refer to chapter "Single-ended capacitors – Taping, packing and lead configurations" for further details.

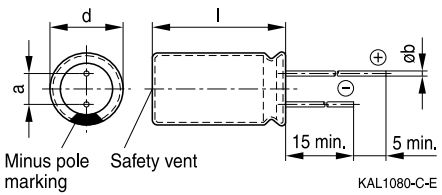


**Specifications and characteristics in brief**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Series | B41827 | | | | | B43827 | | | | | | | |
| Rated voltage $V_R$ | 6.3 ... 100 V DC | | | | | 160 ... 450 V DC | | | | | | | |
| Surge voltage $V_S$ | $V_R \leq 250$ V DC: 1.15 · $V_R$ (at room temperature)<br>$V_R > 250$ V DC: 1.1 · $V_R$ (at room temperature) | | | | | | | | | | | | |
| Rated capacitance $C_R$ | 0.47 ... 22000 µF | | | | | 0.47 ... 330 µF | | | | | | | |
| Capacitance tolerance | ±20% ≙ M | | | | | ±20% ≙ M | | | | | | | |
| Dissipation factor (max.) (20 °C, 120 Hz) | For capacitance higher than 1000 µF add 0.02 for every increase of 1000 µF. | | | | | | | | | | | | |
| | $V_R$ (V DC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 ... 250 | 350 ... 400 | 450 | |
| | tan δ | 0.22 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | 0.18 | 0.20 | 0.23 | |
| Leakage current $I_{leak}$ (20 °C, after 5 minutes) | $I_{leak} \leq 0.01\,\mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right)$<br>or 3 µA, whichever is greater | | | | | $I_{leak} \leq 0.03\,\mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right) + 10\,\mu A$ | | | | | | | |
| Useful life<br>85 °C; $V_R$; $I_{AC,R}$ | > 2000 h | | | | | | | | | | | | |
| Requirements | $\Delta C/C$ ≤ ±20% of initial value<br>tan δ ≤ 2 times initial specified value<br>$I_{leak}$ ≤ initial specified limit | | | | | | | | | | | | |
| Shelf life | After storage for 1000 h at 85 °C, the capacitors shall meet the requirement of load life test after reforming process. After test: $V_R$ to be applied for 30 minutes, 24 to 48 hours before measurement. | | | | | | | | | | | | |
| Vibration resistance test | To IEC 60068-2-6, test Fc:<br>Frequency range 10 ... 55 Hz, displacement amplitude 0.75 mm, acceleration max. 10 *g,* duration 3 × 2 h.<br>If can size D <16 mm, capacitor is mounted by the leads<br>If can size D ≥16 mm, capacitor rigidly clamped by the aluminum case | | | | | | | | | | | | |
| IEC climatic category | To IEC 60068-1:<br>$V_R \leq 100$ V DC: 40/085/56 (−40 °C/+85 °C/56 days damp heat test)<br>$V_R > 100$ V DC: 25/085/56 (−25 °C/+85 °C/56 days damp heat test) | | | | | | | | | | | | |



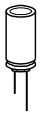
## Dimensional drawing




Safety vent for diameter ≥ 8 mm.

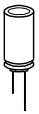
## Case Dimensions

| d × l<br>mm | $d_{max} \times l_{max}$<br>mm | a<br>mm | b<br>mm |
|---|---|---|---|
| 5 × 11 | 5.5 × 12.5 | 2.0 ±0.5 | 0.50 ±0.1 |
| 6.3 × 11 | 6.8 × 12.5 | 2.5 ±0.5 | 0.50 ±0.1 |
| 8 × 11.5 | 8.5 × 13.0 | 3.5 ±0.5 | 0.60 ±0.1 |
| 10 × 12.5 | 11.0 × 14.0 | 5.0 ±0.5 | 0.60 ±0.1 |
| 10 × 16 | 11.0 × 17.5 | 5.0 ±0.5 | 0.60 ±0.1 |
| 10 × 20 | 11.0 × 22.0 | 5.0 ±0.5 | 0.60 ±0.1 |
| 12.5 × 20 | 13.5 × 22.0 | 5.0 ±0.5 | 0.60 ±0.1 |
| 12.5 × 25 | 13.5 × 27.0 | 5.0 ±0.5 | 0.60 ±0.1 |
| 16 × 25 | 17.0 × 27.0 | 7.5 ±0.5 | 0.80 ±0.1 |
| 16 × 31.5 | 17.0 × 33.5 | 7.5 ±0.5 | 0.80 ±0.1 |
| 16 × 35.5 | 17.0 × 37.5 | 7.5 ±0.5 | 0.80 ±0.1 |
| 18 × 35.5 | 19.0 × 37.5 | 7.5 ±0.5 | 0.80 ±0.1 |
| 18 × 40 | 19.0 × 42.0 | 7.5 ±0.5 | 0.80 ±0.1 |



**Overview of available types – B41827**

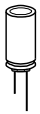
| $V_R$ (V DC) | 6.3 | 10 | 16 | 25 |
|---|---|---|---|---|
| | Case dimensions d × l (mm) | | | |
| $C_R$ (µF) | | | | |
| 47 | | | | 5 × 11 |
| 100 | | 5 × 11 | 5 × 11 | 6.3 × 11 |
| 220 | 5 × 11 | 6.3 × 11 | 6.3 × 11 | 8 × 11.5 |
| 330 | 6.3 × 11 | 6.3 × 11 | 8 × 11.5 | 10 × 12.5 |
| 470 | 6.3 × 11 | 8 × 11.5 | 8 × 11.5 | 10 × 12.5 |
| 1000 | 10 × 12.5 | 10 × 12.5 | 10 × 16 | 10 × 20 |
| 2200 | 10 × 20 | 10 × 20 | 12.5 × 20 | 12.5 × 25 |
| 3300 | 12.5 × 20 | 12.5 × 20 | 12.5 × 25 | 16 × 25 |
| 4700 | 12.5 × 25 | 12.5 × 25 | 16 × 25 | 16 × 31.5 |
| 6800 | 16 × 25 | | | |
| 10000 | 16 × 25 | 16 × 35.5 | 18 × 35.5 | |
| 15000 | 16 × 35.5 | 18 × 35.5 | | |
| 22000 | 18 × 40 | | | |



**B41827**

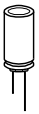
**Standard series – 85 °C**

| $V_R$ (V DC) | 35 | 50 | 63 | 100 |
|---|---|---|---|---|
| | Case dimensions d × l (mm) | | | |
| $C_R$ (µF) | | | | |
| 0.47 | | | | 5 × 11 |
| 1.0 | | | | 5 × 11 |
| 2.2 | | | | 5 × 11 |
| 3.3 | | | | 5 × 11 |
| 4.7 | | | | 5 × 11 |
| 10 | | 5 × 11 | 5 × 11 | 6.3 × 11 |
| 22 | | 5 × 11 | 6.3 × 11 | 8 × 11.5 |
| 33 | 5 × 11 | 5 × 11 | 6.3 × 11 | 10 × 12.5 |
| 47 | 5 × 11 | 6.3 × 11 | 6.3 × 11 | 10 × 12.5 |
| 100 | 6.3 × 11 | 8 × 11.5 | 10 × 12.5 | 10 × 20 |
| 220 | 10 × 12.5 | 10 × 12.5 | 10 × 20 | 12.5 × 25 |
| 330 | 10 × 12.5 | 10 × 16 | 12.5 × 20 | 16 × 25 |
| 470 | 10 × 16 | 10 × 20 | 12.5 × 25 | 16 × 31.5 |
| 1000 | 12.5 × 25 | 16 × 20 | 16 × 31.5 | 18 × 40 |
| 2200 | 16 × 25 | 16 × 31.5 | | |
| 3300 | 16 × 31.5 | | | |
| 4700 | 18 × 35.5 | | | |



**Overview of available types – B43827**

| $V_R$ (V DC) | 160 | 200 | 250 | 350 | 400 | 450 |
|---|---|---|---|---|---|---|
| | Case dimensions d × l (mm) | | | | | |
| $C_R$ (µF) | | | | | | |
| 0.47 | 5 × 11 | | 5 × 11 | | 6.3 × 11 | 8 × 11.5 |
| 1.0 | 5 × 11 | | 5 × 11 | 6.3 × 11 | 6.3 × 11 | 8 × 11.5 |
| 2.2 | 5 × 11 | | 6.3 × 11 | 8 × 11.5 | 8 × 11.5 | 10 × 12.5 |
| 3.3 | 6.3 × 11 | 6.3 × 11 | 6.3 × 11 | 10 × 12.5 | 10 × 12.5 | 10 × 16 |
| 4.7 | 6.3 × 11 | 8 × 11.5 | 8 × 11.5 | 10 × 12.5 | 10 × 16 | 10 × 20 |
| 10 | 8 × 11.5 | 10 × 12.5 | 10 × 12.5 | 10 × 20 | 12.5 × 20 | 12.5 × 20 |
| 22 | 10 × 16 | 10 × 20 | 10 × 20 | 12.5 × 25 | 16 × 25 | 16 × 25 |
| 33 | 10 × 20 | 12.5 × 20 | 12.5 × 25 | 16 × 25 | 16 × 25 | 16 × 31.5 |
| 47 | 12.5 × 25 | 12.5 × 20 | 12.5 × 25 | 16 × 35.5 | 16 × 35.5 | 18 × 40 |
| 100 | 16 × 25 | 16 × 25 | 16 × 31.5 | 18 × 40 | | |
| 220 | 16 × 35.5 | 18 × 35.5 | | | | |
| 330 | 18 × 35.5 | | | | | |





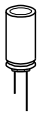
## Technical data and ordering codes – B41827

| $C_R$ 120 Hz, 20 °C µF | Case dimensions d × l mm | $I_{AC,R}$ 120 Hz, 85 °C mA | Ordering code (composition see below) |
|---|---|---|---|
| $V_R$ = 6.3 V DC | | | |
| 220 | 5 × 11 | 200 | B41827A2227M*** |
| 330 | 6.3 × 11 | 270 | B41827A2337M*** |
| 470 | 6.3 × 11 | 321 | B41827A2477M*** |
| 1000 | 10 × 12.5 | 542 | B41827A2108M*** |
| 2200 | 10 × 20 | 1005 | B41827A2228M*** |
| 3300 | 12.5 × 20 | 1195 | B41827A2338M*** |
| 4700 | 12.5 × 25 | 1560 | B41827A2478M*** |
| 6800 | 16 × 25 | 1925 | B41827A2688M*** |
| 10000 | 16 × 25 | 2360 | B41827A2109M*** |
| 15000 | 16 × 35.5 | 2855 | B41827A2159M*** |
| 22000 | 18 × 40 | 3345 | B41827A2229M*** |
| $V_R$ = 10 V DC | | | |
| 100 | 5 × 11 | 130 | B41827A3107M*** |
| 220 | 6.3 × 11 | 280 | B41827A3227M*** |
| 330 | 6.3 × 11 | 290 | B41827A3337M*** |
| 470 | 8 × 11.5 | 385 | B41827A3477M*** |
| 1000 | 10 × 12.5 | 650 | B41827A3108M*** |
| 2200 | 10 × 20 | 1082 | B41827A3228M*** |
| 3300 | 12.5 × 20 | 1436 | B41827A3338M*** |
| 4700 | 12.5 × 25 | 1783 | B41827A3478M*** |
| 10000 | 16 × 35.5 | 2700 | B41827A3109M*** |
| 15000 | 18 × 35.5 | 3100 | B41827A3159M*** |
| $V_R$ = 16 V DC | | | |
| 100 | 5 × 11 | 160 | B41827A4107M*** |
| 220 | 6.3 × 11 | 261 | B41827A4227M*** |
| 330 | 8 × 11.5 | 373 | B41827A4337M*** |
| 470 | 8 × 11.5 | 446 | B41827A4477M*** |
| 1000 | 10 × 16 | 790 | B41827A4108M*** |

**Composition of ordering code**

*** = Version

000 = for standard leads, bulk
001 = for kinked leads, bulk
002 = for cut leads, bulk
016 = for taped leads, Ammo pack, lead spacing F = 2.0 mm (for ∅ 5 mm)
007 = for taped leads, Ammo pack, lead spacing F = 2.5 mm for ∅ 5 ... 6.3 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for ∅ 5 ... 12.5 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 25 ... 16 × 31.5 mm)



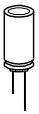
## Technical data and ordering codes – B41827

| $C_R$ 120 Hz, 20 °C µF | Case dimensions d × l mm | $I_{AC,R}$ 120 Hz, 85 °C mA | Ordering code (composition see below) |
|---|---|---|---|
| $V_R$ = 16 V DC | | | |
| 2200 | 12.5 × 20 | 1310 | B41827A4228M*** |
| 3300 | 12.5 × 25 | 1695 | B41827A4338M*** |
| 4700 | 16 × 25 | 2100 | B41827A4478M*** |
| 10000 | 18 × 35.5 | 2980 | B41827A4109M*** |
| $V_R$ = 25 V DC | | | |
| 47 | 5 × 11 | 108 | B41827A5476M*** |
| 100 | 6.3 × 11 | 192 | B41827A5107M*** |
| 220 | 8 × 11.5 | 335 | B41827A5227M*** |
| 330 | 10 × 12.5 | 446 | B41827A5337M*** |
| 470 | 10 × 12.5 | 547 | B41827A5477M*** |
| 1000 | 10 × 20 | 962 | B41827A5108M*** |
| 2200 | 12.5 × 25 | 1560 | B41827A5228M*** |
| 3300 | 16 × 25 | 1985 | B41827A5338M*** |
| 4700 | 16 × 31.5 | 2455 | B41827A5478M*** |
| $V_R$ = 35 V DC | | | |
| 33 | 5 × 11 | 102 | B41827A7336M*** |
| 47 | 5 × 11 | 130 | B41827A7476M*** |
| 100 | 6.3 × 11 | 212 | B41827A7107M*** |
| 220 | 10 × 12.5 | 390 | B41827A7227M*** |
| 330 | 10 × 12.5 | 495 | B41827A7337M*** |
| 470 | 10 × 16 | 652 | B41827A7477M*** |
| 1000 | 12.5 × 25 | 1158 | B41827A7108M*** |
| 2200 | 16 × 25 | 1810 | B41827A7228M*** |
| 3300 | 16 × 31.5 | 2293 | B41827A7338M*** |
| 4700 | 18 × 35.5 | 2710 | B41827A7478M*** |

**Composition of ordering code**

*** = Version

- 000 = for standard leads, bulk
- 001 = for kinked leads, bulk
- 002 = for cut leads, bulk
- 016 = for taped leads, Ammo pack, lead spacing F = 2.0 mm (for ∅ 5 mm)
- 007 = for taped leads, Ammo pack, lead spacing F = 2.5 mm for ∅ 5 ... 6.3 mm)
- 006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
- 008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for ∅ 5 ... 12.5 mm)
- 009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 25 ... 16 × 31.5 mm)





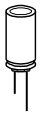
## Technical data and ordering codes – B41827

| $C_R$ 120 Hz, 20 °C µF | Case dimensions d × l mm | $I_{AC,R}$ 120 Hz, 85 °C mA | Ordering code (composition see below) |
|---|---|---|---|
| $V_R$ = 50 V DC | | | |
| 10 | 5 × 11 | 58 | B41827A6106M*** |
| 22 | 5 × 11 | 85 | B41827A6226M*** |
| 33 | 5 × 11 | 117 | B41827A6336M*** |
| 47 | 6.3 × 11 | 155 | B41827A6476M*** |
| 100 | 8 × 11.5 | 260 | B41827A6107M*** |
| 220 | 10 × 12.5 | 430 | B41827A6227M*** |
| 330 | 10 × 16 | 510 | B41827A6337M*** |
| 470 | 10 × 20 | 700 | B41827A6477M*** |
| 1000 | 16 × 20 | 1100 | B41827A6108M*** |
| 2200 | 16 × 31.5 | 1540 | B41827A6228M*** |
| $V_R$ = 63 V DC | | | |
| 10 | 5 × 11 | 60 | B41827A8106M*** |
| 22 | 6.3 × 11 | 100 | B41827A8226M*** |
| 33 | 6.3 × 11 | 140 | B41827A8336M*** |
| 47 | 6.3 × 11 | 170 | B41827A8476M*** |
| 100 | 10 × 12.5 | 300 | B41827A8107M*** |
| 220 | 10 × 20 | 475 | B41827A8227M*** |
| 330 | 12.5 × 20 | 710 | B41827A8337M*** |
| 470 | 12.5 × 25 | 900 | B41827A8477M*** |
| 1000 | 16 × 31.5 | 1300 | B41827A8108M*** |
| $V_R$ = 100 V DC | | | |
| 0.47 | 5 × 11 | 13 | B41827A9474M*** |
| 1.0 | 5 × 11 | 20 | B41827A9105M*** |
| 2.2 | 5 × 11 | 29 | B41827A9225M*** |
| 3.3 | 5 × 11 | 36 | B41827A9335M*** |
| 4.7 | 5 × 11 | 43 | B41827A9475M*** |
| 10 | 6.3 × 11 | 75 | B41827A9106M*** |
| 22 | 8 × 11.5 | 130 | B41827A9226M*** |

**Composition of ordering code**

*** = Version

000 = for standard leads, bulk
001 = for kinked leads, bulk
002 = for cut leads, bulk
016 = for taped leads, Ammo pack, lead spacing F = 2.0 mm (for ∅ 5 mm)
007 = for taped leads, Ammo pack, lead spacing F = 2.5 mm for ∅ 5 ... 6.3 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for ∅ 5 ... 12.5 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 25 ... 16 × 31.5 mm)



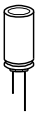
## Technical data and ordering codes – B41827

| $C_R$<br>120 Hz, 20 °C<br>µF | Case dimensions<br>d × l<br>mm | $I_{AC,R}$<br>120 Hz, 85 °C<br>mA | Ordering code<br>(composition see below) |
|---|---|---|---|
| $V_R$ = 100 V DC | | | |
| 33 | 10 × 12.5 | 180 | B41827A9336M*** |
| 47 | 10 × 12.5 | 230 | B41827A9476M*** |
| 100 | 10 × 20 | 370 | B41827A9107M*** |
| 220 | 12.5 × 25 | 620 | B41827A9227M*** |
| 330 | 16 × 25 | 760 | B41827A9337M*** |
| 470 | 16 × 31.5 | 1000 | B41827A9477M*** |
| 1000 | 18 × 40 | 1380 | B41827A9108M*** |

**Composition of ordering code**

*** = Version

000 = for standard leads, bulk
001 = for kinked leads, bulk
002 = for cut leads, bulk
016 = for taped leads, Ammo pack, lead spacing F = 2.0 mm (for ∅ 5 mm)
007 = for taped leads, Ammo pack, lead spacing F = 2.5 mm for ∅ 5 ... 6.3 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for ∅ 5 ... 12.5 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 25 ... 16 × 31.5 mm)



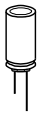
## Technical data and ordering codes – B43827

| $C_R$ 120 Hz, 20 °C µF | Case dimensions d × l mm | $I_{AC,R}$ 120 Hz, 85 °C mA | Ordering code (composition see below) |
|---|---|---|---|
| $V_R$ = 160 V DC | | | |
| 0.47 | 5 × 11 | 15 | B43827A1474M*** |
| 1.0 | 5 × 11 | 22 | B43827A1105M*** |
| 2.2 | 5 × 11 | 33 | B43827A1225M*** |
| 3.3 | 6.3 × 11 | 40 | B43827A1335M*** |
| 4.7 | 6.3 × 11 | 49 | B43827A1475M*** |
| 10 | 8 × 11.5 | 80 | B43827A1106M*** |
| 22 | 10 × 16 | 152 | B43827A1226M*** |
| 33 | 10 × 20 | 203 | B43827A1336M*** |
| 47 | 12.5 × 25 | 268 | B43827A1476M*** |
| 100 | 16 × 25 | 423 | B43827A1107M*** |
| 220 | 16 × 35.5 | 786 | B43827A1227M*** |
| 330 | 18 × 35.5 | 945 | B43827A1337M*** |
| $V_R$ = 200 V DC | | | |
| 3.3 | 6.3 × 11 | 40 | B43827A2335M*** |
| 4.7 | 8 × 11.5 | 56 | B43827A2475M*** |
| 10 | 10 × 12.5 | 95 | B43827A2106M*** |
| 22 | 10 × 20 | 170 | B43827A2226M*** |
| 33 | 12.5 × 20 | 225 | B43827A2336M*** |
| 47 | 12.5 × 20 | 267 | B43827A2476M*** |
| 100 | 16 × 25 | 490 | B43827A2107M*** |
| 220 | 18 × 35.5 | 815 | B43827A2227M*** |
| $V_R$ = 250 V DC | | | |
| 0.47 | 5 × 11 | 15 | B43827F2474M*** |
| 1.0 | 5 × 11 | 22 | B43827F2105M*** |
| 2.2 | 6.3 × 11 | 33 | B43827F2225M*** |
| 3.3 | 6.3 × 11 | 47 | B43827F2335M*** |
| 4.7 | 8 × 11.5 | 56 | B43827F2475M*** |
| 10 | 10 × 12.5 | 103 | B43827F2106M*** |

**Composition of ordering code**

*** = Version

000 = for standard leads, bulk
001 = for kinked leads, bulk
002 = for cut leads, bulk
016 = for taped leads, Ammo pack, lead spacing F = 2.0 mm (for ∅ 5 mm)
007 = for taped leads, Ammo pack, lead spacing F = 2.5 mm for ∅ 5 ... 6.3 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for ∅ 5 ... 12.5 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 25 ... 16 × 31.5 mm)



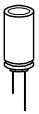
## Technical data and ordering codes – B43827

| $C_R$<br>120 Hz, 20 °C<br>µF | Case dimensions<br>d × l<br>mm | $I_{AC,R}$<br>120 Hz, 85 °C<br>mA | Ordering code<br>(composition see below) |
|---|---|---|---|
| $V_R$ = 250 V DC | | | |
| 22 | 10 × 20 | 185 | B43827F2226M*** |
| 33 | 12.5 × 25 | 225 | B43827F2336M*** |
| 47 | 12.5 × 25 | 268 | B43827F2476M*** |
| 100 | 16 × 31.5 | 525 | B43827F2107M*** |
| $V_R$ = 350 V DC | | | |
| 1.0 | 6.3 × 11 | 22 | B43827A4105M*** |
| 2.2 | 8 × 11.5 | 38 | B43827A4225M*** |
| 3.3 | 10 × 12.5 | 54 | B43827A4335M*** |
| 4.7 | 10 × 12.5 | 65 | B43827A4475M*** |
| 10 | 10 × 20 | 115 | B43827A4106M*** |
| 22 | 12.5 × 25 | 185 | B43827A4226M*** |
| 33 | 16 × 25 | 276 | B43827A4336M*** |
| 47 | 16 × 35.5 | 334 | B43827A4476M*** |
| 100 | 18 × 40 | 510 | B43827A4107M*** |
| $V_R$ = 400 V DC | | | |
| 0.47 | 6.3 × 11 | 15 | B43827A9474M*** |
| 1.0 | 6.3 × 11 | 23 | B43827A9105M*** |
| 2.2 | 8 × 11.5 | 40 | B43827A9225M*** |
| 3.3 | 10 × 12.5 | 55 | B43827A9335M*** |
| 4.7 | 10 × 16 | 67 | B43827A9475M*** |
| 10 | 12.5 × 20 | 118 | B43827A9106M*** |
| 22 | 16 × 25 | 200 | B43827A9226M*** |
| 33 | 16 × 25 | 280 | B43827A9336M*** |
| 47 | 16 × 35.5 | 362 | B43827A9476M*** |

**Composition of ordering code**

*** = Version

- 000 = for standard leads, bulk
- 001 = for kinked leads, bulk
- 002 = for cut leads, bulk
- 016 = for taped leads, Ammo pack, lead spacing F = 2.0 mm (for ∅ 5 mm)
- 007 = for taped leads, Ammo pack, lead spacing F = 2.5 mm for ∅ 5 ... 6.3 mm)
- 006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
- 008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for ∅ 5 ... 12.5 mm)
- 009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 25 ... 16 × 31.5 mm)



**B43827**

**Standard series – 85 °C**

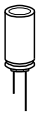
### Technical data and ordering codes – B43827

| $C_R$<br>120 Hz, 20 °C<br>µF | Case dimensions<br>d × l<br>mm | $I_{AC,R}$<br>120 Hz, 85 °C<br>mA | Ordering code<br>(composition see below) |
|---|---|---|---|
| $V_R$ = 450 V DC | | | |
| 0.47 | 8 × 11.5 | 18 | B43827A5474M*** |
| 1.0 | 8 × 11.5 | 24 | B43827A5105M*** |
| 2.2 | 10 × 12.5 | 36 | B43827A5225M*** |
| 3.3 | 10 × 16 | 44 | B43827A5335M*** |
| 4.7 | 10 × 20 | 56 | B43827A5475M*** |
| 10 | 12.5 × 20 | 95 | B43827A5106M*** |
| 22 | 16 × 25 | 170 | B43827A5226M*** |
| 33 | 16 × 31.5 | 235 | B43827A5336M*** |
| 47 | 18 × 40 | 302 | B43827A5476M*** |

**Composition of ordering code**

*** = Version

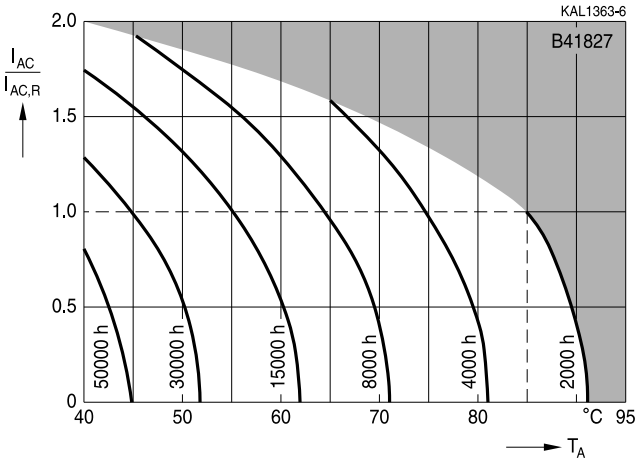
000 = for standard leads, bulk
001 = for kinked leads, bulk
002 = for cut leads, bulk
016 = for taped leads, Ammo pack, lead spacing F = 2.0 mm (for ∅ 5 mm)
007 = for taped leads, Ammo pack, lead spacing F = 2.5 mm for ∅ 5 ... 6.3 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for ∅ 5 ... 12.5 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 25 ... 16 × 31.5 mm)



**Useful life**

depending on ambient temperature $T_A$ under ripple current operating conditions[1)]

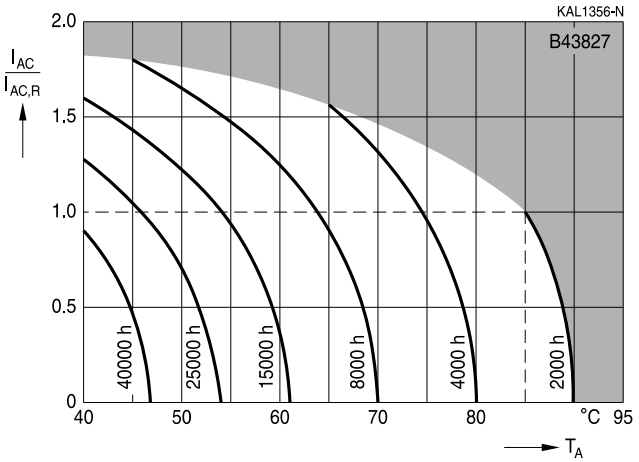
B41827




**Useful life**

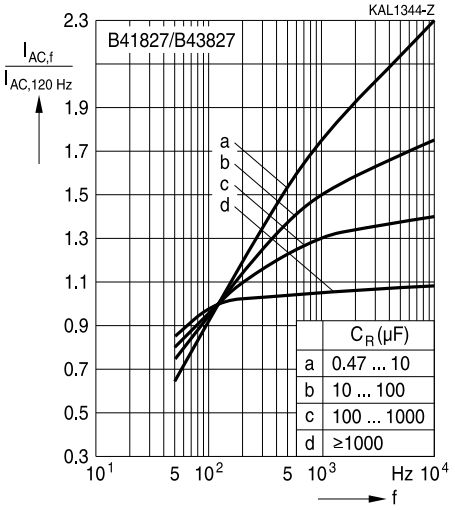
depending on ambient temperature $T_A$ under ripple current operating conditions[1)]

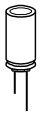
B43827




1) Refer to chapter "General technical information, 5.3 Calculation of useful life" for an explanation on how to interpret the useful life graphs.

**Frequency factor of permissible ripple current $I_{AC}$ versus frequency f**



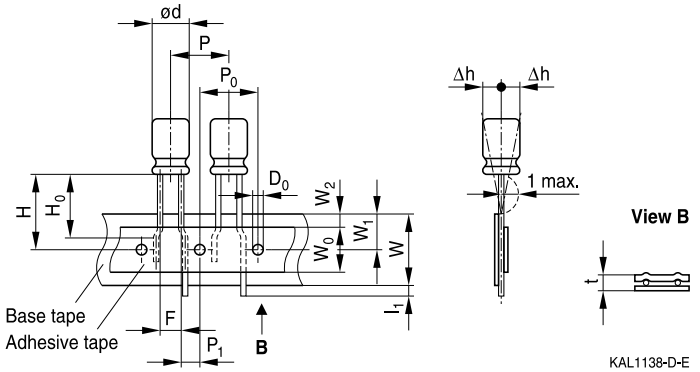


## Taping, packing and lead configurations

### Taping

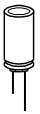
Single-ended capacitors are available taped in Ammo pack from diameter 4 to 18 mm as follows:
Lead spacing F = 2.0 mm (∅ d = 4 … 5 mm)
Lead spacing F = 2.5 mm (∅ d = 4 … 6.3 mm)
Lead spacing F = 3.5 mm (∅ d = 8 mm)
Lead spacing F = 5.0 mm (∅ d = 4 … 12.5 mm)
Lead spacing F = 7.5 mm (∅ d = 16 ... 18 mm).

**Lead spacing 2.0 mm (∅ d = 4 ... 5 mm)**
Last 3 digits of ordering code: 016



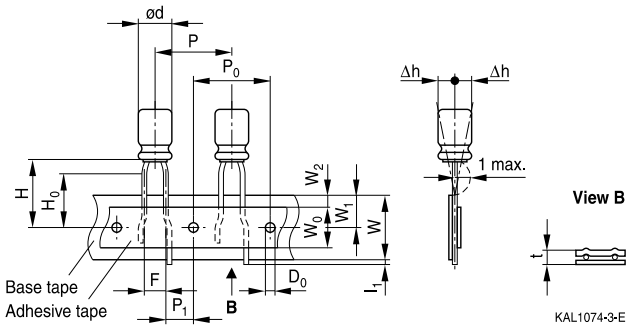

**Dimensions in mm**

| ∅ d | F | H | W | $W_0$ | $W_1$ | $W_2$ | P | $P_0$ | $P_1$ | $I_1$ | t | Δh | $D_0$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 ... 5 | 2.0 | 18.5 | 18.0 | 7.0 | 9.0 | 3.0 | 12.7 | 12.7 | 5.10 | 1.0 | 0.7 | 1 | 4.0 |
| | +0.8 −0.2 | ±0.75 | ±0.5 | min. | ±0.5 | max. | ±1.0 | ±0.3 | ±0.7 | max. | ±0.2 | ±1.0 | ±0.2 |



**Lead spacing 2.5 mm (∅ d = 4 ... 6.3 mm)**

Last 3 digits of ordering code: 007

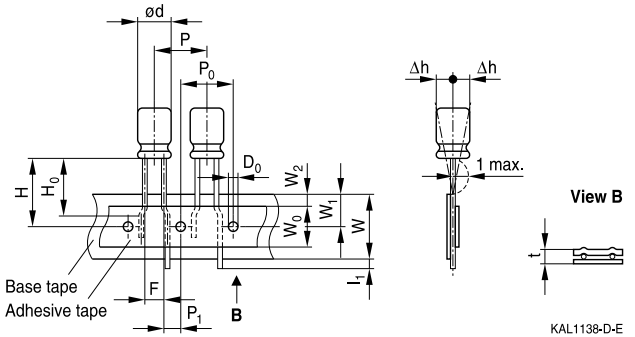



**Dimensions in mm**

| ∅ d | F | H | W | $W_0$ | $W_1$ | $W_2$ | $H_0$ | P | $P_0$ | $P_1$ | $l_1$ | t | Δh | $D_0$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 ... 6.3 | 2.5 | 18.5 | 18.0 | 5.5 | 9.0 | 1.5 | 16.0 | 12.7 | 12.7 | 5.1 | 1.0 | 0.7 | 1.0 | 4.0 |
| Toler-rance | +0.8 −0.2 | ±0.75 | ±0.5 | min. | ±0.5 | max. | ±0.5 | ±1.0 | ±0.2 | ±0.5 | max. | ±0.2 | max. | ±0.2 |

**Lead spacing 3.5 mm (∅ d = 8 mm)**

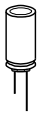
Last 3 digits of ordering code: 006




**Dimensions in mm**

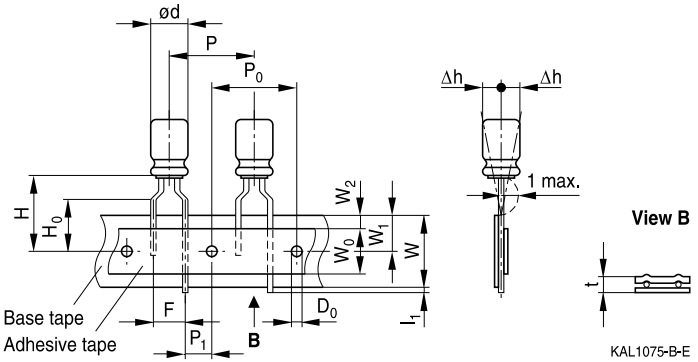
| ∅ d | F | H | W | $W_0$ | $W_1$ | $W_2$ | P | $P_0$ | $P_1$ | $l_1$ | t | Δh | $D_0$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 3.5 | 18.5 | 18.0 | 10 | 9.0 | 3.0 | 12.7 | 12.7 | 4.6 | 1.0 | 0.7 | 1.0 | 4.0 |
| Toler-rance | +0.8 −0.2 | ±1.0 | ±0.5 | min. | ±0.5 | max. | ±1.0 | ±0.3 | ±0.6 | max. | ±0.2 | max. | ±0.2 |

Leads can also run straight through the taping area. Taping is available up to dimensions $d \times l = 8 \times 15$ mm.



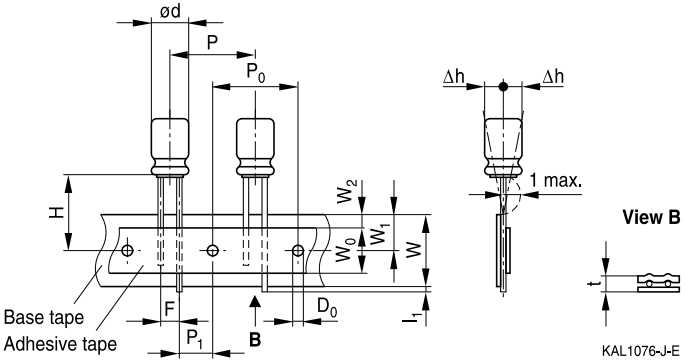
**Lead spacing 5.0 mm (∅ d = 4 ... 8 mm)**

Last 3 digits of ordering code: 008




**Lead spacing 5.0 mm (∅ d = 10 ... 12.5 mm)**

Last 3 digits of ordering code: 008




**Dimensions in mm**

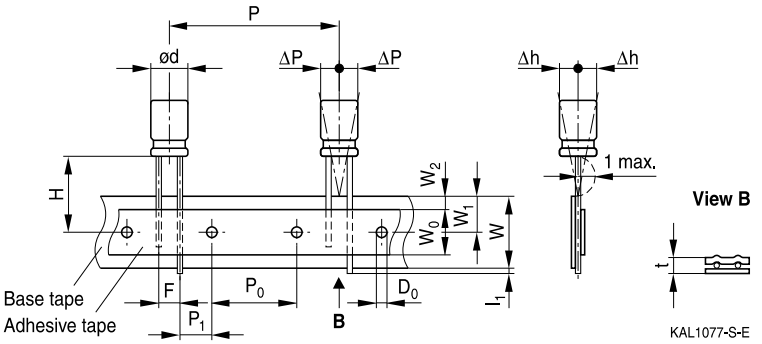
| ∅ d | F | H | W | $W_0$ | $W_1$ | $W_2$ | $H_0$ | P | $P_0$ | $P_1$ | $l_1$ | t | Δh | $D_0$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 ... 6.3 | 5.0 | 18.5 | 18.0 | 5.5 | 9.0 | 1.5 | 16.0 | 12.7 | 12.7 | 3.85 | 1.0 | 0.6 | 1.0 | 4.0 |
| 8 | | 20.0 | | 10.0 | | | 16.0 | 12.7 | 12.7 | 3.85 | | | | |
| 10 | 5.0 | 19.0 | 18.0 | 12.5 | 9.0 | 1.5 | – | 12.7 | 12.7 | 3.85 | 1.0 | 0.6 | 1.0 | 4.0 |
| 12.5 | | 19.0 | | 12.5 | | | – | 15.0 | 15.0 | 5.0 | | | | |
| Tolerance | +0.8 −0.2 | ±0.75 | ±0.5 | min. | ±0.5 | max. | ±0.5 | ±1.0 | ±0.2 | ±0.5 | max. | +0.3 −0.2 | max. | ±0.2 |

Taping is available up to dimensions d × l = 10 × 31.5 mm and 12.5 × 25 mm.

Taping is not available for d × l = 8 × 20 mm.

**Lead spacing 7.5 mm (∅ d = 16 ...18 mm)**

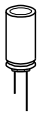
Last 3 digits of ordering code: 009




**Dimensions in mm**

| ∅ d | F | H | W | $W_0$ | $W_1$ | $W_2$ | P | $P_0$ | $P_1$ | $l_1$ | t | ΔP | Δh | $D_0$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16<br>18 | 7.5 | 18.5 | 18.0 | 12.5 | 9.0 | 1.5 | 30.0 | 15.0 | 3.75 | 1.0 | 0.7 | 0 | 0 | 4.0 |
| Toler-ance | ±0.8 | −0.5<br>+0.75 | ±0.5 | min. | ±0.5 | max. | ±1.0 | ±0.2 | ±0.5 | max. | ±0.2 | ±1.0 | ±1.0 | ±0.2 |

Taping is available up to dimensions d × l = 16 × 31.5 mm and 18 × 31.5 mm.



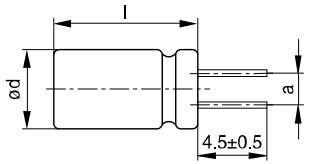
### Cut or kinked leads

Single-ended capacitors are available with cut or kinked leads. Other lead configurations also available upon request.

### Cut leads (Chapter A)

Available for series B41002, B41022, B41044, B41827, B41828, B43044, B43082, B43086, B43088, B43827, B43828.

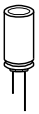
Last 3 digits of ordering code: 002




KAL1086-R

| Case size d x l (mm) | Dimensions (mm) a ±0.5 |
|---|---|
| 4 x 7 | 1.5 |
| 5 x 7 | 2.0 |
| 5 x 11 | 2.0 |
| 6.3 x 7 | 2.5 |
| 6.3 x 11 | 2.5 |
| 8 x 7 | 3.5 |
| 8 x 11.5 | 3.5 |
| 8 x 15 | 3.5 |
| 8 x 20 | 3.5 |
| 10 x 12.5 | 5.0 |
| 10 x 16 | 5.0 |
| 10 x 20 | 5.0 |
| 10 x 25 | 5.0 |
| 10 x 31.5 | 5.0 |

| Case size d x l (mm) | Dimensions (mm) a ±0.5 |
|---|---|
| 12.5 x 16 | 5.0 |
| 12.5 x 20 | 5.0 |
| 12.5 x 25 | 5.0 |
| 12.5 x 31.5 | 5.0 |
| 12.5 x 35.5 | 5.0 |
| 12.5 x 40 | 5.0 |
| 16 x 20 | 7.5 |
| 16 x 25 | 7.5 |
| 16 x 31.5 | 7.5 |
| 16 x 35.5 | 7.5 |
| 16 x 40 | 7.5 |
| 18 x 20 | 7.5 |
| 18 x 25 | 7.5 |
| 18 x 31.5 | 7.5 |
| 18 x 35.5 | 7.5 |
| 18 x 40 | 7.5 |

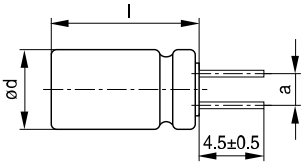


**Cut leads (Chapter B)**

Available for series B41858, B41859, B41863, B41866, B41868, B41888, B41890, B41896, B42824, B42851, B43866, B43867, B43890, B43896.

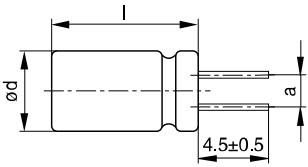
Last 3 digits of ordering code: 002

**With stand-off rubber seal**



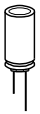

KAL1085-I

**With flat rubber seal**




KAL1086-R

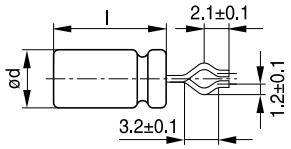
| Case size<br>d × l (mm) | Dimensions (mm)<br>a ±0.5 |
|---|---|
| 10 × 12.5 | 5.0 |
| 10 × 16 | 5.0 |
| 10 × 20 | 5.0 |
| 12.5 × 20 | 5.0 |
| 12.5 × 25 | 5.0 |
| 16 × 20 | 7.5 |
| 16 × 25 | 7.5 |
| 16 × 31.5 | 7.5 |
| 16 × 35.5 | 7.5 |
| 18 × 20 | 7.5 |
| 18 × 25 | 7.5 |
| 18 × 31.5 | 7.5 |
| 18 × 35 | 7.5 |
| 18 × 40 | 7.5 |



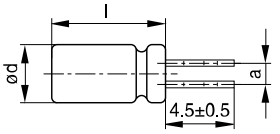
**Kinked leads (Chapter A)**

Available for series B41002, B41022, B41044, B41827, B41828, B43044, B43082, B43086, B43088, B43827, B43828.

Last 3 digits of ordering code: 001



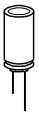

KAL1137-5




KAL1084-A

| Case size d x l (mm) | Dimensions (mm) a ±0.5 |
|---|---|
| 4 x 7 | 1.5 |
| 5 x 7 | 2.0 |
| 5 x 11 | 2.0 |
| 6.3 x 7 | 2.5 |
| 6.3 x 11 | 2.5 |
| 8 x 7 | 3.5 |
| 8 x 11.5 | 3.5 |
| 8 x 15 | 3.5 |
| 8 x 20 | 3.5 |
| 10 x 12.5 | 5.0 |
| 10 x 16 | 5.0 |
| 10 x 20 | 5.0 |
| 10 x 25 | 5.0 |
| 10 x 31.5 | 5.0 |

| Case size d x l (mm) | Dimensions (mm) a ±0.5 |
|---|---|
| 12.5 x 16 | 5.0 |
| 12.5 x 20 | 5.0 |
| 12.5 x 25 | 5.0 |
| 12.5 x 31.5 | 5.0 |
| 12.5 x 35.5 | 5.0 |
| 12.5 x 40 | 5.0 |
| 16 x 20 | 7.5 |
| 16 x 25 | 7.5 |
| 16 x 31.5 | 7.5 |
| 16 x 35.5 | 7.5 |
| 16 x 40 | 7.5 |
| 18 x 20 | 7.5 |
| 18 x 25 | 7.5 |
| 18 x 31.5 | 7.5 |
| 18 x 35.5 | 7.5 |
| 18 x 40 | 7.5 |

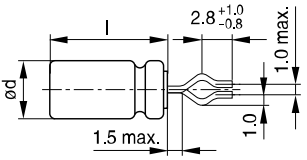


**Kinked leads (Chapter B)**

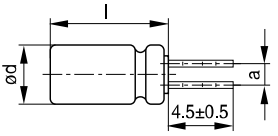
Available for series B41858, B41859, B41863, B41866, B41868, B41888, B41890, B41896, B42824, B42851, B43866, B43867, B43890, B43896.

Last 3 digits of ordering code: 001

**With stand-off rubber seal**

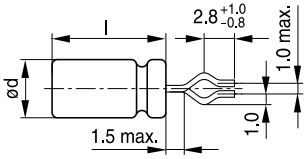



KAL1081-K

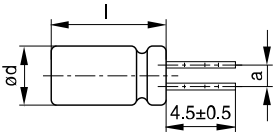



KAL1083-2

**With flat rubber seal**

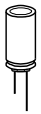



KAL1082-T




KAL1084-A

| Case size d × l (mm) | Dimensions (mm) a ±0.5 |
|---|---|
| 10 × 20 | 5.0 |
| 12.5 × 20 | 5.0 |
| 12.5 × 25 | 5.0 |
| 16 × 20 | 7.5 |
| 16 × 25 | 7.5 |
| 16 × 31.5 | 7.5 |
| 16 × 35.5 | 7.5 |
| 18 × 20 | 7.5 |
| 18 × 25 | 7.5 |
| 18 × 31.5 | 7.5 |
| 18 × 35 | 7.5 |
| 18 × 40 | 7.5 |



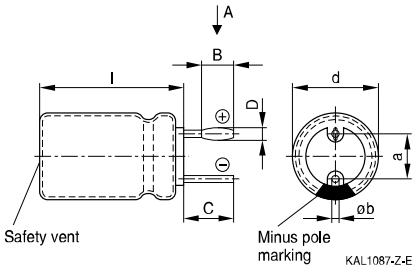
**PAPR leads** (Protection Against Polarity Reversal)

These lead configurations ensure correct placement of the capacitor on the PCB with regard to polarity. PAPR leads are available for diameters from 10 mm up to 18 mm.
There are three configurations available: Crimped leads, J leads, bent 90° leads

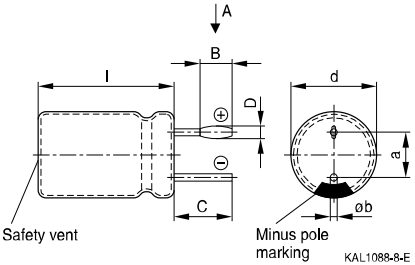
Available for series B41858, B41859, B41863, B41866, B41868, B41888, B41890, B41896, B42824, B42851, B43866, B43867, B43890, B43896.

**Crimped leads**
Last 3 digits of ordering code: 003

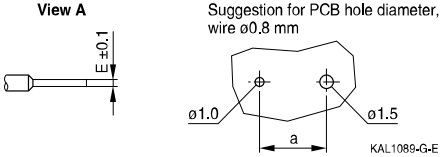
**With stand-off rubber seal**

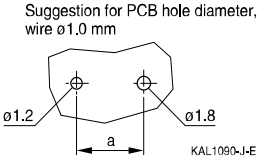



**With flat rubber seal**

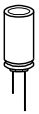



**Suggestion for PCB hole diameter**



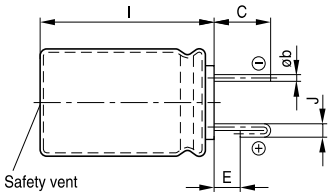




| Case size | Dimensions (mm) | | | | | |
|---|---|---|---|---|---|---|
| d × l (mm) | B ±0.2 | C ±0.5 | D ±0.1 | E ±0.1 | a ±0.5 | ∅b |
| 16 × 20 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.05 |
| 16 × 25 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.05 |
| 16 × 31.5 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.05 |
| 16 × 35.5 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.05 |
| 18 × 20 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.1 |
| 18 × 25 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.1 |
| 18 × 31.5 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.1 |
| 18 × 35 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.1 |
| 18 × 40 | 1.5 | 3.0 | 1.3 | 0.3 | 7.5 | 0.8 ±0.1 |



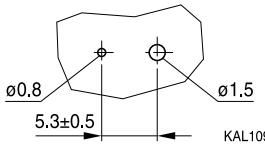
**J leads**

Last 3 digits of ordering code: 004

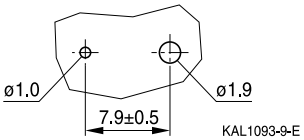



**Suggestion for PCB hole diameter**

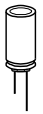
Suggestion for PCB hole diameter, wire ø0.6 mm




Suggestion for PCB hole diameter, wire ø0.8 mm

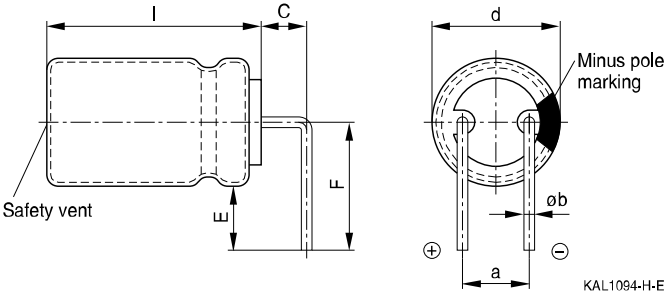



| Case size | Dimensions (mm) | | | | |
|---|---|---|---|---|---|
| d × l (mm) | C ±0.5 | E ±0.5 | J ±0.2 | a ±0.5 | ∅b |
| 10 × 12.5 | 3.2 | 0.7 | 1.2 | 5.0 | 0.6 ±0.05 |
| 10 × 16 | 3.2 | 0.7 | 1.2 | 5.0 | 0.6 ±0.05 |
| 10 × 20 | 3.2 | 0.7 | 1.2 | 5.0 | 0.6 ±0.05 |
| 12.5 × 20 | 3.2 | 0.7 | 1.2 | 5.0 | 0.6 ±0.05 |
| 12.5 × 25 | 3.2 | 0.7 | 1.2 | 5.0 | 0.6 ±0.05 |
| 16 × 20 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.05 |
| 16 × 25 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.05 |
| 16 × 31.5 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.05 |
| 16 × 35.5 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.05 |
| 18 × 20 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.1 |
| 18 × 25 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.1 |
| 18 × 31.5 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.1 |
| 18 × 35 | 3.5 | 0.7 | 1.6 | 7.5 | 0.8 ±0.1 |



**Bent 90° leads for horizontal mounting pinning**

Last 3 digits of ordering code: 012



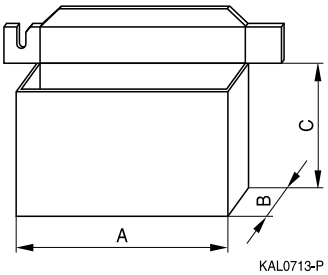

| Case size | Dimensions (mm) | | | | |
|---|---|---|---|---|---|
| d × l (mm) | C ±0.5 | E ±0.5 | F ±0.5 | a ±0.5 | ∅b |
| 16 × 20 | 4.0 | 4.0 | 12.0 | 7.5 | 0.8 ±0.05 |
| 16 × 25 | 4.0 | 4.0 | 12.0 | 7.5 | 0.8 ±0.05 |
| 16 × 31.5 | 4.0 | 4.0 | 12.0 | 7.5 | 0.8 ±0.05 |
| 16 × 35.5 | 4.0 | 4.0 | 12.0 | 7.5 | 0.8 ±0.05 |
| 18 × 20 | 4.0 | 4.0 | 13.0 | 7.5 | 0.8 ±0.1 |
| 18 × 25 | 4.0 | 4.0 | 13.0 | 7.5 | 0.8 ±0.1 |
| 18 × 31.5 | 4.0 | 4.0 | 13.0 | 7.5 | 0.8 ±0.1 |
| 18 × 35 | 4.0 | 4.0 | 13.0 | 7.5 | 0.8 ±0.1 |
| 18 × 40 | 4.0 | 4.0 | 13.0 | 7.5 | 0.8 ±0.1 |

Bent leads for diameter 12.5 mm available upon request.

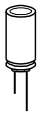
## Packing units and box dimensions

### Ammo pack

Valid for series B41002, B41022, B41044, B41827, B41828, B43044, B43082, B43086, B43088, B43827, B43828.

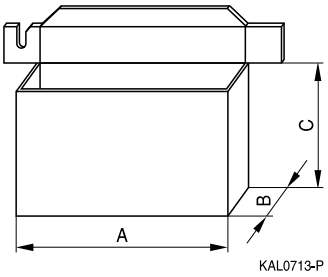



| Case size d × l | Dimensions (mm) | | | Packing units |
|---|---|---|---|---|
| mm | $A_{max}$ | $B_{max}$ | $C_{max}$ | pcs. |
| 4 × 7 | 330 | 50 | 196 | 2000 |
| 5 × 7 | 330 | 50 | 226 | 2000 |
| 5 × 11 | 330 | 50 | 226 | 2000 |
| 6.3 × 7 | 330 | 50 | 286 | 2000 |
| 6.3 × 11 | 330 | 50 | 286 | 2000 |
| 8 × 7 | 330 | 50 | 246 | 1000 |
| 8 × 11.5 | 330 | 50 | 246 | 1000 |
| 8 × 15 | 330 | 50 | 246 | 500 |
| 10 × 12.5 | 330 | 50 | 196 | 500 |
| 10 × 16 | 330 | 54 | 196 | 500 |
| 10 × 20 | 330 | 58 | 196 | 500 |
| 12.5 × 20 | 341 | 60 | 272 | 500 |
| 12.5 × 25 | 341 | 65 | 272 | 500 |
| 16 × 25 | 320 | 65 | 270 | 300 |
| 16 × 31.5 | 315 | 65 | 275 | 300 |
| 18 × 20 | 315 | 65 | 275 | 250 |
| 18 × 25 | 315 | 65 | 275 | 250 |
| 18 × 31.5 | 315 | 65 | 275 | 250 |

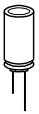


**Ammo pack**

Valid for series B41858, B41859, B41863, B41866, B41868, B41888, B41890, B41896, B42824, B42851, B43866, B43867, B43890, B43896.



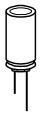

| Case size d × l | Dimensions (mm) | | | Packing units |
|---|---|---|---|---|
| mm | $A_{max}$ | $B_{max}$ | $C_{max}$ | pcs. |
| 8 × 11.5 | 345 | 55 | 240 | 1000 |
| 10 × 12.5 | 345 | 55 | 280 | 750 |
| 10 × 16 | 345 | 60 | 200 | 500 |
| 10 × 20 | 345 | 60 | 200 | 500 |
| 12.5 × 20 | 345 | 65 | 280 | 500 |
| 12.5 × 25 | 345 | 65 | 280 | 500 |
| 16 × 20 | 315 | 65 | 275 | 300 |
| 16 × 25 | 315 | 65 | 275 | 300 |
| 16 × 31.5 | 315 | 65 | 275 | 300 |
| 18 × 20 | 315 | 65 | 275 | 250 |
| 18 × 25 | 315 | 65 | 275 | 250 |
| 18 × 31.5 | 315 | 65 | 275 | 250 |



**Overview of packing units and code numbers for case sizes 4 x 7 ... 16 x 40**

Valid for series B41002, B41022, B41044, B41827, B41828, B43044, B43082, B43086, B43088, B43827, B43828.

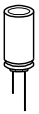
| Case size d x l mm | Standard, bulk pcs. | Taped, Ammo pack pcs. | | | Kinked leads, bulk pcs. | Cut leads, bulk pcs. |
|---|---|---|---|---|---|---|
| 4 x 7 | 10000 | 2000 | | | 15000 | 15000 |
| 5 x 7 | 7500 | 2000 | | | 10000 | 10000 |
| 5 x 11 | 5000 | 2000 | | | 10000 | 10000 |
| 6.3 x 7 | 5000 | 2000 | | | 10000 | 10000 |
| 6.3 x 11 | 5000 | 2000 | | | 5000 | 5000 |
| 8 x 7 | 5000 | 1000 | | | 5000 | 5000 |
| 8 x 11.5 | 2500 | 1000 | | | 4000 | 4000 |
| 8 x 15 | 2000 | 1000 | | | 2500 | 2500 |
| 8 x 20 | 1500 | – | | | 2000 | 2000 |
| 10 x 12.5 | 2000 | 500 | | | 2500 | 2500 |
| 10 x 16 | 1500 | 500 | | | 2000 | 2000 |
| 10 x 20 | 1000 | 500 | | | 1500 | 1500 |
| 10 x 25 | 1000 | 500 | | | 1250 | 1250 |
| 12.5 x 16 | 750 | 500 | | | 1000 | 1000 |
| 12.5 x 20 | 750 | 500 | | | 500 | 500 |
| 12.5 x 25 | 750 | 500 | | | 500 | 500 |
| 12.5 x 31.5 | 500 | – | | | 750 | 750 |
| 12.5 x 35.5 | 500 | – | | | 750 | 750 |
| 12.5 x 40 | 500 | – | | | 750 | 750 |
| 16 x 20 | 375 | 300 | | | 500 | 500 |
| 16 x 25 | 375 | 300 | | | 500 | 500 |
| 16 x 31.5 | 250 | 300 | | | 375 | 375 |
| 16 x 35.5 | 250 | – | | | 375 | 375 |
| 16 x 40 | 250 | – | | | 375 | 375 |
| The last three digits of the complete ordering code state the lead configuration | **000** | Code | F (mm) | d (mm) | **001** | **002** |
| | | 006 | 3.5 | 8 | | |
| | | 007 | 2.5 | 4 ... 6.3 | | |
| | | 008 | 5.0 | 4 ... 12.5 | | |
| | | 009 | 7.5 | 16 ... 18 | | |
| | | 016 | 2.0 | 4 ... 5 | | |



**Overview of packing units and code numbers for case sizes 18 x 20 ... 18 x 40**

Valid for series B41002, B41022, B41044, B41827, B41828, B43044, B43082, B43086, B43088, B43827, B43828.

| Case size<br>d x l<br>mm | Standard,<br>bulk<br>pcs. | Taped,<br>Ammo pack<br>pcs. | | | Kinked leads,<br>bulk<br>pcs. | Cut leads,<br>bulk<br>pcs. |
|---|---|---|---|---|---|---|
| 18 x 20 | 250 | 250 | | | 100 | 100 |
| 18 x 25 | 250 | 250 | | | 100 | 100 |
| 18 x 31.5 | 250 | 250 | | | 100 | 100 |
| 18 x 35.5 | 250 | – | | | 100 | 100 |
| 18 x 40 | 250 | – | | | 100 | 100 |
| The last three digits of the complete ordering code state the lead configuration | **000** | Code | F (mm) | d (mm) | **001** | **002** |
| | | 009 | 7.5 | 16 ... 18 | | |

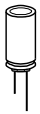


**Overview of packing units and code numbers for case sizes 8 × 11.5 ... 16 × 35.5**

Valid for series B41858, B41859, B41863, B41866, B41868, B41888, B41890, B41896, B42824, B42851, B43866, B43867, B43890, B43896.

| | | | | | | | PAPR | | |
|---|---|---|---|---|---|---|---|---|---|
| Case size d × l<br>mm | Standard, bulk<br>pcs. | Taped, Ammo pack<br>pcs. | | | Kinked leads, bulk<br>pcs. | Cut leads, bulk<br>pcs. | Crimped leads, blister<br>pcs. | J leads, blister<br>pcs. | Bent 90° leads, blister<br>pcs. |
| 8 × 11.5 | 1000 | 1000 | | | – | – | – | – | |
| 10 × 12.5 | 1000 | 750 | | | – | 1000 | – | 675 | |
| 10 × 16 | 1000 | 500 | | | – | 1000 | – | 675 | |
| 10 × 20 | 500 | 500 | | | 500 | 500 | – | 500 | |
| 12.5 × 20 | 350 | 500 | | | 350 | 350 | – | 300 | 1) |
| 12.5 × 25 | 250 | 500 | | | 500 | 500 | – | 225 | 1) |
| 12.5 × 30 | 200 | – | | | – | – | – | – | |
| 12.5 × 35 | 175 | – | | | – | – | – | – | |
| 12.5 × 40 | 175 | – | | | – | – | – | – | |
| 16 × 20 | 250 | 300 | | | 200 | 200 | 200 | 200 | 120 |
| 16 × 25 | 250 | 300 | | | 200 | 200 | 200 | 200 | 120 |
| 16 × 31.5 | 200 | 300 | | | 250 | 250 | 344 | 344 | 120 |
| 16 × 35.5 | 100 | – | | | 100 | 100 | 150 | 150 | 150 |
| The last three digits of the complete ordering code state the lead configuration | **000** | Code<br>**006**<br>**008**<br>**009** | F (mm)<br>3.5<br>5<br>7.5 | d (mm)<br>8<br>5...12.5<br>16...18 | **001** | **002** | **003** | **004** | **012** |

1) Available upon request



**Overview of packing units and code numbers for case sizes 18 × 20 ... 18 × 40**

Valid for series B41858, B41859, B41863, B41866, B41868, B41888, B41890, B41896, B42824, B42851, B43866, B43867, B43890, B43896.

| | | | | | | | **PAPR** | | |
|---|---|---|---|---|---|---|---|---|---|
| Case size d × l | Stan-dard, bulk | Taped, Ammo pack | | | Kinked leads, bulk | Cut leads, bulk | Crimped leads, blister | J leads, blister | Bent 90° leads, blister |
| mm | pcs. | pcs. | | | pcs. | pcs. | pcs. | pcs. | pcs. |
| 18 × 20 | 175 | 250 | | | 175 | 175 | 200 | 200 | 120 |
| 18 × 25 | 150 | 250 | | | 150 | 150 | 200 | 200 | 120 |
| 18 × 31.5 | 100 | 250 | | | 100 | 100 | 150 | 150 | 120 |
| 18 × 35 | 100 | – | | | 100 | 100 | 150 | 150 | 150 |
| 18 × 40 | 125 | – | | | 100 | 100 | 120 | – | 72 |
| The last three digits of the complete ordering code state the lead configuration | **000** | Code | F (mm) | d (mm) | **001** | **002** | **003** | **004** | **012** |
| | | **009** | 7.5 | 16...18 | | | | | |

## Cautions and warnings

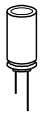
### Personal safety

The electrolytes used by EPCOS have not only been optimized with a view to the intended application, but also with regard to health and environmental compatibility. They do not contain any solvents that are detrimental to health, e.g. dimethyl formamide (DMF) or dimethyl acetamide (DMAC).

Furthermore, part of the high-voltage electrolytes used by EPCOS are self-extinguishing. They contain flame-retarding substances which will quickly extinguish any flame that may have been ignited.

As far as possible, EPCOS does not use any dangerous chemicals or compounds to produce operating electrolytes. However, in exceptional cases, such materials must be used in order to achieve specific physical and electrical properties because no safe substitute materials are currently known. However, the amount of dangerous materials used in our products has been limited to an absolute minimum. Nevertheless, the following rules should be observed when handling aluminum electrolytic capacitors:

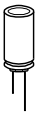
- Any escaping electrolyte should not come into contact with eyes or skin.
- If electrolyte does come into contact with the skin, wash the affected parts immediately with running water. If the eyes are affected, rinse them for 10 minutes with plenty of water. If symptoms persist, seek medical treatment.
- Avoid breathing in electrolyte vapor or mists. Workplaces and other affected areas should be well ventilated. Clothing that has been contaminated by electrolyte must be changed and rinsed in water.



**Product safety**

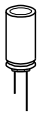
The table below summarizes the safety instructions that must be observed without fail. A detailed description can be found in the relevant sections of chapter "General technical information".

| Topic | Safety information | Reference chapter "General technical information" |
|---|---|---|
| Polarity | Make sure that polar capacitors are connected with the right polarity. | 1 "Basic construction of aluminum electrolytic capacitors" |
| Reverse voltage | Voltages polarity classes should be prevented by connecting a diode. | 3.1.6 "Reverse voltage" |
| Upper category temperature | Do not exceed the upper category temperature. | 7.2 "Maximum permissible operating temperature" |
| Maintenance | Make periodic inspections of the capacitors. Before the inspection, make sure that the power supply is turned off and carefully discharge the electricity of the capacitors. Do not apply any mechanical stress to the capacitor terminals. | 10 "Maintenance" |
| Mounting position of screw-terminal capacitors | Do not mount the capacitor with the terminals (safety vent) upside down. | 11.1. "Mounting positions of capacitors with screw terminals" |
| Mounting of single-ended capacitors | The internal structure of single-ended capacitors might be damaged if excessive force is applied to the lead wires. Avoid any compressive, tensile or flexural stress. Do not move the capacitor after soldering to PC board. Do not pick up the PC board by the soldered capacitor. Do not insert the capacitor on the PC board with a hole space different to the lead space specified. | 11.4 "Mounting considerations for single-ended capacitors" |
| Robustness of terminals | The following maximum tightening torques must not be exceeded when connecting screw terminals: M5: 2 Nm M6: 2.5 Nm | 11.3 "Mounting torques" |
| Soldering | Do not exceed the specified time or temperature limits during soldering. | 11.5 "Soldering" |





| Topic | Safety information | Reference chapter "General technical information" |
|---|---|---|
| Soldering, cleaning agents | Do not allow halogenated hydrocarbons to come into contact with aluminum electrolytic capacitors. | 11.6 "Cleaning agents" |
| Passive flammability | Avoid external energy, such as fire or electricity. | 8.1 "Passive flammability" |
| Active flammability | Avoid overload of the capacitors. | 8.2 "Active flammability" |
| | | Reference chapter "Capacitors with screw terminals" |
| Breakdown strength of insulating sleeves | Do not damage the insulating sleeve, especially when ring clips are used for mounting. | "Screw terminals – accessories" |



**Symbols and terms**

| Symbol | English | German |
|---|---|---|
| C | Capacitance | Kapazität |
| $C_R$ | Rated capacitance | Nennkapazität |
| $C_S$ | Series capacitance | Serienkapazität |
| $C_{S,T}$ | Series capacitance at temperature T | Serienkapazität bei Temperatur T |
| $C_f$ | Capacitance at frequency f | Kapazität bei Frequenz f |
| d | Case diameter, nominal dimension | Gehäusedurchmesser, Nennmaß |
| $d_{max}$ | Maximum case diameter | Maximaler Gehäusedurchmesser |
| ESL | Self-inductance | Eigeninduktivität |
| ESR | Equivalent series resistance | Ersatzserienwiderstand |
| $ESR_f$ | Equivalent series resistance at frequency f | Ersatzserienwiderstand bei Frequenz f |
| $ESR_T$ | Equivalent series resistance at temperature T | Ersatzserienwiderstand bei Temperatur T |
| f | Frequency | Frequenz |
| I | Current | Strom |
| $I_{AC}$ | Alternating current (ripple current) | Wechselstrom |
| $I_{AC,rms}$ | Root-mean-square value of alternating current | Wechselstrom, Effektivwert |
| $I_{AC,f}$ | Ripple current at frequency f | Wechselstrom bei Frequenz f |
| $I_{AC,max}$ | Maximum permissible ripple current | Maximal zulässiger Wechselstrom |
| $I_{AC,R}$ | Rated ripple current | Nennwechselstrom |
| $I_{AC,R}$ (B) | Rated ripple current for base cooling | Nennwechselstromstrom für Bodenkühlung |
| $I_{leak}$ | Leakage current | Reststrom |
| $I_{leak,op}$ | Operating leakage current | Betriebsreststrom |
| l | Case length, nominal dimension | Gehäuselänge, Nennmaß |
| $l_{max}$ | Maximum case length (without terminals and mounting stud) | Maximale Gehäuselänge (ohne Anschlüsse und Gewindebolzen) |
| R | Resistance | Widerstand |
| $R_{ins}$ | Insulation resistance | Isolationswiderstand |
| $R_{symm}$ | Balancing resistance | Symmetrierwiderstand |
| T | Temperature | Temperatur |
| $\Delta T$ | Temperature difference | Temperaturdifferenz |
| $T_A$ | Ambient temperature | Umgebungstemperatur |
| $T_C$ | Case temperature | Gehäusetemperatur |
| $T_B$ | Capacitor base temperature | Temperatur des Becherbodens |
| t | Time | Zeit |
| $\Delta t$ | Period | Zeitraum |
| $t_b$ | Service life (operating hours) | Brauchbarkeitsdauer (Betriebszeit) |

| Symbol | English | German |
|---|---|---|
| V | Voltage | Spannung |
| $V_F$ | Forming voltage | Formierspannung |
| $V_{op}$ | Operating voltage | Betriebsspannung |
| $V_R$ | Rated voltage, DC voltage | Nennspannung, Gleichspannung |
| $V_S$ | Surge voltage | Spitzenspannung |
| $X_C$ | Capacitive reactance | Kapazitiver Blindwiderstand |
| $X_L$ | Inductive reactance | Induktiver Blindwiderstand |
| Z | Impedance | Scheinwiderstand |
| $Z_T$ | Impedance at temperature T | Scheinwiderstand bei Temperatur T |
| tan $\delta$ | Dissipation factor | Verlustfaktor |
| $\lambda$ | Failure rate | Ausfallrate |
| $\varepsilon_0$ | Absolute permittivity | Elektrische Feldkonstante |
| $\varepsilon_r$ | Relative permittivity | Dielektrizitätszahl |
| $\omega$ | Angular velocity; $2 \cdot \pi \cdot f$ | Kreisfrequenz; $2 \cdot \pi \cdot f$ |

**Note**

All dimensions are given in mm.

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