


**Construction**

- Radial leads
- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Minus pole marking on case surface
- Stand off rubber seal

**Features**

- Miniaturized dimensions
- High CV product, i. e. very compact
- Replaces all old series B41822/B43822/B41835/B43835

**Applications**

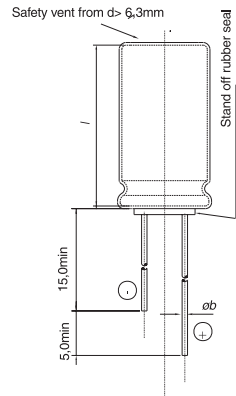
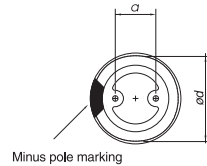
- GP (general-purpose) applications in the entertainment industry
- Semi-professional to professional application range
- For filtering, coupling and pulse circuits

**Delivery Mode (packing)**

Special terminals configurations and packing

- Bulk
- Ammo
- Cut
- Kinked
- PAPR

Refer to page 20 for information and examples on how to order them.


**Specifications and characteristics in brief**

| Type                     |       | B41821   | B43821   |
|--------------------------|-------|--|--|
| Rated voltage            | $U_N$ | 6,3 ... 100 Vdc  | 160 ... 450 Vdc  |
| Surge voltage            | $U_S$ | $1,15 \cdot U_N$   | $1,1 \cdot U_N$  |
| Rated capacitance        | $C_N$ | 0,1 ... 10000 $\mu\text{F}$                                      | 0,47 ... 560 $\mu\text{F}$                                       |
| Capacitance tolerance    |       | $\pm 20\%$ (M)   | $\pm 20\%$ (M)   |
| Useful life              | hrs   |  |  |
| 40°C, $U_N$              |       | $> 100\,000\text{ h}$ ( $1,3 \cdot I_{aC_N, 85^\circ\text{C}}$ ) | $> 100\,000\text{ h}$ ( $1,6 \cdot I_{aC_N, 85^\circ\text{C}}$ ) |
| 85°C, $U_N$ ; $I_{aC_N}$ |       | $> 2\,000\text{ h}$  | $> 3\,000\text{ h}$  |
| Fraction failure         | %     | $\leq 1\%$<br>(during the useful life)                           | $\leq 1\%$<br>(during the useful life)                           |


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**

|   |             |   |  |
|---|-------------|---|--|
| Failure rate                                  | fit         | $\leq 100$ fit<br>( $\leq 100 \cdot 10^{-9}/h$ )  | $\leq 100$ fit<br>( $\leq 100 \cdot 10^{-9}/h$ )               |
| Voltage endurance test                        | hrs         | 2000 h, 85°C<br>(at $U_N$ )<br><br>Evaluation criteria:<br>$\Delta C/C \leq \pm 30\%$ of initial measured value<br>$\tan \delta \leq 2$ times initial specified value<br>$I_L \leq$ initial specified value |  |
| Climatic category in accordance with IEC 68-1 | UCT/<br>LCT | 40/085/56   | 40/085/56 - $U_N \leq 250V$<br><br>25/085/56 - $U_N \geq 350V$ |
| Standards                                     |             | 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<br>10 ... 2000 Hz, acceleration max. 10 g, duration 3 x 2 h  |  |


**Overview of available types**
**Type B41821**

| $U_N$ (Vdc) | 6,3   | 10      | 16                | 25                | 35              | 50      | 63      | 100           |
|-------------|---|---------|-------------------|-------------------|-----------------|---------|---------|---------------|
| $C_N$ (µF)  | Case dimensions $\varnothing d \times l$ (mm) |         |                   |                   |                 |         |         |               |
| 0,1         |   |         |                   |                   |                 |         |         | 5x11          |
| 0,22        |   |         |                   |                   |                 |         |         | 5x11          |
| 0,33        |   |         |                   |                   |                 |         |         | 5x11          |
| 0,47        |   |         |                   |                   |                 |         |         | 5x11          |
| 0,68        |   |         |                   |                   |                 |         |         | 5x11          |
| 1           |   |         |                   |                   |                 |         |         | 5x11          |
| 1,5         |   |         |                   |                   |                 |         |         | 5x11          |
| 2,2         |   |         |                   |                   |                 |         |         | 5x11          |
| 3,3         |   |         |                   |                   |                 |         |         | 5x11          |
| 4,7         |   |         |                   |                   |                 |         |         | 5x11          |
| 6,8         |   |         |                   |                   |                 |         | 5x11    | 5x11          |
| 10          |   |         |                   |                   |                 | 5x11    | 5x11    | 6,3x11        |
| 22          |   |         |                   |                   |                 | 5x11    | 6,3x11  | 8x11          |
| 33          |   |         |                   |                   | 5x11            | 6,3x11  | 6,3x11  | 10x12,5       |
| 47          |   |         |                   | 5x11              | 5x11            | 6,3x11  | 8x11    | 10x12,5/10x16 |
| 68          |   |         | 5x11              | 6,3x11            | 6,3x11          | 8x11    | 10x12,5 | 10x16         |
| 100         |   | 5x11    | 5x11              | 6,3x11            | 6,3x11/<br>8x11 | 8x11    | 10x12,5 | 10x20         |
| 150         |   | 6,3x11  | 6,3x11            | 8x11              | 8x11            | 10x12,5 | 10x16   | 12,5x25       |
| 220         | 6,3x11  | 6,3x11  | 6,3x11/<br>8x11   | 8x11              | 8x11            | 10x12,5 | 10x16   | 12,5x25       |
| 270         | 6,3x11  | 8x11    | 8x11              | 10x12,5           | 10x12,5         | 10x16   | 10x20   | 16x25         |
| 330         | 6,3x11  | 8x11    | 8x11              | 10x12,5           | 10x12,5         | 10x16   | 10x20   | 16x25         |
| 470         | 8x11  | 8x11    | 10x12,5           | 10x12,5/<br>10x16 | 10x16           | 10x20   | 12,5x25 | 16x31,5       |
| 560         | 8x11  | 10x12,5 | 10x12,5           | 10x16             | 10x20           | 12,5x25 | 16x20   | 16x31,5       |
| 680         | 10x12,5                                       | 10x12,5 | 10x16             | 10x20             | 10x20           | 12,5x25 | 16x25   | 20x30         |
| 1 000       | 10x12,5                                       | 10x12,5 | 10x16             | 10x20             | 12,5x25         | 16x20   | 16x31,5 | 20x40         |
| 1 500       | 10x16   | 10x20   | 12,5x25           | 12,5x25           | 16x25           | 16x31,5 | 18x35   |               |
| 2 200       | 10x20   | 10x20   | 12,5x25/<br>16x15 | 16x20             | 16x31,5         | 18x35   | 20x40   |               |
| 3 300       | 10x20   | 12,5x25 | 16x25             | 16x25             | 18x31           | 18x40   |         |               |
| 4 700       | 12,5x25                                       | 16x20   | 16x25             | 16x31,5           | 18x40           | 22x40   |         |               |
| 6 800       |   | 16x31,5 | 18x31             | 18x40             | 22x40           |         |         |               |
| 8 200       |   | 18x31   | 20x30             | 22x35             |                 |         |         |               |
| 10 000      |   | 18x35   | 20x35             | 22x40             |                 |         |         |               |


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**
**Type B43821**

| $U_N$ (Vdc) | 160   | 200           | 250     | 350     | 400     | 450     |
|-------------|---|---------------|---------|---------|---------|---------|
| $C_N$ (μF)  | Case dimensions $\varnothing d \times l$ (mm) |               |         |         |         |         |
| 0,47        | 6,3x11  | 6,3x11        | 6,3x11  | 6,3x11  |         |         |
| 0,68        | 6,3x11  | 6,3x11        | 6,3x11  | 6,3x11  |         |         |
| 1           | 6,3x11  | 6,3x11        | 6,3x11  | 6,3x11  |         |         |
| 1,5         | 6,3x11  | 6,3x11        | 6,3x11  | 8x11    |         |         |
| 2,2         | 6,3x11  | 6,3x11        | 6,3x11  | 8x11    | 10x12,5 | 10x12,5 |
| 3,3         | 6,3x11  | 6,3x11        | 8x11    | 10x12,5 | 10x12,5 | 10x16   |
| 4,7         | 8x11  | 8x11          | 10x12,5 | 10x12,5 | 10x16   | 10x20   |
| 6,8         | 8x11  | 10x12,5       | 10x12,5 | 10x16   | 10x16   | 10x20   |
| 10          | 10x12,5                                       | 10x12,5/10x16 | 10x16   | 10x20   | 10x20   | 12,5x25 |
| 22          | 10x16   | 10x20         | 10x20   | 12,5x25 | 16x20   | 16x25   |
| 33          | 10x20   | 10x20/12,5x25 | 12,5x25 | 16x25   | 16x25   | 16x31,5 |
| 47          | 12,5x25                                       | 12,5x25       | 16x20   | 16x31,5 | 16x31,5 | 18x31   |
| 68          | 16x20   | 16x20         | 16x25   | 18x31   | 18x31   | 18x35   |
| 100         | 16x25   | 16x25         | 18x35   | 20x30   | 20x35   | 20x40   |
| 150         | 16x31,5                                       | 18x31         | 18x40   | 20x40   | 20x40   |         |
| 220         | 18x31   | 18x35         | 18x40   |         |         |         |
| 270         | 18x40   | 20x35         | 22x35   |         |         |         |
| 330         | 20x30   | 22x35         | 22x40   |         |         |         |
| 470         | 22x35   |               |         |         |         |         |
| 560         | 22x40   |               |         |         |         |         |

Other capacitance and voltage ratings are available upon request.


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**
**Technical data and ordering codes**

| $U_N$           | $C_N$                     | Case Dimensions                | $I_{L,max}$              | $\tan\delta_{max}$ | $ESR_{max}$                | $I_{ac,max}$               | Ordering code |
|-----------------|---------------------------|--------------------------------|--------------------------|--------------------|----------------------------|----------------------------|---------------|
| Vdc             | 120 Hz<br>20°C<br>$\mu F$ | $\varnothing d \times l$<br>mm | 5 min<br>20°C<br>$\mu A$ | 120 Hz<br>20°C     | 120 Hz<br>20°C<br>$\Omega$ | 120 Hz<br>85°C<br>mA (rms) | Short Code    |
| <b>B41821 –</b> |                           |                                |                          |                    |                            |                            |               |
| 6,3             | 220                       | 6,3 x 11                       | 14                       | 0,28               | 2,1                        | 200                        | -A2227-M      |
|                 | 270                       | 6,3 x 11                       | 17                       | 0,28               | 1,7                        | 210                        | -A2277-M      |
|                 | 330                       | 6,3 x 11                       | 21                       | 0,28               | 1,4                        | 270                        | -A2337-M      |
|                 | 470                       | 8 x 11                         | 30                       | 0,28               | 1,0                        | 330                        | -A2477-M      |
|                 | 560                       | 8 x 11                         | 35                       | 0,28               | 0,83                       | 360                        | -A2567-M      |
|                 | 680                       | 10 x 12,5                      | 43                       | 0,28               | 0,68                       | 460                        | -A2687-M      |
|                 | 1 000                     | 10 x 12,5                      | 63                       | 0,28               | 0,46                       | 560                        | -A2108-M      |
|                 | 1 500                     | 10 x 16                        | 95                       | 0,28               | 0,31                       | 750                        | -A2158-M      |
|                 | 2 200                     | 10 x 20                        | 139                      | 0,30               | 0,23                       | 950                        | -A2228-M      |
|                 | 3 300                     | 10 x 20                        | 208                      | 0,32               | 0,16                       | 1050                       | -A2338-M*     |
| 4 700           | 12,5 x 25                 | 296                            | 0,34                     | 0,12               | 1300                       | -A2478-M*                  |               |
| 10              | 100                       | 5 x 11                         | 10                       | 0,24               | 4,0                        | 120                        | -A3107-M      |
|                 | 150                       | 6,3 x 11                       | 15                       | 0,24               | 2,7                        | 160                        | -A3157-M      |
|                 | 220                       | 6,3 x 11                       | 22                       | 0,24               | 1,8                        | 220                        | -A3227-M      |
|                 | 270                       | 8 x 11                         | 27                       | 0,24               | 1,5                        | 255                        | -A3277-M      |
|                 | 330                       | 8 x 11                         | 33                       | 0,24               | 1,2                        | 280                        | -A3337-M      |
|                 | 470                       | 8 x 11                         | 47                       | 0,24               | 0,85                       | 400                        | -A3477-M      |
|                 | 560                       | 10 x 12,5                      | 56                       | 0,24               | 0,71                       | 420                        | -A3567-M      |
|                 | 680                       | 10 x 12,5                      | 68                       | 0,24               | 0,59                       | 460                        | -A3687-M      |
|                 | 1 000                     | 10 x 12,5                      | 100                      | 0,24               | 0,40                       | 640                        | -A3108-M      |
|                 | 1 500                     | 10 x 20                        | 150                      | 0,24               | 0,27                       | 730                        | -A3158-M      |
|                 | 2 200                     | 10 x 20                        | 220                      | 0,26               | 0,20                       | 1040                       | -A3228-M      |
|                 | 3 300                     | 12,5 x 25                      | 330                      | 0,28               | 0,14                       | 1450                       | -A3338-M      |
|                 | 4 700                     | 16 x 20                        | 470                      | 0,30               | 0,11                       | 1540                       | -A3478-M*     |
|                 | 6 800                     | 16 x 31,5                      | 680                      | 0,34               | 0,08                       | 2110                       | -A3688-M*     |
|                 | 8 200                     | 18 x 31                        | 820                      | 0,38               | 0,08                       | 2310                       | -A3828-M*     |
| 10 000          | 18 x 35                   | 1000                           | 0,42                     | 0,07               | 2520                       | -A3109-M*                  |               |

\* Type available under consult.

■ Preferred types.


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**

| $U_N$  | $C_N$                     | Case Dimensions                | $I_{Lmax}$               | $\tan\delta_{max}$ | $ESR_{max}$                | $I_{acmax}$                | Ordering code |
|--------|---------------------------|--------------------------------|--------------------------|--------------------|----------------------------|----------------------------|---------------|
| Vdc    | 120 Hz<br>20°C<br>$\mu F$ | $\varnothing d \times l$<br>mm | 5 min<br>20°C<br>$\mu A$ | 120 Hz<br>20°C     | 120 Hz<br>20°C<br>$\Omega$ | 120 Hz<br>85°C<br>mA (rms) | Short Code    |
| 16     | 68                        | 5 x 11                         | 11                       | 0,20               | 4,9                        | 90                         | -A4686-M      |
|        | 100                       | 5 x 11                         | 16                       | 0,20               | 3,3                        | 160                        | -A4107-M      |
|        | 150                       | 6,3 x 11                       | 24                       | 0,20               | 2,2                        | 165                        | -A4157-M      |
|        | 220                       | 6,3 x 11                       | 35                       | 0,20               | 1,5                        | 220                        | -F4227-M      |
|        | 220                       | 8 x 11                         | 35                       | 0,20               | 1,5                        | 260                        | -A4227-M      |
|        | 270                       | 8 x 11                         | 43                       | 0,20               | 1,2                        | 270                        | -A4277-M      |
|        | 330                       | 8 x 11                         | 53                       | 0,20               | 1,0                        | 350                        | -A4337-M      |
|        | 470                       | 10 x 12,5                      | 75                       | 0,20               | 0,71                       | 500                        | -A4477-M      |
|        | 560                       | 10 x 12,5                      | 90                       | 0,20               | 0,59                       | 450                        | -A4567-M      |
|        | 680                       | 10 x 16                        | 109                      | 0,20               | 0,49                       | 540                        | -A4687-M      |
|        | 1 000                     | 10 x 16                        | 160                      | 0,20               | 0,33                       | 720                        | -A4108-M      |
|        | 1 500                     | 12,5 x 25                      | 240                      | 0,20               | 0,22                       | 970                        | -A4158-M      |
|        | 2 200                     | 16 x 15                        | 352                      | 0,22               | 0,17                       | 900                        | -F4228-M      |
|        | 2 200                     | 12,5 x 25                      | 352                      | 0,22               | 0,17                       | 1200                       | -A4228-M      |
|        | 3 300                     | 16 x 25                        | 528                      | 0,24               | 0,12                       | 1580                       | -A4338-M*     |
|        | 4 700                     | 16 x 25                        | 752                      | 0,26               | 0,09                       | 1700                       | -A4478-M*     |
| 6 800  | 18 x 31                   | 1088                           | 0,30                     | 0,07               | 2250                       | -A4688-M*                  |               |
| 8 200  | 20 x 30                   | 1312                           | 0,34                     | 0,07               | 2500                       | -A4828-M*                  |               |
| 10 000 | 20 x 35                   | 1600                           | 0,38                     | 0,06               | 2600                       | -A4109-M*                  |               |
| 25     | 47                        | 5 x 11                         | 12                       | 0,16               | 5,6                        | 100                        | -A5476-M      |
|        | 68                        | 6,3 x 11                       | 17                       | 0,16               | 3,9                        | 125                        | -A5686-M      |
|        | 100                       | 6,3 x 11                       | 25                       | 0,16               | 2,7                        | 180                        | -A5107-M      |
|        | 150                       | 8 x 11                         | 38                       | 0,16               | 1,8                        | 200                        | -A5157-M      |
|        | 220                       | 8 x 11                         | 55                       | 0,16               | 1,2                        | 290                        | -A5227-M      |
|        | 270                       | 10 x 12,5                      | 68                       | 0,16               | 1,0                        | 320                        | -A5277-M      |
|        | 330                       | 10 x 12,5                      | 83                       | 0,16               | 0,80                       | 400                        | -A5337-M      |
|        | 470                       | 10 x 16                        | 118                      | 0,16               | 0,56                       | 580                        | -A5477-M      |
|        | 470                       | 10 x 12,5                      | 118                      | 0,16               | 0,56                       | 520                        | -B5477-M      |
|        | 560                       | 10 x 16                        | 140                      | 0,16               | 0,47                       | 590                        | -A5567-M      |
|        | 680                       | 10 x 20                        | 170                      | 0,16               | 0,39                       | 660                        | -A5687-M      |
|        | 1 000                     | 10 x 20                        | 250                      | 0,16               | 0,27                       | 850                        | -A5108-M      |
|        | 1 500                     | 12,5 x 25                      | 375                      | 0,16               | 0,18                       | 1100                       | -A5158-M      |
|        | 2 200                     | 16 x 20                        | 550                      | 0,18               | 0,14                       | 1300                       | -A5228-M      |
|        | 3 300                     | 16 x 25                        | 825                      | 0,20               | 0,10                       | 1750                       | -A5338-M      |
|        | 4 700                     | 16 x 31,5                      | 1175                     | 0,22               | 0,08                       | 2000                       | -A5478-M      |
| 6 800  | 18 x 40                   | 1700                           | 0,26                     | 0,06               | 2600                       | -A5688-M                   |               |
| 8 200  | 22 x 35                   | 2050                           | 0,30                     | 0,06               | 2700                       | -A5828-M                   |               |
| 10 000 | 22 x 40                   | 2500                           | 0,34                     | 0,06               | 3000                       | -A5109-M                   |               |

\* Type available under consult.

■ Preferred types.


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**

| $U_N$ | $C_N$                           | Case Dimensions                | $I_{L\max}$                    | $\tan\delta_{\max}$ | $ESR_{\max}$               | $I_{ac\max}$               | Ordering code |
|-------|---------------------------------|--------------------------------|--------------------------------|---------------------|----------------------------|----------------------------|---------------|
| Vdc   | 120 Hz<br>20°C<br>$\mu\text{F}$ | $\varnothing d \times l$<br>mm | 5 min<br>20°C<br>$\mu\text{A}$ | 120 Hz<br>20°C      | 120 Hz<br>20°C<br>$\Omega$ | 120 Hz<br>85°C<br>mA (rms) | Short Code    |
| 35    | 33                              | 5 x 11                         | 12                             | 0,14                | 7,0                        | 85                         | -A7336-M      |
|       | 47                              | 5 x 11                         | 16                             | 0,14                | 4,9                        | 130                        | -A7476-M      |
|       | 68                              | 6,3 x 11                       | 24                             | 0,14                | 3,4                        | 160                        | -A7686-M      |
|       | 100                             | 6,3 x 11                       | 35                             | 0,14                | 2,3                        | 180                        | -F7107-M      |
|       | 100                             | 8 x 11                         | 35                             | 0,14                | 2,3                        | 210                        | -A7107-M      |
|       | 150                             | 8 x 11                         | 53                             | 0,14                | 1,5                        | 270                        | -A7157-M      |
|       | 220                             | 10 x 12,5                      | 77                             | 0,14                | 1,1                        | 390                        | -A7227-M      |
|       | 270                             | 10 x 12,5                      | 95                             | 0,14                | 0,9                        | 430                        | -A7277-M      |
|       | 330                             | 10 x 12,5                      | 116                            | 0,14                | 0,70                       | 450                        | -A7337-M      |
|       | 470                             | 10 x 16                        | 165                            | 0,14                | 0,49                       | 570                        | -A7477-M      |
|       | 560                             | 10 x 20                        | 196                            | 0,14                | 0,41                       | 770                        | -A7567-M      |
|       | 680                             | 10 x 20                        | 238                            | 0,14                | 0,34                       | 840                        | -A7687-M      |
|       | 1 000                           | 12,5 x 25                      | 350                            | 0,14                | 0,23                       | 1000                       | -A7108-M      |
|       | 1 500                           | 16 x 25                        | 525                            | 0,14                | 0,15                       | 1400                       | -A7158-M      |
|       | 2 200                           | 16 x 31,5                      | 770                            | 0,16                | 0,12                       | 1500                       | -A7228-M      |
|       | 3 300                           | 18 x 31                        | 1155                           | 0,18                | 0,09                       | 2150                       | -A7338-M      |
| 4 700 | 18 x 40                         | 1645                           | 0,20                           | 0,07                | 2300                       | -A7478-M                   |               |
| 6 800 | 22 x 40                         | 2380                           | 0,24                           | 0,06                | 2500                       | -A7688-M                   |               |
| 50    | 10                              | 5 x 11                         | 5                              | 0,12                | 20                         | 60                         | -A6106-M      |
|       | 22                              | 5 x 11                         | 11                             | 0,12                | 9,0                        | 90                         | -A6226-M      |
|       | 33                              | 6,3 x 11                       | 17                             | 0,12                | 6,0                        | 110                        | -A6336-M      |
|       | 47                              | 6,3 x 11                       | 24                             | 0,12                | 4,2                        | 150                        | -A6476-M      |
|       | 68                              | 8 x 11                         | 34                             | 0,12                | 2,9                        | 190                        | -A6686-M      |
|       | 100                             | 8 x 11                         | 50                             | 0,12                | 2,0                        | 250                        | -A6107-M      |
|       | 150                             | 10 x 12,5                      | 75                             | 0,12                | 1,3                        | 320                        | -A6157-M      |
|       | 220                             | 10 x 12,5                      | 110                            | 0,12                | 0,90                       | 400                        | -A6227-M      |
|       | 270                             | 10 x 16                        | 135                            | 0,12                | 0,74                       | 480                        | -A6277-M      |
|       | 330                             | 10 x 16                        | 165                            | 0,12                | 0,60                       | 510                        | -A6337-M      |
|       | 470                             | 10 x 20                        | 235                            | 0,12                | 0,42                       | 700                        | -A6477-M      |
|       | 560                             | 12,5 x 25                      | 280                            | 0,12                | 0,36                       | 900                        | -A6567-M      |
|       | 680                             | 12,5 x 25                      | 340                            | 0,12                | 0,29                       | 1030                       | -A6687-M      |
|       | 1 000                           | 16 x 20                        | 500                            | 0,12                | 0,20                       | 1100                       | -A6108-M      |
|       | 1 500                           | 16 x 31,5                      | 750                            | 0,12                | 0,13                       | 1540                       | -A6158-M      |
|       | 2 200                           | 18 x 35                        | 1100                           | 0,14                | 0,11                       | 1700                       | -A6228-M      |
| 3 300 | 18 x 40                         | 1650                           | 0,16                           | 0,08                | 1900                       | -A6338-M                   |               |
| 4 700 | 22 x 40                         | 2350                           | 0,18                           | 0,06                | 2200                       | -A6478-M                   |               |

Preferred types.


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**

| $U_N$ | $C_N$                      | Case Dimensions                | $I_{L_{max}}$             | $\tan\delta_{max}$ | $ESR_{max}$                 | $I_{ac_{max}}$              | Ordering code |
|-------|----------------------------|--------------------------------|---------------------------|--------------------|-----------------------------|-----------------------------|---------------|
| Vdc   | 120 Hz<br>20 °C<br>$\mu F$ | $\varnothing d \times l$<br>mm | 5 min<br>20 °C<br>$\mu A$ | 120 Hz<br>20 °C    | 120 Hz<br>20 °C<br>$\Omega$ | 120 Hz<br>85 °C<br>mA (rms) | Short Code    |
| 63    | 6,8                        | 5 x 11                         | 4,3                       | 0,12               | 29                          | 50                          | -A8685-M      |
|       | 10                         | 5 x 11                         | 6,3                       | 0,12               | 20                          | 60                          | -A8106-M      |
|       | 22                         | 6,3 x 11                       | 14                        | 0,12               | 9,0                         | 110                         | -A8226-M      |
|       | 33                         | 6,3 x 11                       | 21                        | 0,12               | 6,0                         | 130                         | -A8336-M      |
|       | 47                         | 8 x 11                         | 30                        | 0,12               | 4,2                         | 180                         | -A8476-M      |
|       | 68                         | 10 x 12,5                      | 43                        | 0,12               | 2,9                         | 230                         | -A8686-M      |
|       | 100                        | 10 x 12,5                      | 63                        | 0,12               | 2,0                         | 290                         | -A8107-M      |
|       | 150                        | 10 x 16                        | 95                        | 0,12               | 1,3                         | 360                         | -A8157-M      |
|       | 220                        | 10 x 16                        | 139                       | 0,12               | 0,90                        | 470                         | -A8227-M      |
|       | 270                        | 10 x 20                        | 170                       | 0,12               | 0,74                        | 500                         | -A8277-M      |
|       | 330                        | 10 x 20                        | 208                       | 0,12               | 0,60                        | 620                         | -A8337-M      |
|       | 470                        | 12,5 x 25                      | 296                       | 0,12               | 0,42                        | 900                         | -A8477-M      |
|       | 560                        | 16 x 20                        | 353                       | 0,12               | 0,36                        | 930                         | -A8567-M      |
|       | 680                        | 16 x 25                        | 428                       | 0,12               | 0,29                        | 1100                        | -A8687-M      |
|       | 1 000                      | 16 x 31,5                      | 630                       | 0,12               | 0,20                        | 1500                        | -A8108-M      |
|       | 1 500                      | 18 x 35                        | 945                       | 0,12               | 0,13                        | 1900                        | -A8158-M      |
|       | 2 200                      | 20 x 40                        | 1386                      | 0,14               | 0,11                        | 2200                        | -A8228-M      |
| 100   | 0,1                        | 5 x 11                         | 3,0                       | 0,10               | 1658                        | 2,0                         | -A9104-M      |
|       | 0,22                       | 5 x 11                         | 3,0                       | 0,10               | 754                         | 4,0                         | -A9224-M      |
|       | 0,33                       | 5 x 11                         | 3,0                       | 0,10               | 502                         | 7,0                         | -A9334-M      |
|       | 0,47                       | 5 x 11                         | 3,0                       | 0,10               | 353                         | 10                          | -A9474-M      |
|       | 0,68                       | 5 x 11                         | 3,0                       | 0,10               | 244                         | 13                          | -A9684-M      |
|       | 1                          | 5 x 11                         | 3,0                       | 0,10               | 166                         | 21                          | -A9105-M      |
|       | 1,5                        | 5 x 11                         | 3,0                       | 0,10               | 111                         | 24                          | -A9155-M      |
|       | 2,2                        | 5 x 11                         | 3,0                       | 0,10               | 75                          | 30                          | -A9225-M      |
|       | 3,3                        | 5 x 11                         | 3,3                       | 0,10               | 50                          | 40                          | -A9335-M      |
|       | 4,7                        | 5 x 11                         | 4,7                       | 0,10               | 35                          | 45                          | -A9475-M      |
|       | 10                         | 6,3 x 11                       | 10                        | 0,10               | 17                          | 75                          | -A9106-M      |
|       | 22                         | 8 x 11                         | 22                        | 0,10               | 7,5                         | 130                         | -A9226-M      |
|       | 33                         | 10 x 12,5                      | 33                        | 0,10               | 5,0                         | 190                         | -A9336-M      |
|       | 47                         | 10 x 16                        | 47                        | 0,10               | 3,5                         | 250                         | -A9476-M      |
|       | 47                         | 10 x 12,5                      | 47                        | 0,10               | 3,5                         | 230                         | -B9476-M      |
|       | 68                         | 10 x 16                        | 68                        | 0,10               | 2,4                         | 280                         | -A9686-M      |
|       | 100                        | 10 x 20                        | 100                       | 0,10               | 1,7                         | 350                         | -A9107-M      |
|       | 150                        | 12,5 x 25                      | 150                       | 0,10               | 1,1                         | 550                         | -A9157-M      |
|       | 220                        | 12,5 x 25                      | 220                       | 0,10               | 0,75                        | 620                         | -A9227-M      |
|       | 270                        | 16 x 25                        | 270                       | 0,10               | 0,61                        | 770                         | -A9277-M      |
|       | 330                        | 16 x 25                        | 330                       | 0,10               | 0,50                        | 800                         | -A9337-M      |
|       | 470                        | 16 x 31,5                      | 470                       | 0,10               | 0,35                        | 900                         | -A9477-M      |
|       | 560                        | 16 x 31,5                      | 560                       | 0,10               | 0,30                        | 1000                        | -A9567-M      |
|       | 680                        | 20 x 30                        | 680                       | 0,10               | 0,24                        | 1100                        | -A9687-M      |
|       | 1 000                      | 20 x 40                        | 1000                      | 0,10               | 0,17                        | 1300                        | -A9108-M      |




**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**

| $U_N$           | $C_N$                      | Case Dimensions                | $I_{L_{max}}$             | $t_{and_{max}}$ | $ESR_{max}$                 | $I_{ac_{max}}$              | Ordering code |
|-----------------|----------------------------|--------------------------------|---------------------------|-----------------|-----------------------------|-----------------------------|---------------|
| Vdc             | 120 Hz<br>20 °C<br>$\mu F$ | $\varnothing d \times l$<br>mm | 5 min<br>20 °C<br>$\mu A$ | 120 Hz<br>20 °C | 120 Hz<br>20 °C<br>$\Omega$ | 120 Hz<br>85 °C<br>mA (rms) | Short Code    |
| <b>B43821 -</b> |                            |                                |                           |                 |                             |                             |               |
| 160             | 0,47                       | 6,3 x 11                       | 17                        | 0,20            | 705                         | 14                          | -A1474-M      |
|                 | 0,68                       | 6,3 x 11                       | 18                        | 0,20            | 488                         | 16                          | -A1684-M      |
|                 | 1                          | 6,3 x 11                       | 20                        | 0,20            | 332                         | 21                          | -A1105-M      |
|                 | 1,5                        | 6,3 x 11                       | 22                        | 0,20            | 221                         | 30                          | -A1155-M      |
|                 | 2,2                        | 6,3 x 11                       | 26                        | 0,20            | 151                         | 40                          | -A1225-M      |
|                 | 3,3                        | 6,3 x 11                       | 31                        | 0,20            | 100                         | 45                          | -A1335-M      |
|                 | 4,7                        | 8 x 11                         | 38                        | 0,20            | 71                          | 55                          | -A1475-M      |
|                 | 6,8                        | 8 x 11                         | 48                        | 0,20            | 49                          | 62                          | -A1685-M      |
|                 | 10                         | 10 x 12,5                      | 63                        | 0,20            | 33                          | 85                          | -A1106-M      |
|                 | 22                         | 10 x 16                        | 121                       | 0,20            | 15                          | 130                         | -A1226-M      |
|                 | 33                         | 10 x 20                        | 173                       | 0,20            | 10                          | 175                         | -A1336-M      |
|                 | 47                         | 12,5 x 25                      | 241                       | 0,20            | 7,1                         | 260                         | -A1476-M      |
|                 | 68                         | 16 x 20                        | 341                       | 0,20            | 4,9                         | 330                         | -A1686-M      |
|                 | 100                        | 16 x 25                        | 495                       | 0,20            | 3,3                         | 410                         | -A1107-M      |
|                 | 150                        | 16 x 31,5                      | 735                       | 0,20            | 2,2                         | 520                         | -A1157-M      |
| 220             | 18 x 31                    | 1071                           | 0,20                      | 1,5             | 660                         | -A1227-M                    |               |
| 270             | 18 x 40                    | 1311                           | 0,20                      | 1,2             | 700                         | -A1277-M                    |               |
| 330             | 20 x 30                    | 1599                           | 0,20                      | 1,0             | 750                         | -A1337-M                    |               |
| 470             | 22 x 35                    | 2271                           | 0,20                      | 0,71            | 1000                        | -A1477-M                    |               |
| 560             | 22 x 40                    | 2703                           | 0,20                      | 0,59            | 1100                        | -A1567-M                    |               |
| 200             | 0,47                       | 6,3 x 11                       | 18                        | 0,20            | 705                         | 14                          | -A2474-M      |
|                 | 0,68                       | 6,3 x 11                       | 19                        | 0,20            | 488                         | 16                          | -A2684-M      |
|                 | 1                          | 6,3 x 11                       | 21                        | 0,20            | 332                         | 21                          | -A2105-M      |
|                 | 1,5                        | 6,3 x 11                       | 24                        | 0,20            | 221                         | 30                          | -A2155-M      |
|                 | 2,2                        | 6,3 x 11                       | 28                        | 0,20            | 151                         | 40                          | -A2225-M      |
|                 | 3,3                        | 6,3 x 11                       | 35                        | 0,20            | 100                         | 45                          | -A2335-M      |
|                 | 4,7                        | 8 x 11                         | 43                        | 0,20            | 71                          | 55                          | -A2475-M      |
|                 | 6,8                        | 10 x 12,5                      | 56                        | 0,20            | 49                          | 78                          | -A2685-M      |
|                 | 10                         | 10 x 16                        | 75                        | 0,20            | 33                          | 90                          | -A2106-M      |
|                 | 10                         | 10 x 12,5                      | 75                        | 0,20            | 33                          | 80                          | -B2106-M      |
|                 | 22                         | 10 x 20                        | 147                       | 0,20            | 15                          | 140                         | -A2226-M      |
|                 | 33                         | 12,5 x 25                      | 213                       | 0,20            | 10                          | 180                         | -A2336-M      |
|                 | 33                         | 10 x 20                        | 213                       | 0,20            | 10                          | 155                         | -B2336-M      |
|                 | 47                         | 12,5 x 25                      | 297                       | 0,20            | 7,1                         | 250                         | -A2476-M      |
|                 | 68                         | 16 x 20                        | 423                       | 0,20            | 4,9                         | 330                         | -A2686-M      |
|                 | 100                        | 16 x 25                        | 615                       | 0,20            | 3,3                         | 410                         | -A2107-M      |
|                 | 150                        | 18 x 31                        | 915                       | 0,20            | 2,2                         | 540                         | -A2157-M      |
|                 | 220                        | 18 x 35                        | 1335                      | 0,20            | 1,5                         | 1000                        | -A2227-M      |
| 270             | 20 x 35                    | 1635                           | 0,20                      | 1,2             | 1100                        | -A2277-M                    |               |
| 330             | 22 x 35                    | 1995                           | 0,20                      | 1,0             | 1200                        | -A2337-M                    |               |


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**

| $U_N$ | $C_N$                     | Case Dimensions                | $I_{Lmax}$               | $\tan\delta_{max}$ | $ESR_{max}$                | $I_{acmax}$                | Ordering code |
|-------|---------------------------|--------------------------------|--------------------------|--------------------|----------------------------|----------------------------|---------------|
| Vdc   | 120 Hz<br>20°C<br>$\mu F$ | $\varnothing d \times l$<br>mm | 5 min<br>20°C<br>$\mu A$ | 120 Hz<br>20°C     | 120 Hz<br>20°C<br>$\Omega$ | 120 Hz<br>85°C<br>mA (rms) | Short Code    |
| 250   | 0,47                      | 6,3 x 11                       | 19                       | 0,20               | 705                        | 12                         | -F2474-M      |
|       | 0,68                      | 6,3 x 11                       | 20                       | 0,20               | 488                        | 17                         | -F2684-M      |
|       | 1                         | 6,3 x 11                       | 23                       | 0,20               | 332                        | 21                         | -F2105-M      |
|       | 1,5                       | 6,3 x 11                       | 26                       | 0,20               | 221                        | 30                         | -F2155-M      |
|       | 2,2                       | 6,3 x 11                       | 32                       | 0,20               | 151                        | 45                         | -F2225-M      |
|       | 3,3                       | 8 x 11                         | 40                       | 0,20               | 100                        | 50                         | -F2335-M      |
|       | 4,7                       | 10 x 12,5                      | 50                       | 0,20               | 71                         | 70                         | -F2475-M      |
|       | 6,8                       | 10 x 12,5                      | 66                       | 0,20               | 49                         | 78                         | -F2685-M      |
|       | 10                        | 10 x 16                        | 90                       | 0,20               | 33                         | 90                         | -F2106-M      |
|       | 22                        | 10 x 20                        | 180                      | 0,20               | 15                         | 145                        | -F2226-M      |
|       | 33                        | 12,5 x 25                      | 263                      | 0,20               | 10                         | 215                        | -F2336-M      |
|       | 47                        | 16 x 20                        | 368                      | 0,20               | 7,1                        | 300                        | -F2476-M      |
|       | 68                        | 16 x 25                        | 525                      | 0,20               | 4,9                        | 330                        | -F2686-M      |
|       | 100                       | 18 x 35                        | 765                      | 0,20               | 3,3                        | 700                        | -F2107-M      |
|       | 150                       | 18 x 40                        | 1140                     | 0,20               | 2,2                        | 850                        | -F2157-M      |
|       | 220                       | 18 x 40                        | 1665                     | 0,20               | 1,5                        | 1000                       | -F2227-M      |
| 270   | 22 x 35                   | 2040                           | 0,20                     | 1,2                | 1100                       | -F2277-M                   |               |
| 330   | 22 x 40                   | 2490                           | 0,20                     | 1,0                | 1200                       | -F2337-M                   |               |
| 350   | 0,47                      | 6,3 x 11                       | 20                       | 0,20               | 705                        | 12                         | -A4474-M      |
|       | 0,68                      | 6,3 x 11                       | 22                       | 0,20               | 488                        | 15                         | -A4684-M      |
|       | 1                         | 6,3 x 11                       | 26                       | 0,20               | 332                        | 21                         | -A4105-M      |
|       | 1,5                       | 8 x 11                         | 31                       | 0,20               | 221                        | 26                         | -A4155-M      |
|       | 2,2                       | 8 x 11                         | 38                       | 0,20               | 151                        | 30                         | -A4225-M      |
|       | 3,3                       | 10 x 12,5                      | 50                       | 0,20               | 100                        | 45                         | -A4335-M      |
|       | 4,7                       | 10 x 12,5                      | 64                       | 0,20               | 71                         | 55                         | -A4475-M      |
|       | 6,8                       | 10 x 16                        | 86                       | 0,20               | 49                         | 85                         | -A4685-M      |
|       | 10                        | 10 x 20                        | 120                      | 0,20               | 33                         | 95                         | -A4106-M      |
|       | 22                        | 12,5 x 25                      | 246                      | 0,20               | 15                         | 175                        | -A4226-M      |
|       | 33                        | 16 x 25                        | 362                      | 0,20               | 10                         | 240                        | -A4336-M      |
|       | 47                        | 16 x 31,5                      | 509                      | 0,20               | 7,1                        | 320                        | -A4476-M      |
|       | 68                        | 18 x 31                        | 729                      | 0,20               | 4,9                        | 420                        | -A4686-M      |
|       | 100                       | 20 x 30                        | 1065                     | 0,20               | 3,3                        | 600                        | -A4107-M      |
|       | 150                       | 20 x 40                        | 1590                     | 0,20               | 2,2                        | 700                        | -A4157-M      |

■ Preferred types.


**Single Ended GP – Capacitors**
**B41821/B43821**
**Standard Series – 85°C**

| $U_N$ | $C_N$                     | Case Dimensions                | $I_{L,max}$              | $\tan\delta_{max}$ | $ESR_{max}$                | $I_{ac,max}$               | Ordering code |
|-------|---------------------------|--------------------------------|--------------------------|--------------------|----------------------------|----------------------------|---------------|
| Vdc   | 120 Hz<br>20°C<br>$\mu F$ | $\varnothing d \times l$<br>mm | 5 min<br>20°C<br>$\mu A$ | 120 Hz<br>20°C     | 120 Hz<br>20°C<br>$\Omega$ | 120 Hz<br>85°C<br>mA (rms) | Short Code    |
| 400   | 2,2                       | 10 x 12,5                      | 41                       | 0,20               | 151                        | 40                         | -A9225-M      |
|       | 3,3                       | 10 x 12,5                      | 55                       | 0,20               | 100                        | 45                         | -A9335-M      |
|       | 4,7                       | 10 x 16                        | 71                       | 0,20               | 71                         | 60                         | -A9475-M      |
|       | 6,8                       | 10 x 16                        | 97                       | 0,20               | 49                         | 70                         | -A9685-M      |
|       | 10                        | 10 x 20                        | 135                      | 0,20               | 33                         | 95                         | -A9106-M      |
|       | 22                        | 16 x 20                        | 279                      | 0,20               | 15                         | 180                        | -A9226-M      |
|       | 33                        | 16 x 25                        | 411                      | 0,20               | 10                         | 240                        | -A9336-M      |
|       | 47                        | 16 x 31,5                      | 579                      | 0,20               | 7,1                        | 310                        | -A9476-M      |
|       | 68                        | 18 x 31,5                      | 831                      | 0,20               | 4,9                        | 410                        | -A9686-M      |
|       | 100                       | 20 x 35                        | 1215                     | 0,20               | 3,3                        | 600                        | -A9107-M      |
| 450   | 150                       | 20 x 40                        | 1815                     | 0,20               | 2,2                        | 700                        | -A9157-M      |
|       | 2,2                       | 10 x 12,5                      | 45                       | 0,20               | 151                        | 28                         | -A5225-M      |
|       | 3,3                       | 10 x 16                        | 60                       | 0,20               | 100                        | 44                         | -A5335-M      |
|       | 4,7                       | 10 x 20                        | 78                       | 0,20               | 71                         | 50                         | -A5475-M      |
|       | 6,8                       | 10 x 20                        | 107                      | 0,20               | 49                         | 75                         | -A5685-M      |
|       | 10                        | 12,5 x 25                      | 150                      | 0,20               | 33                         | 90                         | -A5106-M      |
|       | 22                        | 16 x 25                        | 312                      | 0,20               | 15                         | 165                        | -A5226-M      |
|       | 33                        | 16 x 31,5                      | 460                      | 0,20               | 10                         | 220                        | -A5336-M      |
|       | 47                        | 18 x 31,5                      | 650                      | 0,20               | 7,1                        | 265                        | -A5476-M      |
|       | 68                        | 18 x 35                        | 933                      | 0,20               | 4,9                        | 520                        | -A5686-M      |
| 100   | 20 x 40                   | 1365                           | 0,20                     | 3,3                | 600                        | -A5107-M                   |               |

Preferred types.

**How to determine the ordering code**

To obtain the required ordering code, prefix the type number to the short code.

E. g.: B41821-A9105-M

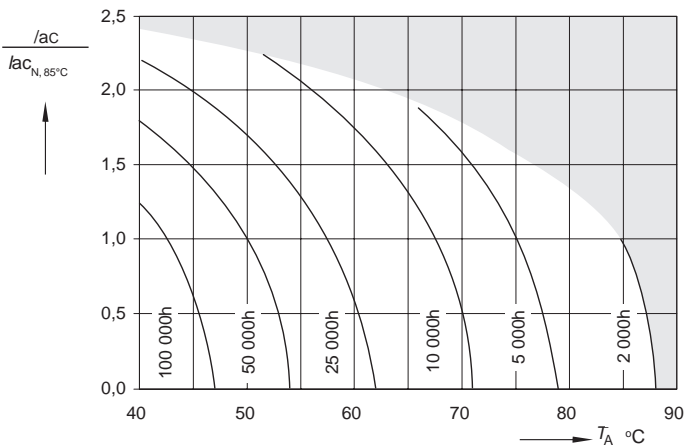
|             | $U_N = 6,3 \dots 100$ Vdc | $U_N = 160 \dots 450$ Vdc |
|-------------|---------------------------|---------------------------|
| Type number | B41821-...                | B43821-...                |



**Useful life**

versus temperature  $T_A$  (\*) under ripple operating conditions <sup>1)</sup>

$U_N = 6,3 \dots 100 \text{ Vdc}$

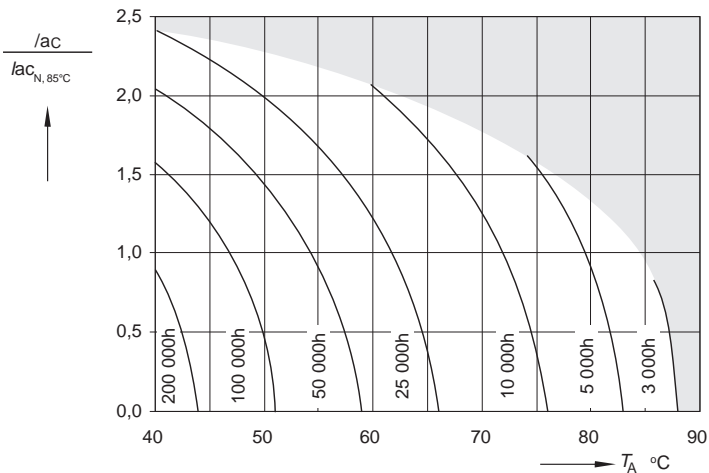


(\*) " $T_A$ " – Must be considered as the temperature of the capacitor's place in the board/circuit in maximum operate conditional

**Useful life**

versus temperature  $T_A$  (\*) under ripple operating conditions <sup>1)</sup>

$U_N = 160 \dots 450 \text{ Vdc}$



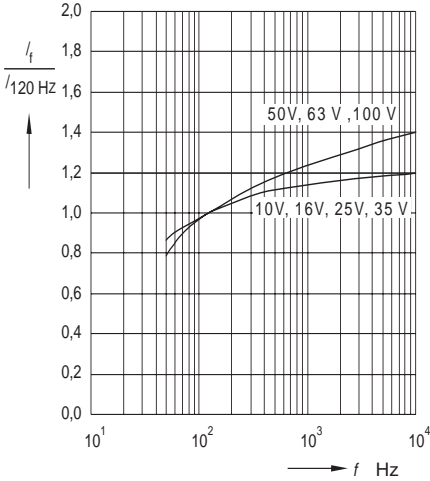
<sup>1)</sup> Refer to page 42 for an explanation on how to interpret the useful life graph.



**Permissible ripple current  $I_r$**

versus frequency  $f$

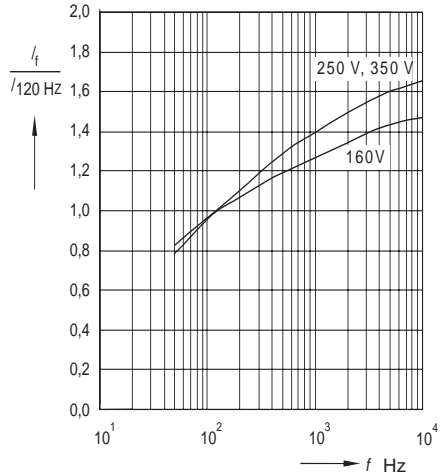
$U_N \leq 100$  Vdc



**Permissible ripple current  $I_r$**

versus frequency  $f$

$U_N \geq 160$  Vdc

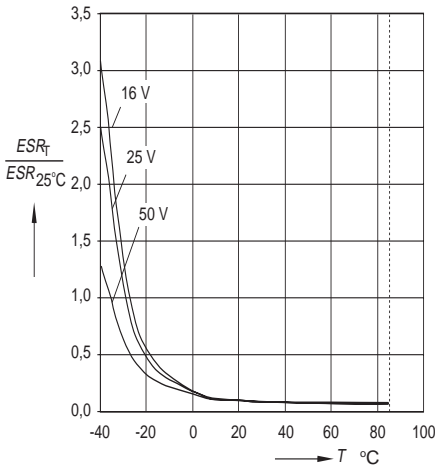


**Equivalent series resistance ESR**

at  $f = 120$  Hz versus temperature  $T$

Typical behavior

$U_N \leq 100$  Vdc

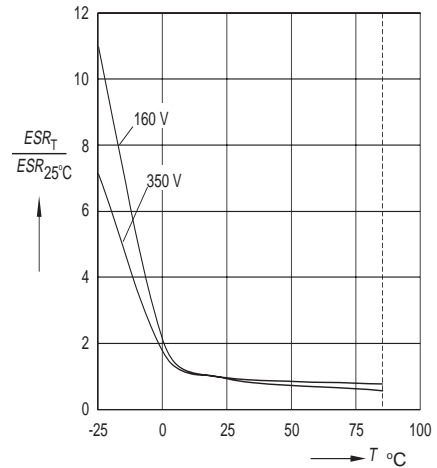


**Equivalent series resistance ESR**

at  $f = 120$  Hz versus temperature  $T$

Typical behavior

$U_N \geq 160$  Vdc



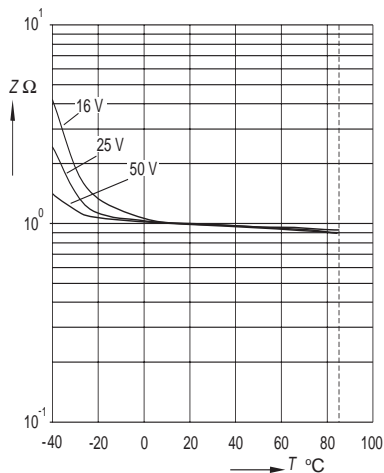


**Impedance  $Z$  at  $f = 120$  Hz**

versus temperature  $T$

Typical behavior

$U_N \leq 100$  Vdc

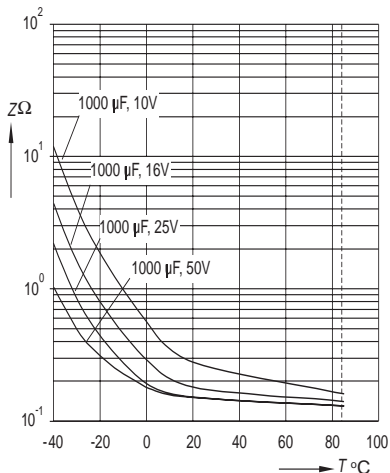


**Impedance  $Z$  at  $f = 10$  kHz**

versus temperature  $T$

Typical behavior

$U_N \leq 100$  Vdc

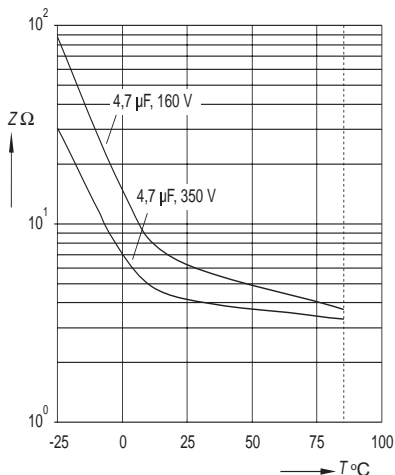


**Impedance  $Z$  at  $f = 10$  kHz**

versus temperature  $T$

Typical behavior

$U_N \geq 160$  Vdc

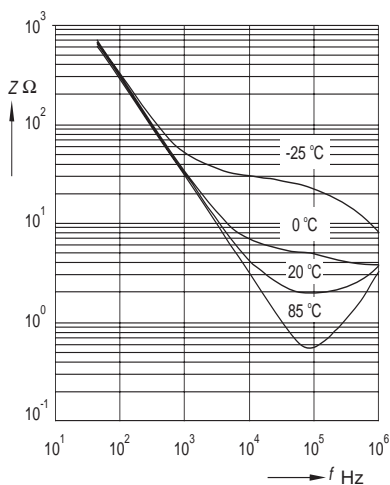


**Impedance  $Z$**

versus frequency  $f$

and temperature for 4,7 µF/350Vdc

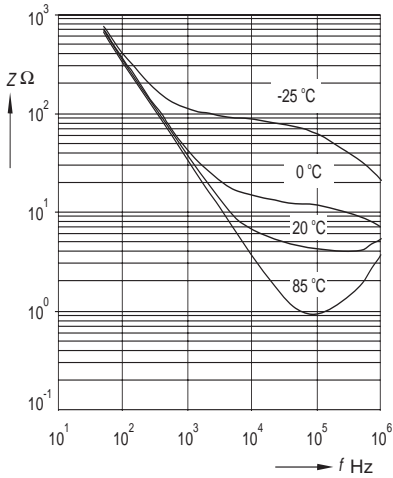
Typical behavior





**Impedance  $Z$**

versus frequency  $f$   
and temperature  $T$  for 4,7  $\mu\text{F}/160\text{Vdc}$   
Typical behavior



**Impedance  $Z$**

versus frequency  $f$   
Typical values at 20°C  
 $U_N \geq 160\text{Vdc}$

