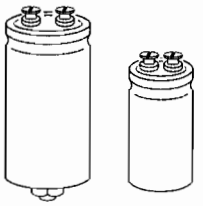
**For professional current converter technology**
**Voltage ratings up to 500 Vdc**



KAL0272-T

B 41 584 B 41 564
B 43 584 B 43 564

### Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Poles with screw terminal connections
- Mounting with ring clips or threaded stud
- The bases of types with threaded stud and $d \leq 76{,}9$ mm are not insulated, types with $d = 91$ mm have fully insulated bases

### Features

- High reliability
- Extremely good electrical characteristics and small dimensions
- High ripple current capability
- All-welded construction ensures reliable electrical contact

### Applications

- General industrial electronics
- For switch-mode power supplies in professional equipment
- For intermediate circuits in converters

### Specifications and characteristics in brief

| | B 41 564, B 41 584 | B 43 564, B 43 584 |
|---|---|---|
| Rated voltage $V_R$ | 16 ... 100 Vdc | 160 ... 500 Vdc |
| Surge voltage $V_S$ | $1{,}15 \cdot V_R$ | $1{,}15 \cdot V_R$ (for $V_R \leq 250$ Vdc)<br>$1{,}1 \cdot V_R$ (for $V_R \geq 350$ Vdc) |
| Rated capacitance $C_R$ | 1000 ... 220 000 µF | 100 ... 22 000 µF |
| Capacitance tolerance | – 10/+ 30 % ≙ Q | ± 20 % ≙ M |
| Service life [1] | | |
| 40 °C, $V_R$ | > 200 000 h ($1{,}8 \cdot I_{AC_{R,85°C}}$) | > 200 000 h ($1{,}6 \cdot I_{AC_{R,85°C}}$) |
| 85 °C, $V_R$, $I_{AC_R}$ | > 8 000 h | > 15 000 h |
| Fraction failure | ≤ 0,5 %<br>(during the service life) | ≤ 1 %<br>(during the service life) |
| Failure rate | ≤ 20 fit<br>($\leq 20 \cdot 10^{-9}$/h) | ≤ 40 fit<br>($\leq 40 \cdot 10^{-9}$/h) |
| Voltage endurance test | 2000 h, 85 °C<br>(at $V_R$, $I_{AC_R}$) | 2000 h, 85 °C<br>(at $V_R$, $I_{AC_R}$) |

1) Preliminary values for capacitors with $V_R = 500$ Vdc

| | |
|---|---|
| Leakage current $I_{lka}$ (5 min, 20 °C) | 1000 µC ≤ $C_R \cdot V_R$ < 470 000 µC: $I_{lka} \leq 0,006\ \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right) + 4\ \mu A$ $C_R \cdot V_R \geq 470\,000\ \mu C$: $I_{lka} \leq 0,3\ \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right)^{0,7} + 4\ \mu A$ |
| Self-inductance *ESL* | approx. 20 nH |
| IEC climatic category | in accordance with IEC 68–1<br>≤ 100 Vdc : 40/085/56 (–40 °C/+85 °C)<br>≥ 160 Vdc : 25/085/56 (–25 °C/+85 °C) |
| Detail specifications | similar to CECC 30 301-803, CECC 301-807, CECC 30 301-046<br>similar to DIN 45 910 part 128 |
| Sectional specifications | IEC 384–4<br>DIN 45 910 part 12 |
| Vibration resistance | in accordance with IEC 68–2–6, test Fc:<br>displacement amplitude 0,75 mm, frequency range 10 ... 55 Hz,<br>acceleration max. 10 *g*, duration 3 × 2 h |

Due to the current load capability of the contact elements, the following current limits must not be exceeded, even if the frequency and temperature factors have been taken into account:

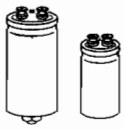
| Capacitor diameter | ≤ 51,6 mm | 64,3 mm | 76,9 mm | 91,0 mm |
|---|---|---|---|---|
| Maximum current | 30 A | 40 A | 50 A | 60 A |

**Accessories**

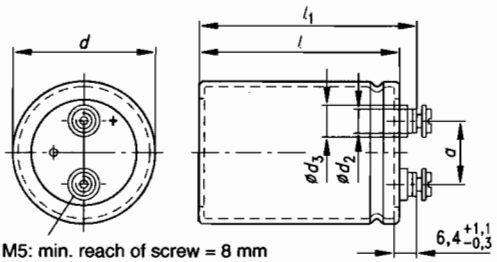
The following items are included in the delivery package, but are not fastened to the capacitors:

| | Thread | Toothed washers | Screws/nuts | Maximum torque |
|---|---|---|---|---|
| For terminals | M 5 | A 5,1 DIN 6797 | Cylinder-head screw M 5 × 8 DIN 84-4.8 | 2 Nm |
| | M 6 | A 6,4 DIN 6797 | Cylinder-head screw M 6 × 12 DIN 85-4.8 | 2,5 Nm |
| For mounting | M 8 | J 8,2 DIN 6797 | Hex nut BM 8 DIN 439 | 4 Nm |
| | M 12 | J 12,5 DIN 6797 | Hex nut BM 12 DIN 439 | 10 Nm |

The following must be ordered separately:
Ring clips B 44 030 (cf. page 125)
Insulating parts B 44 020 (cf. page 122)



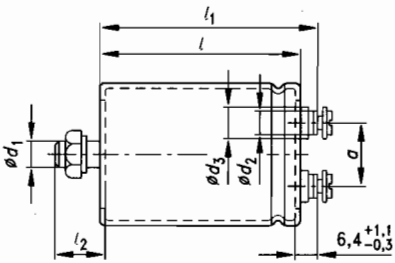
**Types B 41 564, B 43 564**
Ring clip mounting




M5: min. reach of screw = 8 mm
M6: min. reach of screw = 12 mm

KAL0217-R

**Types B 41 584, B 43 584**
Threaded stud mounting




KAL0218-Z

Positive pole marking: +

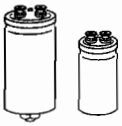
The base of all types with stud mounting and $d$ = 91 mm is fully insulated (the length $l$ is increased by 1 mm in these cases). Also refer to the notes on mounting given on page 124.

| Ter-minal | Dimensions (mm) with insulating sleeve $d$ | $l^{+0}_{-3,2}$ | $l_1$ max | $l_2{}^{+0}_{-1}$ | $d_1$ | $d_2$ max | $d_3$ max | $a^{+0,2}_{-0,8}$ | Approx. wt. (g) |
|---|---|---|---|---|---|---|---|---|---|
| M 5 | 35,7+ 0/– 0,8 | 56,7 | 64,2 | 13 | M 8 | 8,2 | 13,5 | 12,7 | 65 |
| M 5 | 35,7+ 0/– 0,8 | 82,1 | 89,6 | 13 | M 8 | 8,2 | 13,5 | 12,7 | 105 |
| M 5 | 35,7+ 0/– 0,8 | 107,5 | 115,0 | 13 | M 8 | 8,2 | 13,5 | 12,7 | 135 |
| M 5 | 51,6+ 0/– 0,8 | 82,1 | 89,6 | 17 | M 12 | 8,2 | 13,5 | 22,2 | 220 |
| M 5 | 51,6+ 0/– 0,8 | 107,5 | 115,0 | 17 | M 12 | 8,2 | 13,5 | 22,2 | 280 |
| M 5 | 64,3+ 0/– 0,8 | 107,5 | 115,0 | 17 | M 12 | 8,2 | 13,5 | 28,5 | 440 |
| M 6 | 76,9+ 0/– 0,7 | 107,5 | 115,0 | 17 | M 12 | 17,7 | 17,7 | 31,7 | 540 |
| M 6 | 76,9+ 0/– 0,7 | 145,6 | 153,1 | 17 | M 12 | 17,7 | 17,7 | 31,7 | 840 |
| M 6 | 76,9+ 0/– 0,7 | 221,8 | 229,3 | 17 | M 12 | 17,7 | 17,7 | 31,7 | 1300 |
| M 6 | 91,0+ 0/– 2 | 107,5 | 115,0 | 17 | M 12 | 17,7 | 17,7 | 31,7[1)] | 750 |
| M 6 | 91,0+ 0/– 2 | 146,0 | 153,5 | 17 | M 12 | 17,7 | 17,7 | 31,7[1)] | 1200 |
| M 6 | 91,0+ 0/– 2 | 222,0 | 229,5 | 17 | M 12 | 17,7 | 17,7 | 31,7[1)] | 1900 |

**Packing units**

| Capacitor diameter $d$ | Packing units (pieces) |
|---|---|
| 35,7 mm | 72 |
| 51,6 mm | 36 |
| 64,3 mm | 20 |
| 76,9 mm | 16 |
| 91,0 mm | 8 |

1) Tolerance ± 0,8



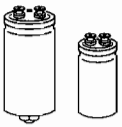


## Overview of available types

### Types B 41 564, B 41 584

| $V_R$ (Vdc) | 16 | 25 | 40 | 63 | 100 |
|---|---|---|---|---|---|
| $C_R$ (µF) | Case dimensions $d \times l$ (mm) | | | | |
| 1 000 | | | | | 35,7 × 56,7 |
| 2 200 | | | | 35,7 × 56,7 | 35,7 × 82,1 |
| 3 300 | | | | | 51,6 × 82,1 |
| 4 700 | | 35,7 × 56,7 | 35,7 × 82,1 | 35,7 × 107,5 | 51,6 × 107,5 |
| 6 800 | | | | 51,6 × 82,1 | 64,3 × 107,5 |
| 10 000 | 35,7 × 56,7 | 35,7 × 82,1 | 35,7 × 107,5 | 51,6 × 82,1 | 64,3 × 107,5 |
| 15 000 | 35,7 × 82,1 | 35,7 × 107,5 | 51,6 × 82,1 | 51,6 × 107,5 | 76,9 × 145,6 |
| 22 000 | 35,7 × 82,1 | 51,6 × 82,1 | 51,6 × 107,5 | 64,3 × 107,5 | 76,9 × 145,6 |
| 33 000 | 35,7 × 107,5 | 51,6 × 82,1 | 64,3 × 107,5 | 76,9 × 107,5 | 76,9 × 221,8 [1] |
| 47 000 | 51,6 × 82,1 | 64,3 × 107,5 | 76,9 × 107,5 | 76,9 × 145,6 | |
| 68 000 | 51,6 × 107,5 | 64,3 × 107,5 | 76,9 × 145,6 | 76,9 × 221,8 [1] | |
| 100 000 | 64,3 × 107,5 | 76,9 × 107,5 | 76,9 × 221,8 [1] | | |
| 150 000 | 76,9 × 107,5 | 76,9 × 145,6 | | | |
| 220 000 | 76,9 × 145,6 | | | | |

1) Only with ring clip mounting

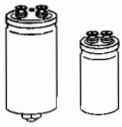


**Overview of available types**

**Types B 43 564, B 43 584**

| $V_R$ (Vdc) | 160 | 250 | 350 | 400 | 450 | 500 |
|---|---|---|---|---|---|---|
| $C_R$ (µF) | Case dimensions $d \times l$ (mm) | | | | | |
| 100 | | | | | | 35,7 × 56,7 |
| 150 | | | | | | 35,7 × 82,1 |
| 220 | | | 35,7 × 56,7 | 35,7 × 56,7 | 35,7 × 82,1 | 35,7 × 82,1 |
| 330 | | | | | | 35,7 × 107,5 |
| 470 | 35,7 × 56,7 | 35,7 × 56,7 | 35,7 × 82,1 | 35,7 × 82,1 | 35,7 × 107,5 | 51,6 × 82,1 |
| 680 | | | | | | 51,6 × 107,5 |
| 1 000 | 35,7 × 82,1 | 35,7 × 82,1 | 51,6 × 82,1 | 51,6 × 82,1 | 51,6 × 107,5 | 64,3 × 107,5 |
| 1 500 | 35,7 × 107,5 | 51,6 × 82,1 | 51,6 × 107,5 | 51,6 × 107,5 | 64,3 × 107,5 | 76,9 × 107,5 |
| 2 200 | 51,6 × 82,1 | 51,6 × 82,1 | 64,3 × 107,5 | 64,3 × 107,5 | 76,9 × 107,5 | 76,9 × 145,6 |
| 3 300 | 51,6 × 107,5 | 51,6 × 107,5 | 76,9 × 107,5 | 76,9 × 145,6 | 76,9 × 145,6 | 76,9 × 221,8 |
| 4 700 | 64,3 × 107,5 | 64,3 × 107,5 | 76,9 × 145,6 | 91,0 × 107,5 | 76,9 × 221,8<br>91,0 × 146,0 | 91,0 × 222,0 |
| 5 600 | | | | | | 91,0 × 222,0 |
| 6 000 | | | 76,9 × 145,6 | 76,9 × 221,8 | 76,9 × 221,8 | |
| 6 800 | 64,3 × 107,5 | 76,9 × 145,6 | | 91,0 × 146,0 | | |
| 8 200 | | | 91,0 × 146,0 | | | |
| 10 000 | 76,9 × 107,5 | 76,9 × 145,6 | 76,9 × 221,8 | | | |
| 15 000 | 76,9 × 145,6 | 91,0 × 146,0 | | | | |
| 22 000 | 76,9 × 221,8<br>91,0 × 146,0 | | | | | |

The capacitance and voltage ratings listed above are available in smaller cases upon request. Other voltage and capacitance ratings are also available upon request.

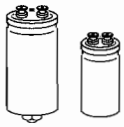


# B 41 564, B 41 584
# B 43 564, B 43 584

## Technical data and ordering codes

| $V_R$ | $C_R$ | Case dimensions $d \times l$ | $ESR_{typ}$ 100 Hz 20 °C | $ESR_{max}$ 100 Hz 20 °C | $Z_{max}$ 10 kHz 20 °C | $I_{ac\,max}$ 100 Hz 40 °C | $I_{ac\,R}$ 100 Hz 85 °C | $I_{ac\,max}$ 100 Hz 85 °C | Ordering code |
|---|---|---|---|---|---|---|---|---|---|
| Vdc | µF | mm | mΩ | mΩ | mΩ | A | A | A | Short code |
| **B41564-, B41584-** | | | | | | | | | |
| 16 | 10 000 | 35,7 × 56,7 | 27 | 42 | 40 | 9,9 | 3,4 | 5,4 | -A4109-Q |
| | 15 000 | 35,7 × 82,1 | 20 | 32 | 32 | 13 | 4,4 | 7,0 | -A4159-Q |
| | 22 000 | 35,7 × 82,1 | 17 | 26 | 26 | 14 | 4,8 | 7,7 | -B4229-Q |
| | 33 000 | 35,7 × 107,5 | 14 | 21 | 23 | 17 | 5,8 | 9,3 | -J 4339-Q |
| | 47 000 | 51,6 × 82,1 | 12 | 18 | 20 | 18 | 6,3 | 10 | -B4479-Q |
| | 68 000 | 51,6 × 107,5 | 11 | 16 | 19 | 21 | 7,2 | 12 | -J 4689-Q |
| | 100 000 | 64,3 × 107,5 | 10 | 15 | 18 | 24 | 8,4 | 13 | -J 4100-Q |
| | 150 000 | 76,9 × 107,5 | 9 | 14 | 17 | 26 | 9,0 | 14 | -B4150-Q |
| | 220 000 | 76,9 × 145,6 | 9 | 13 | 15 | 29 | 10 | 16 | -B4220-Q |
| 25 | 4 700 | 35,7 × 56,7 | 35 | 65 | 60 | 9 | 3,0 | 5 | -A5478-Q |
| | 10 000 | 35,7 × 82,1 | 21 | 37 | 36 | 13 | 4,3 | 7,2 | -A5109-Q |
| | 15 000 | 35,7 × 107,5 | 16 | 29 | 29 | 16 | 5,4 | 8,6 | -A5159-Q |
| | 22 000 | 51,6 × 82,1 | 13 | 23 | 25 | 18 | 6,1 | 9,8 | -A5229-Q |
| | 33 000 | 51,6 × 82,1 | 11 | 20 | 21 | 19 | 6,6 | 11 | -B5339-Q |
| | 47 000 | 64,3 × 107,5 | 10 | 17 | 19 | 24 | 8,4 | 13 | -A5479-Q |
| | 68 000 | 64,3 × 107,5 | 10 | 16 | 18 | 24 | 8,4 | 13 | -J 5689-Q |
| | 100 000 | 76,9 × 107,5 | 9 | 15 | 17 | 26 | 9,0 | 14 | -B5100-Q |
| | 150 000 | 76,9 × 145,6 | 9 | 14 | 15 | 29 | 10 | 16 | -B5150-Q |
| 40 | 4 700 | 35,7 × 82,1 | 30 | 57 | 51 | 11 | 3,5 | 6,1 | -A7478-Q |
| | 10 000 | 35,7 × 107,5 | 18 | 33 | 32 | 16 | 5,1 | 9,0 | -A7109-Q |
| | 15 000 | 51,6 × 82,1 | 14 | 26 | 26 | 17 | 5,8 | 9,3 | -A7159-Q |
| | 22 000 | 51,6 × 107,5 | 10 | 22 | 23 | 22 | 7,6 | 12 | -A7229-Q |
| | 33 000 | 64,3 × 107,5 | 9 | 18 | 20 | 26 | 8,9 | 14 | -A7339-Q |
| | 47 000 | 76,9 × 107,5 | 8 | 17 | 19 | 28 | 9,5 | 15 | -B7479-Q |
| | 68 000 | 76,9 × 145,6 | 7 | 15 | 18 | 35 | 12 | 19 | -B7689-Q |
| | 100 000 | 76,9 × 221,8 | 7 | 13 | 18 | 41 | 14 | 22 | -B7100-Q |
| 63 | 2 200 | 35,7 × 56,7 | 44 | 92 | 83 | 7,8 | 2,7 | 4,3 | -A8228-Q |
| | 4 700 | 35,7 × 107,5 | 24 | 49 | 47 | 13 | 4,4 | 7,0 | -A8478-Q |
| | 6 800 | 51,6 × 82,1 | 18 | 38 | 37 | 15 | 5,1 | 8,2 | -A8688-Q |
| | 10 000 | 51,6 × 82,1 | 14 | 30 | 30 | 17 | 5,8 | 9,3 | -B8109-Q |
| | 15 000 | 51,6 × 107,5 | 12 | 24 | 25 | 20 | 6,9 | 11 | -J 8159-Q |
| | 22 000 | 64,3 × 107,5 | 10 | 20 | 22 | 24 | 8,4 | 13 | -J 8229-Q |
| | 33 000 | 76,9 × 107,5 | 9 | 17 | 20 | 26 | 9,0 | 14 | -B8339-Q |
| | 47 000 | 76,9 × 145,6 | 8 | 16 | 18 | 32 | 11 | 18 | -B8479-Q |
| | 68 000 | 76,9 × 221,8 | 7 | 15 | 18 | 41 | 14 | 22 | -B8689-Q |

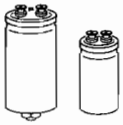
For instructions on how to determine ordering codes, refer to page 76.



## Technical data and ordering codes

| $V_R$ | $C_R$ | Dimensions $d \times l$ | $ESR_{typ}$ 100 Hz 20 °C | $ESR_{max}$ 100 Hz 20 °C | $Z_{max}$ 10 kHz 20 °C | $I_{ac_{max}}$ 100 Hz 40 °C | $I_{ac_R}$ 100 Hz 85 °C | $I_{ac_{max}}$ 100 Hz 85 °C | Ordering code |
|---|---|---|---|---|---|---|---|---|---|
| Vdc | µF | mm | mΩ | mΩ | mΩ | A | A | A | Short code |
| **B41564-, B41584-** | | | | | | | | | |
| 100 | 1 000 | 35,7 × 56,7 | 51 | 130 | 115 | 7,3 | 2,5 | 4,0 | -A9108-Q |
| | 2 200 | 35,7 × 82,1 | 27 | 68 | 61 | 11 | 3,8 | 6,1 | -A9228-Q |
| | 3 300 | 51,6 × 82,1 | 20 | 50 | 45 | 14 | 4,9 | 7,8 | -A9338-Q |
| | 4 700 | 51,6 × 107,5 | 16 | 40 | 39 | 17 | 6,0 | 9,6 | -A9478-Q |
| | 6 800 | 64,3 × 107,5 | 13 | 33 | 33 | 21 | 7,4 | 12 | -A9688-Q |
| | 10 000 | 64,3 × 107,5 | 11 | 27 | 27 | 23 | 8,0 | 13 | -A9109-Q |
| | 15 000 | 76,9 × 145,6 | 10 | 22 | 23 | 28 | 9,6 | 15 | -B9159-Q |
| | 22 000 | 76,9 × 145,6 | 9 | 18 | 20 | 29 | 10 | 16 | -B9229-Q |
| | 33 000 | 76,9 × 221,8 | 8 | 16 | 18 | 38 | 13 | 21 | -B9339-Q |
| **B43564-, B43584-** | | | | | | | | | |
| 160 | 470 | 35,7 × 56,7 | 260 | 410 | 370 | 4,8 | 2,2 | 2,6 | -A1477-M |
| | 1 000 | 35,7 × 82,1 | 130 | 200 | 180 | 7,5 | 3,4 | 4,1 | -A1108-M |
| | 1 500 | 35,7 × 107,5 | 85 | 130 | 120 | 10 | 4,7 | 5,6 | -A1158-M |
| | 2 200 | 51,6 × 82,1 | 57 | 86 | 79 | 13 | 5,8 | 6,9 | -A1228-M |
| | 3 300 | 51,6 × 107,5 | 40 | 60 | 56 | 17 | 7,6 | 9,1 | -A1338-M |
| | 4 700 | 64,3 × 107,5 | 31 | 47 | 44 | 21 | 10 | 12 | -A1478-M |
| | 6 800 | 64,3 × 107,5 | 23 | 35 | 35 | 25 | 11 | 13 | -A1688-M |
| | 10 000 | 76,9 × 107,5 | 17 | 26 | 26 | 29 | 13 | 16 | -A1109-M |
| | 15 000 | 76,9 × 145,6 | 12 | 18 | 18 | 35 | 16 | 19 | -A1159-M |
| | 22 000 | 76,9 × 221,8 | 9 | 14 | 14 | 48 | 22 | 26 | -A1229-M |
| | 22 000 | 91,0 × 146,0 | 8 | 14 | 14 | 48 | 22 | 26 | -J 1229-M |
| 250 | 470 | 35,7 × 56,7 | 170 | 260 | 230 | 5,9 | 2,7 | 3,2 | -A2477-M |
| | 1 000 | 35,7 × 82,1 | 93 | 140 | 130 | 8,9 | 4,1 | 4,9 | -A2108-M |
| | 1 500 | 51,6 × 82,1 | 71 | 110 | 100 | 11 | 5,2 | 6,2 | -A2158-M |
| | 2 200 | 51,6 × 82,1 | 51 | 77 | 74 | 13 | 6,1 | 7,3 | -A2228-M |
| | 3 300 | 51,6 × 107,5 | 36 | 54 | 52 | 18 | 8,0 | 9,6 | -A2338-M |
| | 4 700 | 64,3 × 107,5 | 27 | 41 | 41 | 23 | 10 | 12 | -A2478-M |
| | 6 800 | 76,9 × 145,6 | 20 | 30 | 30 | 30 | 14 | 16 | -A2688-M |
| | 10 000 | 76,9 × 145,6 | 15 | 23 | 23 | 34 | 16 | 19 | -A2109-M |
| | 15 000 | 91,0 × 146,0 | 10 | 18 | 18 | 46 | 21 | 25 | -A2159-M |
| 350 | 220 | 35,7 × 56,7 | 310 | 470 | 400 | 4,4 | 2,0 | 2,4 | -A4227-M |
| | 470 | 35,7 × 82,1 | 150 | 230 | 200 | 7,0 | 3,2 | 3,8 | -A4477-M |
| | 1 000 | 51,6 × 82,1 | 86 | 130 | 120 | 10 | 4,7 | 5,6 | -A4108-M |
| | 1 500 | 51,6 × 107,5 | 62 | 93 | 93 | 13 | 6,1 | 7,3 | -A4158-M |
| | 2 200 | 64,3 × 107,5 | 48 | 72 | 66 | 17 | 8,0 | 9,3 | -A4228-M |
| | 3 300 | 76,9 × 107,5 | 32 | 48 | 47 | 21 | 10 | 11 | -A4338-M |
| | 4 700 | 76,9 × 145,6 | 25 | 38 | 38 | 27 | 12 | 15 | -A4478-M |
| | 6 000 | 76,9 × 145,6 | 21 | 32 | 32 | 29 | 13 | 16 | -A4608-M |
| | 8 200 | 91,0 × 146,0 | 13 | 23 | 23 | 41 | 18 | 22 | -A4828-M |
| | 10 000 | 76,9 × 221,8 | 13 | 20 | 20 | 44 | 20 | 24 | -A4109-M |

For instructions on how to determine ordering codes, refer to page 76.



# B 41 564, B 41 584
# B 43 564, B 43 584

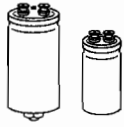
## Technical data and ordering codes

| $V_R$ | $C_R$ | Dimensions $d \times l$ | $ESR_{typ}$ 100 Hz 20 °C | $ESR_{max}$ 100 Hz 20 °C | $Z_{max}$ 10 kHz 20 °C | $Iac_{max}$ 100 Hz 40 °C | $Iac_R$ 100 Hz 85 °C | $Iac_{max}$ 100 Hz 85 °C | Ordering code |
|---|---|---|---|---|---|---|---|---|---|
| Vdc | µF | mm | mΩ | mΩ | mΩ | A | A | A | Short code |
| **B43564-, B43584-** | | | | | | | | | |
| 400 | 220 | 35,7 × 56,7 | 310 | 470 | 400 | 4,4 | 2,0 | 2,4 | -A227-M |
| | 470 | 35,7 × 82,1 | 150 | 230 | 210 | 7,0 | 3,2 | 3,8 | -A477-M |
| | 1 000 | 51,6 × 82,1 | 86 | 130 | 120 | 10 | 4,7 | 5,6 | -A108-M |
| | 1 500 | 51,6 × 107,5 | 62 | 93 | 84 | 13 | 6,1 | 7,3 | -A158-M |
| | 2 200 | 64,3 × 107,5 | 48 | 72 | 65 | 17 | 7,7 | 9,3 | -A228-M |
| | 3 300 | 76,9 × 145,6 | 36 | 54 | 51 | 22 | 10 | 12 | -A338-M |
| | 4 700 | 91,0 × 107,5 | 23 | 41 | 41 | 27 | 12 | 15 | -A478-M |
| | 6 000 | 76,9 × 221,8 | 21 | 32 | 32 | 35 | 16 | 19 | -A608-M |
| | 6 800 | 91,0 × 146,0 | 15 | 27 | 27 | 38 | 17 | 21 | -A688-M |
| 450 | 220 | 35,7 × 82,1 | 360 | 540 | 460 | 4,5 | 2,1 | 2,5 | -A5227-M |
| | 470 | 35,7 × 107,5 | 170 | 260 | 240 | 7,3 | 3,3 | 4,0 | -A5477-M |
| | 1 000 | 51,6 × 107,5 | 93 | 140 | 130 | 11 | 5,0 | 6,0 | -A5108-M |
| | 1 500 | 64,3 × 107,5 | 66 | 99 | 89 | 14 | 6,6 | 7,9 | -A5158-M |
| | 2 200 | 76,9 × 107,5 | 48 | 72 | 65 | 17 | 7,8 | 9,3 | -A5228-M |
| | 3 300 | 76,9 × 145,6 | 34 | 51 | 49 | 23 | 10 | 12 | -A5338-M |
| | 4 700 | 76,9 × 221,8 | 25 | 38 | 38 | 32 | 14 | 17 | -A5478-M |
| | 4 700 | 91,0 × 146,0 | 25 | 38 | 38 | 32 | 15 | 17 | -J 5478-M |
| | 6 000 | 76,9 × 221,8 | 21 | 32 | 32 | 35 | 16 | 19 | -A5608-M |
| 500 | 100 | 35,7 × 56,7 | 800 | 1200 | 1100 | 1,9 | 0,9 | 1,1 | -A6107-M |
| | 150 | 35,7 × 82,1 | 540 | 810 | 730 | 2,6 | 1,2 | 1,4 | -A6157-M |
| | 220 | 35,7 × 82,1 | 370 | 560 | 500 | 3,2 | 1,4 | 1,7 | -A6227-M |
| | 330 | 35,7 × 107,5 | 250 | 380 | 340 | 4,3 | 1,9 | 2,3 | -A6337-M |
| | 470 | 51,6 × 82,1 | 180 | 270 | 250 | 5,1 | 2,3 | 2,8 | -A6477-M |
| | 680 | 51,6 × 107,5 | 120 | 180 | 180 | 6,8 | 3,1 | 3,7 | -A6687-M |
| | 1 000 | 64,3 × 107,5 | 85 | 130 | 130 | 9 | 4,1 | 4,9 | -A6108-M |
| | 1 500 | 76,9 × 107,5 | 57 | 86 | 86 | 11 | 5,0 | 6,1 | -A6158-M |
| | 2 200 | 76,9 × 145,6 | 39 | 59 | 59 | 15 | 6,9 | 8 | -A6228-M |
| | 3 300 | 76,9 × 221,8 | 26 | 39 | 39 | 22 | 10 | 12 | -A6338-M |
| | 4 700 | 91,0 × 222,0 | 15 | 27 | 27 | 32 | 14 | 17 | -A6478-M |
| | 5 600 | 91,0 × 222,0 | 14 | 24 | 24 | 33 | 15 | 18 | -A6568-M |

### How to determine the ordering code

To obtain the required ordering code, prefix the type number to the short code.
E.g.: B41564-A4109-Q, B43584-A227-M

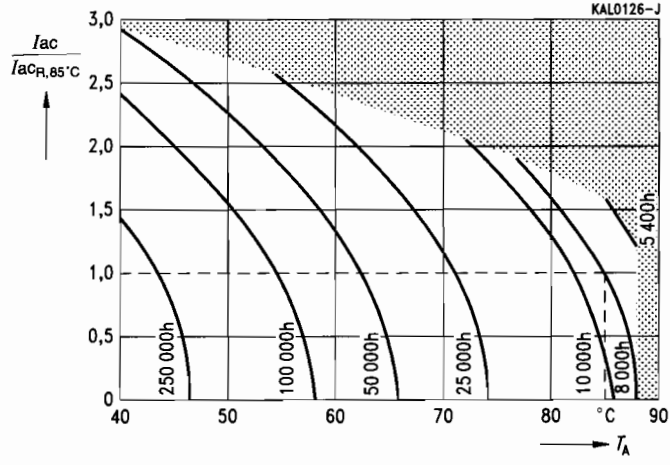
| | | |
|---|---|---|
| $V_R$ = 16 ... 100 Vdc | B41564-... (ring clip mounting) | B41584-... (with threaded stud) |
| $V_R$ = 160 ... 500 Vdc | B43564-... (ring clip mounting) | B43584-... (with threaded stud) |



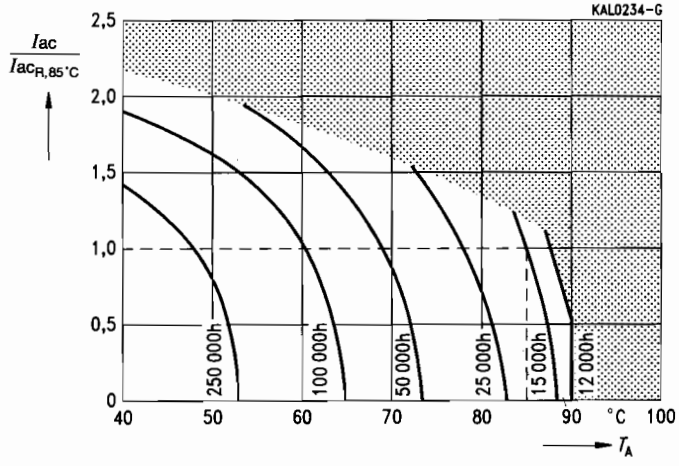
**Service life**

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

$V_R$ = 16 ... 100 Vdc

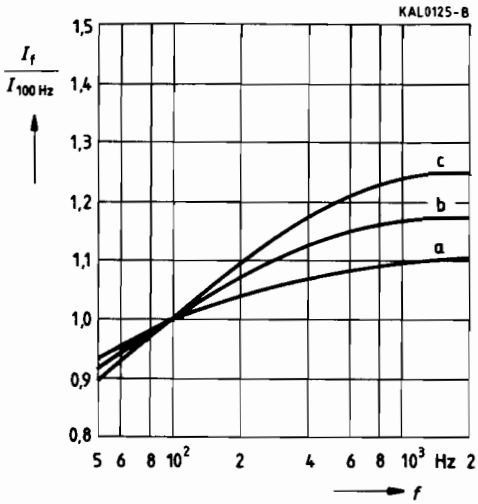



$V_R$ = 160 ... 500 Vdc



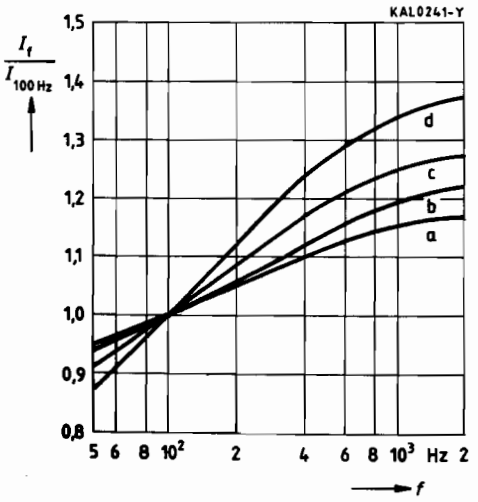

1) Refer to page 31 for an explanation on how to interpret the service life graphs.

**Permissible ripple current *I*ac**
versus frequency *f*
$V_R \leq 100$ Vdc

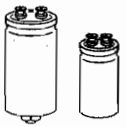



| $V_R$ (Vdc) | 16 | 25; 40 | 63 | 100 |
|---|---|---|---|---|
| $d$ = 35,7 mm | a | a | b | c |
| $d \geq$ 51,6 mm | a | a | a | a |

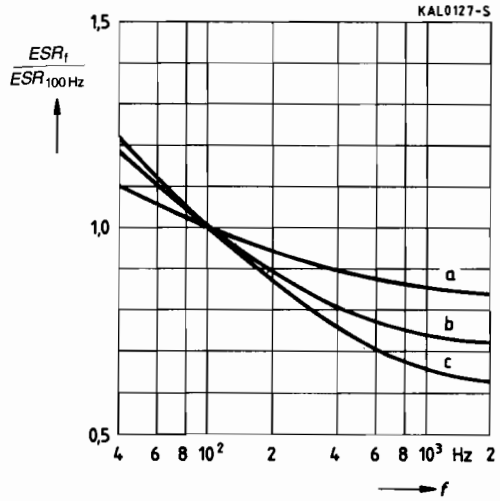
**Permissible ripple current *I*ac**
versus frequency *f*
$V_R \geq 160$ Vdc




| $d$ (mm) | 35,7 | 51,6 | 64,3 | 76,9 | 91,0 |
|---|---|---|---|---|---|
| Curve | d | c | b | a | c |

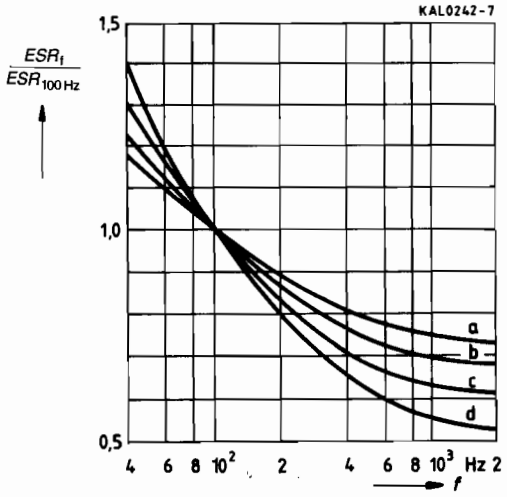


**Equivalent series resistance *ESR***
versus frequency *f*
Typical behavior
$V_R \leq 100$ Vdc



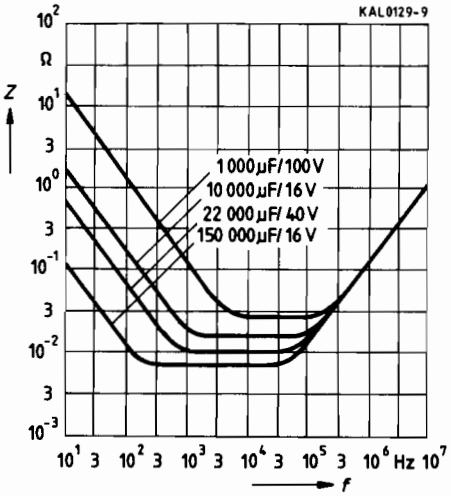

| $V_R$ (Vdc) | 16 | 25; 40 | 63 | 100 |
|---|---|---|---|---|
| $d$ = 35,7 mm | a | a | b | c |
| $d \geq$ 51,6 mm | a | a | a | a |

**Equivalent series resistance *ESR***
versus frequency *f*
Typical behavior
$V_R \geq 160$ Vdc




| $d$ (mm) | 35,7 | 51,6 | 64,3 | 76,9 | 91,0 |
|---|---|---|---|---|---|
| Curve | d | c | b | a | a |

**Impedance *Z***
versus frequency *f*
Typical behavior
$V_R \leq 100$ Vdc




**Impedance *Z***
versus frequency *f*
Typical behavior
$V_R \geq 160$ Vdc