

**GP grade**

**Standard type with high ripple current capability**

**Rated voltage up to 500 V–**

**Construction**

- Charge-discharge proof, polar
- Aluminum case, fully insulated
- Overload protection by preset break point in case
- Solder pin mounting on printed circuit boards, pins fit standardized spacings on PCB
- Negative pole brought out to solder pin, but not insulated from case

**Features**

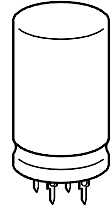
- Standard type with high ripple current capability
- Welded terminal connections ensure secure contacts and high reliability
- Low series resistance and low self-inductance
- Pinning ensures correct insertion

**Applications**

- Preferred components for switch-mode power supplies in consumer electronics
- Industrial applications, e.g. control systems

**Specifications and characteristics in brief**

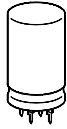
|   | B 41 306  | B 43 306   |
|---|---|--|
| Rated voltage $U_R$                         | 16 ... 100 V–   | 250 ... 500 V–   |
| Spitzenspannung $U_S$                       | $1,15 \cdot U_R$  | $1,15 \cdot U_R$ (for $U_R \leq 250$ V–)<br>$1,10 \cdot U_R$ (for $U_R \geq 385$ V–) |
| Rated capacitance $C_R$                     | 470 ... 47 000 $\mu$ F  | 33 ... 1 000 $\mu$ F   |
| Capacitance tolerance                       | – 10/+ 50 % $\triangleq$ T  | – 10/+ 50 % $\triangleq$ T   |
| Useful life                                 |   |  |
| 40 °C, $U_R$                                | > 200 000 h ( $1,5 \cdot I_{-R,85^\circ C}$ )   | > 200 000 h ( $1,7 \cdot I_{-R,85^\circ C}$ )  |
| 85 °C, $U_R$ ; $I_{-R}$                     | > 4 000 h   | > 5 000 h  |
| Failure percentage                          | $\leq 1$ %<br>(during useful life)  | $\leq 1$ %<br>(during useful life)   |
| Failure rate                                | $\leq 40$ fit<br>( $\leq 40 \cdot 10^{-9}$ /h)  | $\leq 40$ fit<br>( $\leq 40 \cdot 10^{-9}$ /h)                                       |
| Voltage endurance test                      | 2 000 h, 85 °C<br>(at $U_R$ )   | 2 000 h, 85 °C<br>(at $U_R$ )  |
| Leakage current $I_{lka}$<br>(5 min, 20 °C) | $I_{lka} \leq 0,3 \mu A \cdot \left( \frac{C_R}{\mu F} \cdot \frac{U_R}{V} \right)^{0,7} + 4 \mu A$ |  |



KAL0273–2

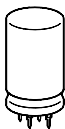
**Not for new design**

**B 41 306**  
**B 43 306**



**Specifications and characteristics in brief**

|                           | B 41 306  | B 43 306 |
|---------------------------|---|----------|
| Self-inductance $L_{ESL}$ | approx. 10 nH   |          |
| IEC climatic category     | in accordance with IEC 68-1<br>$\leq 385\text{ V-}$ : 40/085/56 ( $-40\text{ }^{\circ}\text{C}/+85\text{ }^{\circ}\text{C}$ , 56 days damp heat test)<br>$\geq 400\text{ V-}$ : 25/085/56 ( $-25\text{ }^{\circ}\text{C}/+85\text{ }^{\circ}\text{C}$ , 56 days damp heat test) |          |
| Detail specification      | similar to CECC 30 301-047  |          |
| Sectional specification   | IEC 384-4   |          |
| Vibration resistance      | in accordance with IEC 68-2-6, test Fc:<br>frequency range 10 ... 55 Hz, duration $3 \times 2\text{ h}$<br>for $d = 25\text{ mm}$ : displacement amplitude 0,75 mm, acceleration max. 10 g<br>for $d \geq 30\text{ mm}$ : displacement amplitude 0,35 mm, acceleration max. 5 g |          |



**B 41 306**  
**B 43 306**

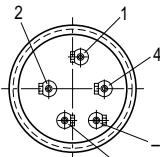
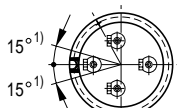
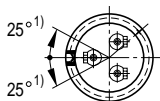
**Not for new design**

**Dimensional drawing**

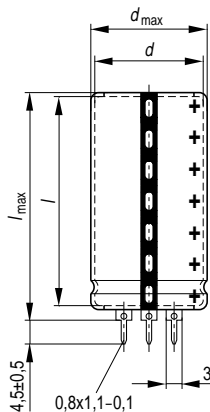
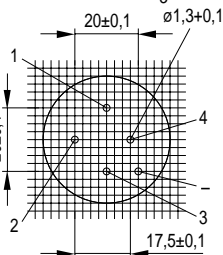
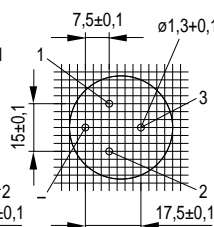
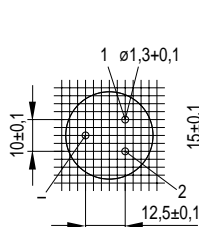
$d = 25 \text{ mm}$

$d = 30 \text{ and } 35 \text{ mm}$

$d = 40 \text{ mm}$



Mounting holes (view onto solder side)



KAL0402-Q

For  $d = 25$  and  $30 \text{ mm}$ : Plus and minus pole markings on the shrunk-on insulating sleeve.

For  $d = 35$  and  $40 \text{ mm}$ : Pole markings on the terminal. Plus: 1; Minus: -

All pin holes must be drilled into the PC-board, since the unconnected pins serve as mountings. These pins must be soldered to isolated pads or pads with the same potential as the negative pole.

| Dimensions (mm) |                            | Approximate weight (g) | Packing units Pieces |
|-----------------|----------------------------|------------------------|----------------------|
| $d \times l$    | $d_{\max} \times l_{\max}$ |                        |                      |
| $25 \times 30$  | $25,8 \times 34$           | 22                     | 384                  |
| $25 \times 35$  | $25,8 \times 39$           | 22                     | 256                  |
| $25 \times 40$  | $25,8 \times 44$           | 29                     | 256                  |
| $30 \times 35$  | $30,8 \times 39$           | 32                     | 240                  |
| $30 \times 40$  | $30,8 \times 44$           | 36                     | 160                  |
| $30 \times 45$  | $30,8 \times 49$           | 36                     | 160                  |
| $30 \times 50$  | $30,8 \times 54$           | 42                     | 160                  |
| $30 \times 55$  | $30,8 \times 59$           | 46                     | 160                  |
| $30 \times 70$  | $30,8 \times 74$           | 58                     | 80                   |
| $35 \times 45$  | $35,8 \times 49$           | 53                     | 144                  |
| $35 \times 50$  | $35,8 \times 54$           | 59                     | 44                   |
| $40 \times 50$  | $40,8 \times 54$           | 76                     | 96                   |
| $40 \times 55$  | $40,8 \times 59$           | 83                     | 96                   |
| $40 \times 70$  | $40,8 \times 74$           | 103                    | 48                   |
| $40 \times 100$ | $40,8 \times 104$          | 153                    | 48                   |
| $40 \times 105$ | $40,8 \times 109$          | 160                    | 48                   |

1) Permissible range of positions for pole identification marks.

**Not for new design**

**B 41 306**  
**B 43 306**



**Overview of available types**

**Type B 41 306**

|                  |                                   |         |         |         |         |
|------------------|-----------------------------------|---------|---------|---------|---------|
| $U_R$ (V-)       | 16                                | 25      | 40      | 63      | 100     |
| $C_R$ ( $\mu$ F) | Case dimensions $d \times l$ (mm) |         |         |         |         |
| 470              |                                   |         |         |         | 25 × 40 |
| 1 000            |                                   |         |         | 25 × 40 | 30 × 40 |
| 2 200            |                                   | 25 × 30 | 30 × 40 | 30 × 40 | 35 × 50 |
| 4 700            | 25 × 30                           | 30 × 40 | 30 × 40 | 35 × 50 | 40 × 70 |
| 10 000           | 30 × 40                           | 30 × 50 | 30 × 50 | 40 × 70 |         |
| 22 000           | 30 × 70                           | 40 × 70 |         |         |         |
| 47 000           | 40 × 70                           |         |         |         |         |

**Type B 43 306**

|                  |                                   |                    |          |          |          |
|------------------|-----------------------------------|--------------------|----------|----------|----------|
| $U_R$ (V-)       | 250                               | 385                | 400      | 450      | 500      |
| $C_R$ ( $\mu$ F) | Case dimensions $d \times l$ (mm) |                    |          |          |          |
| 33               |                                   |                    |          |          | 25 × 35  |
| 47               |                                   |                    |          |          | 30 × 35  |
| 68               |                                   |                    |          | 30 × 35  | 30 × 40  |
| 100              | 25 × 40                           | 30 × 40            | 30 × 35  | 30 × 40  | 30 × 55  |
| 150              |                                   | 30 × 40            | 30 × 35  | 30 × 45  | 35 × 50  |
| 220              | 30 × 40                           | 30 × 40<br>30 × 50 | 30 × 45  | 30 × 55  | 40 × 50  |
| 330              |                                   | 35 × 45            |          |          | 40 × 70  |
| 470              | 30 × 50                           | 40 × 70            | 40 × 50  | 40 × 55  | 40 × 100 |
| 1 000            | 40 × 70                           | 40 × 100           | 40 × 100 | 40 × 105 |          |

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



**B 41 306**  
**B 43 306**

**Not for new design**

**Technical data and ordering codes**

| $U_R$          | $C_R$  | Case dimensions<br>$d \times l$<br>mm | $R_{ESR, typ}$<br>100 Hz<br>20 °C<br>mΩ | $R_{ESR, max}$<br>100 Hz<br>20 °C<br>mΩ | $Z_{max}$<br>10 kHz<br>20 °C<br>mΩ | $I_{-max}$<br>100 Hz<br>40 °C<br>A | $I_{-R}$<br>100 Hz<br>85 °C<br>A | Ordering code 1)<br><br>Short code |
|----------------|--------|---------------------------------------|---|---|------------------------------------|------------------------------------|----------------------------------|------------------------------------|
| <b>B41306-</b> |        |                                       |   |   |                                    |                                    |                                  |                                    |
| 16             | 4 700  | 25 × 30                               | 48                                      | 95                                      | 81                                 | 5,5                                | 1,9                              | -F4478-T                           |
|                | 10 000 | 30 × 40                               | 34                                      | 63                                      | 54                                 | 7,5                                | 2,6                              | -E4109-T                           |
|                | 22 000 | 30 × 70                               | 24                                      | 41                                      | 36                                 | 11                                 | 3,7                              | -E4229-T                           |
|                | 47 000 | 40 × 70                               | 17                                      | 30                                      | 27                                 | 15                                 | 5,0                              | -E4479-T                           |
| 25             | 2 200  | 25 × 30                               | 60                                      | 112                                     | 90                                 | 4,9                                | 1,7                              | -F5228-T                           |
|                | 4 700  | 30 × 40                               | 39                                      | 68                                      | 54                                 | 7,0                                | 2,4                              | -E5478-T                           |
|                | 10 000 | 30 × 50                               | 26                                      | 47                                      | 36                                 | 9,3                                | 3,2                              | -E5109-T                           |
|                | 22 000 | 40 × 70                               | 19                                      | 32                                      | 27                                 | 14                                 | 4,7                              | -E5229-T                           |
| 40             | 2 200  | 30 × 40                               | 48                                      | 86                                      | 72                                 | 6,4                                | 2,2                              | -E7228-T                           |
|                | 4 700  | 30 × 40                               | 30                                      | 54                                      | 45                                 | 8,1                                | 2,8                              | -E7478-T                           |
|                | 10 000 | 30 × 50                               | 20                                      | 36                                      | 31                                 | 12                                 | 3,2                              | -F7109-T                           |
| 63             | 1 000  | 25 × 40                               | 75                                      | 135                                     | 83                                 | 4,6                                | 1,6                              | -E8108-T                           |
|                | 2 200  | 30 × 40                               | 44                                      | 77                                      | 54                                 | 6,7                                | 2,3                              | -E8228-T                           |
|                | 4 700  | 35 × 50                               | 27                                      | 49                                      | 36                                 | 9,9                                | 3,4                              | -E8478-T                           |
|                | 10 000 | 40 × 70                               | 19                                      | 32                                      | 27                                 | 15                                 | 4,4                              | -F8109-T                           |
| 100            | 470    | 25 × 40                               | 110                                     | 234                                     | 108                                | 3,8                                | 1,3                              | -E9477-T                           |
|                | 1 000  | 30 × 40                               | 67                                      | 126                                     | 63                                 | 5,2                                | 1,8                              | -E9108-T                           |
|                | 2 200  | 35 × 50                               | 38                                      | 72                                      | 40                                 | 8,4                                | 2,9                              | -E9228-T                           |
|                | 4 700  | 40 × 70                               | 24                                      | 45                                      | 27                                 | 12                                 | 4,2                              | -E9478-T                           |
| <b>B43306-</b> |        |                                       |   |   |                                    |                                    |                                  |                                    |
| 250            | 100    | 25 × 40                               | 540                                     | 1350                                    | 1100                               | 1,7                                | 0,60                             | -E2107-T                           |
|                | 220    | 30 × 40                               | 250                                     | 630                                     | 500                                | 2,9                                | 1,0                              | -E2227-T                           |
|                | 470    | 30 × 50                               | 120                                     | 300                                     | 240                                | 3,8                                | 1,3                              | -F2477-T                           |
|                | 1 000  | 40 × 70                               | 54                                      | 160                                     | 120                                | 8,1                                | 2,8                              | -E2108-T                           |
| 385            | 100    | 30 × 40                               | 470                                     | 1180                                    | 900                                | 2,0                                | 0,70                             | -E107-T                            |
|                | 150    | 30 × 40                               | 320                                     | 800                                     | 600                                | 2,3                                | 0,80                             | -E157-T                            |
|                | 220    | 30 × 40                               | 220                                     | 550                                     | 410                                | 3,2                                | 1,1                              | -G227-T                            |
|                | 220    | 30 × 50                               | 220                                     | 550                                     | 410                                | 3,2                                | 1,1                              | -E227-T                            |
|                | 330    | 35 × 45                               | 140                                     | 370                                     | 280                                | 4,1                                | 1,4                              | -E337-T                            |
|                | 470    | 40 × 70                               | 100                                     | 250                                     | 190                                | 5,8                                | 2,0                              | -E477-T                            |
|                | 1 000  | 40 × 100                              | 47                                      | 120                                     | 90                                 | 9,6                                | 3,3                              | -E108-T                            |

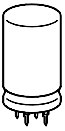
1) For instructions on how to determine ordering codes, refer to [page 161](#).



Technical data and ordering codes

| $U_R$          | $C_R$ | Case dimensions<br>$d \times l$<br>mm | $R_{ESR, typ}$<br>100 Hz<br>20 °C<br>mΩ | $R_{ESR, max}$<br>100 Hz<br>20 °C<br>mΩ | $Z_{max}$<br>10 kHz<br>20 °C<br>mΩ | $I_{max}$<br>100 Hz<br>40 °C<br>A | $I_{-R}$<br>100 Hz<br>85 °C<br>A | Ordering code 1)<br><br>Short code |
|----------------|-------|---------------------------------------|---|---|------------------------------------|-----------------------------------|----------------------------------|------------------------------------|
| <b>B43306-</b> |       |                                       |   |   |                                    |                                   |                                  |                                    |
| 400            | 100   | 30 × 35                               | 890                                     | 1500                                    | 1250                               | 1,8                               | 0,61                             | -F107-T                            |
|                | 150   | 30 × 35                               | 590                                     | 980                                     | 820                                | 2,2                               | 0,75                             | -F157-T                            |
|                | 220   | 30 × 45                               | 400                                     | 670                                     | 560                                | 2,8                               | 0,99                             | -F227-T                            |
|                | 470   | 40 × 50                               | 190                                     | 320                                     | 270                                | 5,1                               | 1,8                              | -F477-T                            |
|                | 1 000 | 40 × 100                              | 88                                      | 150                                     | 130                                | 9,7                               | 3,4                              | -F108-T                            |
| 450            | 68    | 30 × 35                               | 1400                                    | 3300                                    | 2750                               | 1,5                               | 0,50                             | -A5686-T                           |
|                | 100   | 30 × 40                               | 960                                     | 2200                                    | 1830                               | 1,9                               | 0,64                             | -B5107-T                           |
|                | 150   | 30 × 45                               | 640                                     | 1500                                    | 1250                               | 2,4                               | 0,82                             | -A5157-T                           |
|                | 220   | 30 × 55                               | 440                                     | 1000                                    | 830                                | 3,1                               | 1,1                              | -B5227-T                           |
|                | 470   | 40 × 55                               | 210                                     | 470                                     | 390                                | 6,3                               | 1,8                              | -A5477-T                           |
|                | 1 000 | 40 × 105                              | 96                                      | 220                                     | 180                                | 9,9                               | 3,4                              | -A5108-T                           |
| 500            | 33    | 25 × 35                               | 2900                                    | 6500                                    | 5400                               | 0,90                              | 0,31                             | -A6336-T                           |
|                | 47    | 30 × 35                               | 2100                                    | 4700                                    | 3900                               | 1,2                               | 0,40                             | -A6476-T                           |
|                | 68    | 30 × 40                               | 1400                                    | 3300                                    | 2700                               | 1,5                               | 0,51                             | -A6686-T                           |
|                | 100   | 30 × 55                               | 960                                     | 2200                                    | 1800                               | 2,0                               | 0,69                             | -A6107-T                           |
|                | 150   | 35 × 50                               | 640                                     | 1500                                    | 1300                               | 2,6                               | 0,90                             | -A6157-T                           |
|                | 220   | 40 × 50                               | 440                                     | 1000                                    | 830                                | 3,3                               | 1,1                              | -A6227-T                           |
|                | 330   | 40 × 70                               | 290                                     | 650                                     | 540                                | 4,6                               | 1,6                              | -A6337-T                           |
|                | 470   | 40 × 100                              | 210                                     | 470                                     | 390                                | 6,4                               | 2,2                              | -A6477-T                           |

1) To obtain the required ordering code, prefix the type number to the short code. E. g.: B43306-F107-T  
B41306-... ( $U_R = 16 \dots 100$  V-)  
B43306-... ( $U_R = 250 \dots 500$  V-)



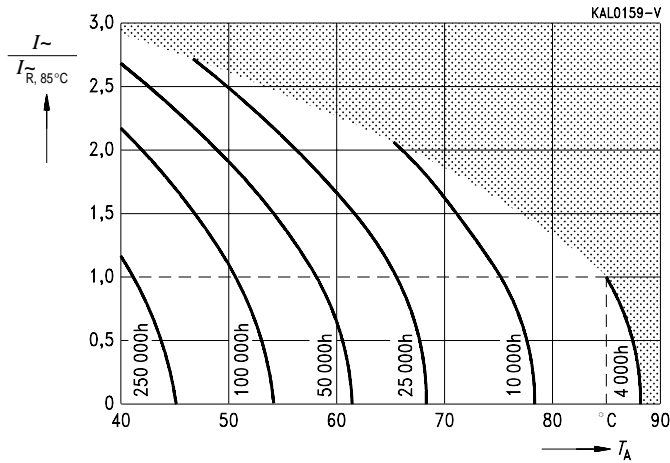
B 41 306  
B 43 306

Not for new design

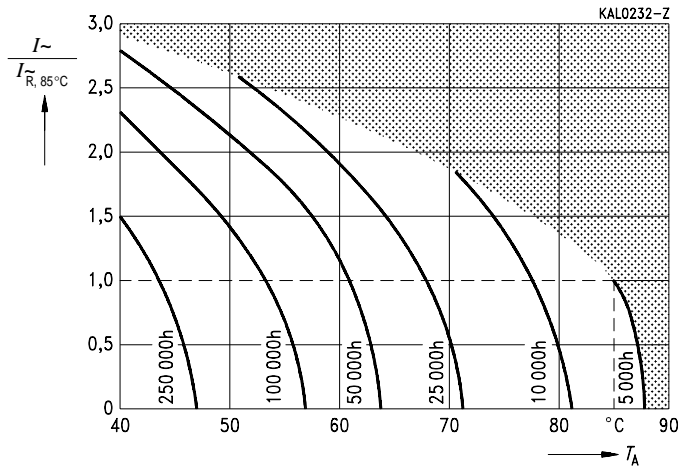
**Useful life**

versus ambient temperature  $T_A$  under ripple current operating conditions <sup>1)</sup>

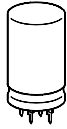
$U_R = 16 \dots 100 \text{ V-}$



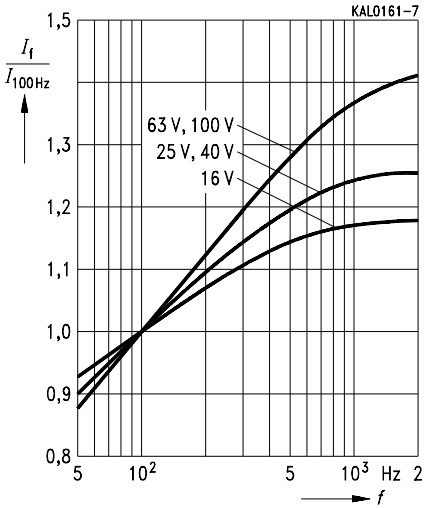
$U_R = 250 \dots 500 \text{ V-}$



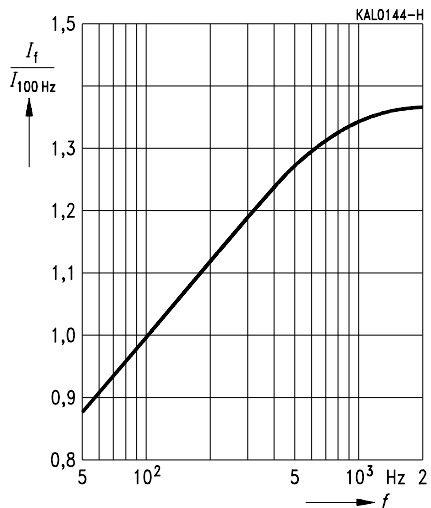
1) Refer to [page 34](#) for an explanation on how to interpret the useful life graphs.



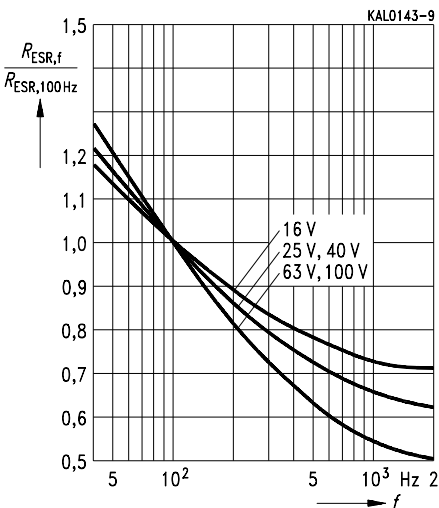
**Permissible ripple current  $I_r$**   
versus frequency  $f$   
 $U_R \leq 100 \text{ V-}$



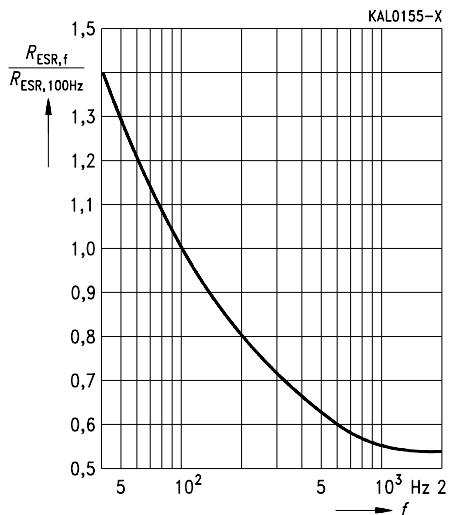
**Permissible ripple current  $I_r$**   
versus frequency  $f$   
 $U_R \geq 250 \text{ V-}$



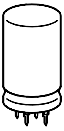
**Equivalent series resistance  $R_{ESR}$**   
versus frequency  $f$   
Typical behavior  
 $U_R \leq 100 \text{ V-}$



**Equivalent series resistance  $R_{ESR}$**   
versus frequency  $f$   
Typical behavior  
 $U_R \geq 250 \text{ V-}$



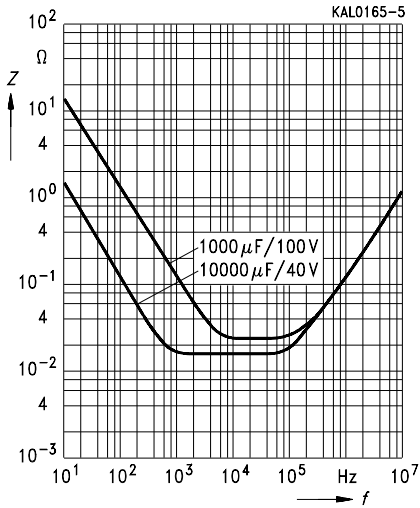




B 41 306  
B 43 306

Not for new design

**Impedance  $Z$**   
versus frequency  $f$   
Typical behavior  
 $U_R \leq 100 \text{ V-}$



**Impedance  $Z$**   
versus frequency  $f$   
Typical behavior  
 $U_R \geq 250 \text{ V-}$

