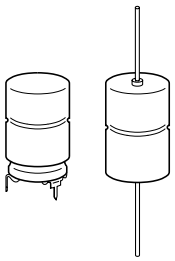
**SIKOREL®**



KAL0573-K

### Applications

- Compact design for automotive applications

### Features

- 150 °C operating temperature up to 55 V
- High ripple current capability
- High vibration resistance
- Long useful life
- Miniaturized design
- Optimized CU value
- Shelf life up to 15 years

### Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Negative pole connected to case

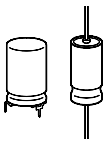
### Terminals

- Axial leads, welded to ensure perfect electrical contact
- Also available with soldering stars

### Taping and packing

- Axial-lead capacitors will be delivered in pallet package.
  Capacitors with $d \times l \leq 16 \times 30$ mm are also available taped on reel.
- Solder-star capacitors are packed in cardboard..

For details on taping and packing, refer to page 342.



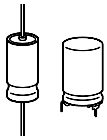
**B41695 / B41795**

**Compact – Up to 150 °C**

**Specifications and characteristics in brief**

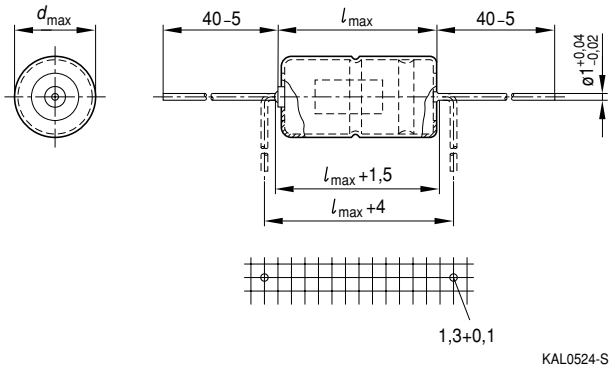
| | | | | | | |
|---|---|---|---|---|---|---|
| Rated voltage $U_R$ | 25 … 63 VDC | | | | | |
| Surge voltage $U_S$ | 1,15 · $U_R$ | | | | | |
| Rated capacitance $C_R$ | 220 … 2 200 µF | | | | | |
| Capacitance tolerance | – 10/+ 30 % ≙ Q | | | | | |
| Leakage current $I_L$ (5 min, 20 °C) | $I_L \leq 0{,}006\ \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{U_R}{V}\right) + 4\ \mu A$ | | | | | |
| Self-inductance *ESL*[1)] | Diameter *d* | | 12 mm | 14 mm | 16 mm | 18 mm |
| | Length *l* | Terminal | Approx. *ESL* (nH) | | | |
| | 25 mm | axial / solder star | — / — | 22 / 6 | 26 / 7 | — / — |
| | 30 mm | axial / solder star | 21 / 6 | 24 / 7 | 29 / 8 | 34 / 10 |
| | 39 mm | axial / solder star | — / — | — / — | 33 / 9 | 38 / 11 |
| Useful life<br>150 °C; $U_{op}$; 0,5 $I_{\sim R}$*)<br>140 °C; $U_R$; $I_{\sim R}$<br>125 °C; $U_R$; $I_{\sim R}$<br>85 °C; $U_R$; $I_{\sim max}$<br>40 °C; $U_R$; 2,1 · $I_{\sim R}$<br>*) $U_{op}$, see useful life graph, page 322 | <br>> 1 000 h<br>> 1 000 h<br>> 3 000 h<br>> 8 000 h<br>> 200 000 h | Requirements:<br>$\Delta C/C$ ≤ ± 30 % of initial value<br>*ESR* ≤ 3 times initial specified limit<br>$I_L$ ≤ initial specified limit<br>Failure percentage: ≤ 0,5 %<br>Failure rate: ≤ 10 fit (≤ 20 · $10^{-9}$/h)<br>(for definiton "fit", refer to chapter *"Quality"*, page 62) | | | | |
| Voltage endurance test<br>125 °C; $U_R$ | 2 000 h | Post test requirements:<br>ΔC/C ≤ ± 10 % of initial value<br>*ESR* ≤ 1,3 % of initial specified limit<br>$I_L$ ≤ initial specified limit | | | | |
| Vibration resistance | To IEC 60068-2-6, test Fc:<br>displacement amplitude 1,5 mm, at 10 Hz to 2 kHz,<br>acceleration max. 20 *g*, duration 3 × 2 h | | | | | |
| IEC climatic category | To IEC 60068-1:<br>55/125/56 (– 55 °C/+ 125 °C/56 days damp heat test) | | | | | |
| Detail specification | Similar to CECC 30301-802 | | | | | |
| Sectional specification | IEC 60384-4 | | | | | |

1) If optimum circuit design is used, the values are lower by 30 %.



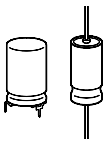
## Dimensional drawings

### Axial-lead capacitor

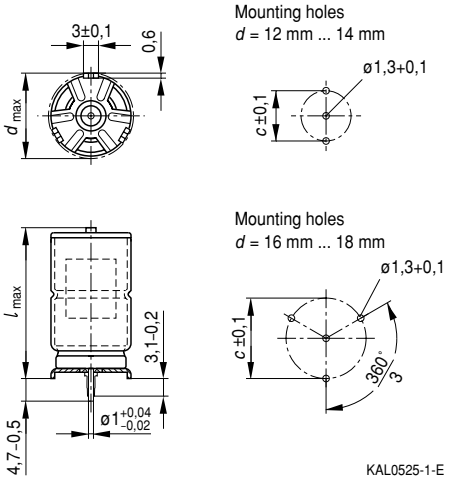



## Dimensions, weights and packing units

| $d \times l$ | $d_{max} \times l_{max}$ | Approx. weight | Packing units (pieces) | |
|---|---|---|---|---|
| mm | mm | g | Pallet | Reel |
| 12 × 30 | 12,5 × 30,5 | 5,1 | 288 | 450 |
| 14 × 30 | 14,5 × 30,5 | 6,8 | 200 | 350 |
| 16 × 30 | 16,5 × 30,5 | 8,9 | 180 | 250 |
| 18 × 30 | 18,5 × 30,5 | 11,1 | 160 | — |
| 18 × 39 | 18,5 × 40 | 14,7 | 160 | — |



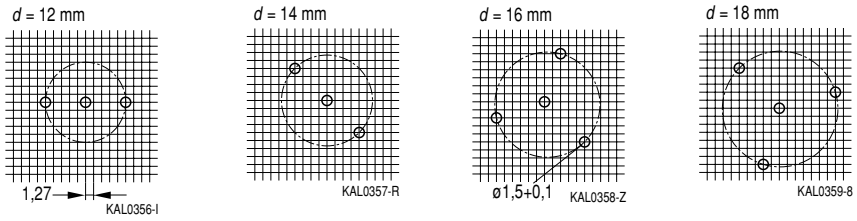
**Soldering star capacitors**




Soldering star is connected to the negative pole

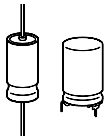
The PC-board hole arrangement specified above is based on circular arcs.

If, however, the mounting holes have to be matched to a standard drilling raster, a spacing of 1,27 mm ($^1/_{20}''$) has proved to be sufficiently accurate if the following arrangements are used:




**Dimensions, weights and packing units**

| $d \times l$ mm | $d_{max} \times l_{max}$ mm | $c \pm 0,1$ mm | Approx. weight g | Packing units pieces |
|---|---|---|---|---|
| 12 × 30 | 13,5 × 32 | 12,5 | 5,4 | 480 |
| 14 × 30 | 15,5 × 32 | 14,5 | 7,2 | 480 |
| 16 × 30 | 17,5 × 32 | 16,5 | 9,4 | 300 |
| 18 × 30 | 19,5 × 32 | 18,5 | 11,8 | 300 |
| 18 × 39 | 19,5 × 41,5 | 18,5 | 15,4 | 200 |

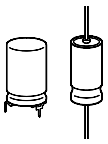


**Overview of available types**

| $U_R$ (VDC) | 25 | 40 | 63 |
|---|---|---|---|
| $C_R$ (µF) | Case dimensions $d \times l$ (mm) | | |
| 220 | | | 12 × 30 |
| 470 | | 12 × 30 | 16 × 30 |
| 680 | 12 × 30 | | |
| 1 000 | 14 × 25 | 16 × 30 | 18 × 39 |
| 2 200 | 18 × 30 | 18 × 39 | |

**Case dimensions and ordering codes**

| $U_R$ | $C_R$ | Case dim. $d \times l$ | Ordering code Axial | Axial | Soldering star |
|---|---|---|---|---|---|
| VDC | µF | mm | pallet package | reel | |
| 25 | 680 | 12 × 30 | B41695A5687Q007 | B41695A5687Q009 | B41795A5687Q000 |
| | 1 000 | 14 × 25 | B41695A5108Q007 | B41695A5108Q009 | B41795A5108Q000 |
| | 2 200 | 18 × 30 | B41695A5228Q007 | | B41795A5228Q000 |
| 40 | 470 | 12 × 30 | B41695A7477Q007 | B41695A7477Q009 | B41795A7477Q000 |
| | 1 000 | 16 × 30 | B41695A7108Q007 | B41695A7108Q009 | B41795A7108Q000 |
| | 2 200 | 18 × 39 | B41695A7228Q007 | | B41795A7228Q000 |
| 63 | 220 | 12 × 30 | B41695A8227Q007 | B41695A8277Q009 | B41795A8227Q000 |
| | 470 | 16 × 30 | B41695A8477Q007 | B41695A8477Q009 | B41795A8477Q000 |
| | 1 000 | 18 × 39 | B41695A8108Q007 | | B41795A8108Q000 |

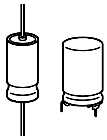


**B41695 / B41795**

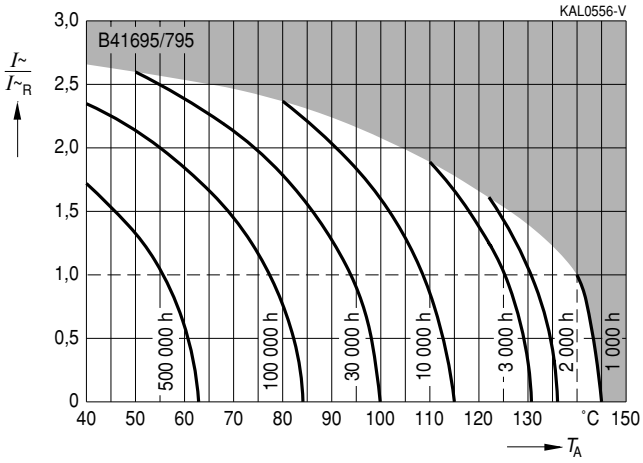
**Compact – Up to 150 °C**

**Technical data**

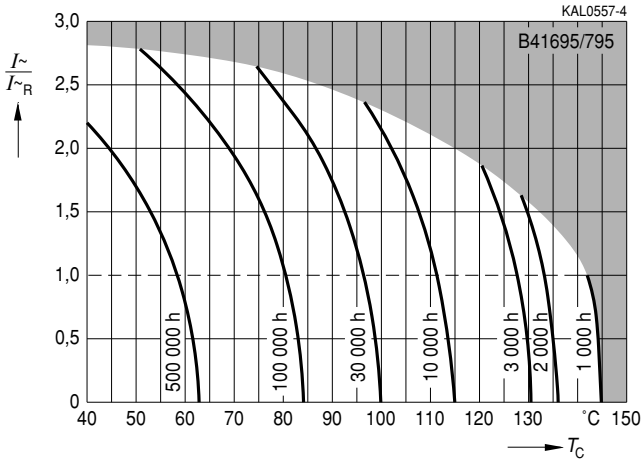
| $C_R$ 100 Hz 20 °C µF | $ESR_{typ}$ 100 Hz 20 °C mΩ | $ESR_{max}$ 100 Hz 20 °C mΩ | $ESR_{max}$ 100 Hz –40 °C Ω | $ESR_{max}$ 10 kHz 20 °C mΩ | $Z_{max}$ 100 kHz 20 °C mΩ | $I_{\sim max}$ 10 kHz 40 °C A | $I_{\sim max}$ 10 kHz 85 °C A | $I_{\sim R}$ 10 kHz 125 °C A | $I_{\sim max}$ 10 kHz 150 °C A (*) |
|---|---|---|---|---|---|---|---|---|---|
| 25 VDC | | | | | | | | | |
| 680 | 230 | 380 | 2,80 | 295 | 270 | 3,30 | 2,85 | 1,25 | 0,62 |
| 1 000 | 160 | 260 | 1,90 | 210 | 200 | 3,70 | 3,20 | 1,40 | 0,70 |
| 2 200 | 80 | 130 | 0,95 | 105 | 100 | 6,25 | 5,40 | 2,35 | 1,17 (*) at 20 V |
| 40 VDC | | | | | | | | | |
| 470 | 210 | 350 | 3,40 | 240 | 225 | 3,65 | 3,15 | 1,40 | 0,70 |
| 1 000 | 110 | 170 | 1,70 | 125 | 120 | 5,50 | 4,80 | 2,10 | 1,05 |
| 2 200 | 60 | 90 | 0,80 | 60 | 60 | 9,00 | 7,80 | 3,40 | 1,70 (*) at 35 V |
| 63 VDC | | | | | | | | | |
| 220 | 280 | 460 | 3,80 | 255 | 240 | 3,45 | 3,00 | 1,30 | 0,65 |
| 470 | 140 | 220 | 2,10 | 130 | 120 | 5,30 | 4,60 | 2,00 | 1,00 |
| 1 000 | 70 | 110 | 1,00 | 70 | 60 | 8,90 | 7,70 | 3,35 | 1,67 (*) at 55 V |



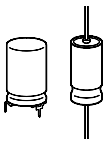
**Useful life**
depending on ambient temperature $T_A$ under ripple current operating conditions at $U_R$ [1)]




**Useful life**
depending on case temperature $T_C$ under ripple current operating conditions at $U_R$ [1)]




1) Refer to page 40 for an explanation on how to interpret the useful life graphs.



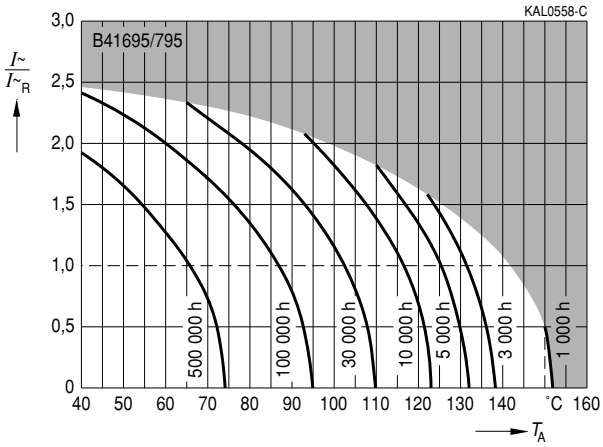
**Useful life**

depending on ambient temperature $T_A$ under ripple current operating conditions at $U_{op}$[1)]

$U_R$ = 25 V: $U_{op} \leq 20$ V

$U_R$ = 40 V: $U_{op} \leq 35$ V

$U_R$ = 63 V: $U_{op} \leq 55$ V



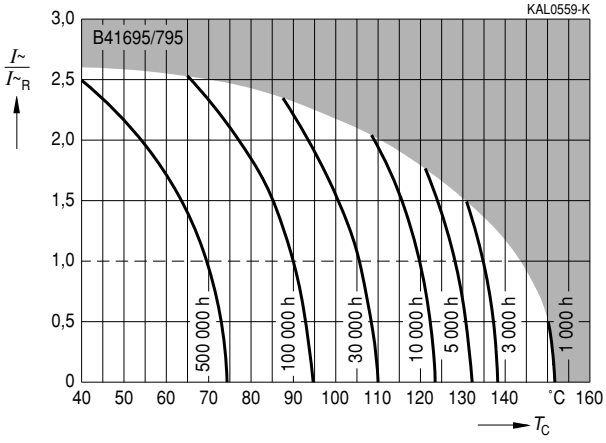

**Useful life**

depending on case temperature $T_C$ under ripple current operating conditions at $U_{op}$[1)]

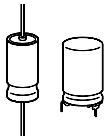
$U_R$ = 25 V: $U_{op} \leq 20$ V

$U_R$ = 40 V: $U_{op} \leq 35$ V

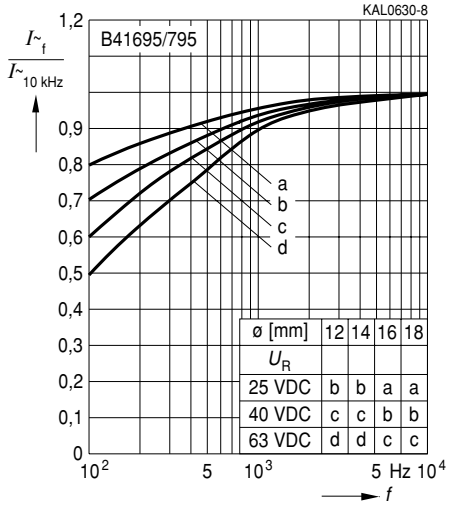
$U_R$ = 63 V: $U_{op} \leq 55$ V



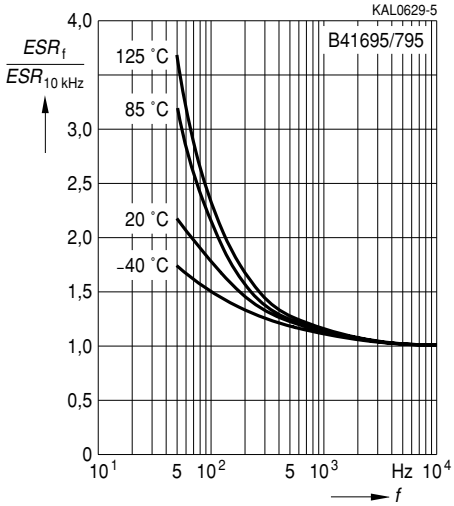

1) Refer to page 40 for an explanation on how to interpret the useful life graphs.



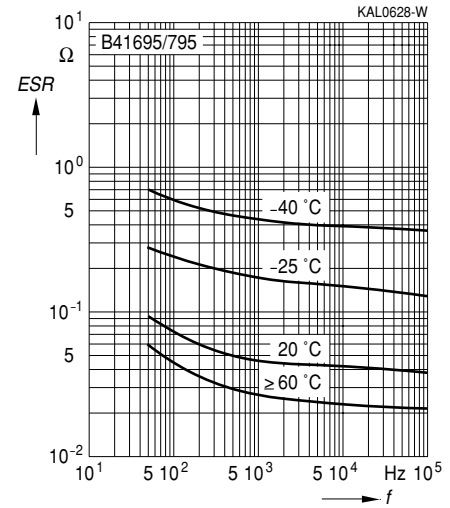
**Frequency factor of permissible ripple current *I~***
versus frequency *f*



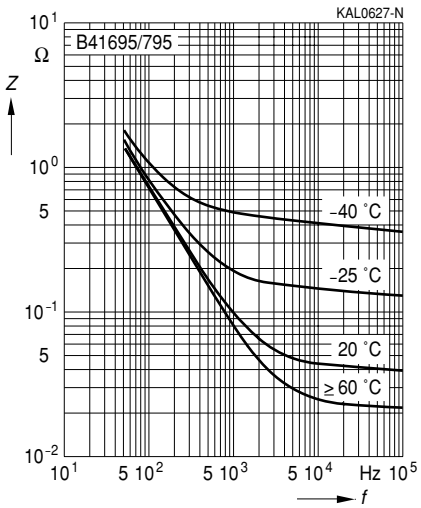

**Frequency characteristics of *ESR***
at different temperatures
Typical behavior




**Equivalent series resistance *ESR***
versus frequency at different temperatures
Typical behavior for 2 200 µF/40 V




**Impedance Z**
versus frequency *f* at different temperatures
Typical behavior for 2 200 µF/40 V



**Herausgegeben von EPCOS AG**
**Unternehmenskommunikation, Postfach 80 17 09, 81617 München, DEUTSCHLAND**
**☎ ++49 89 636 09, FAX (0 89) 636-2 26 89**



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