# Film Capacitors

## Capacitors for DC Link

**Series/Type:** **B3271*P**

Date: June 2026

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## Applications

- Frequency converters
- Industrial and high-end power supplies
- Solar inverters

## Climatic

- Max. operating temperature: 125 °C (case)
- Climatic category (IEC 60068-1): 55/110/56

## Construction

- Dielectric: polypropylene (MKP)
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

## Features

- Capacitance values from 0.47 to 110 uF
- High CV product, compact
- Good self-healing properties
- Over-voltage capability
- Low losses with high current capability
- High reliability
- Long useful life
- RoHS-compatible
- UL 810 construction
- AEC-Q200E compliant

## Terminals

- Parallel wire leads, lead-free tinned
- 2-pin, 4-pin
- Standard lead lengths: 6–1 mm

## Marking

- Manufacturer’s logo and lot number, date code, rated capacitance (coded), capacitance tolerance (code letter) and rated DC voltage.

## Delivery mode

- Bulk (untaped)

## Approval

| Approval mark | Standards | Certificate |
|---|---|---|
| | UL 810 (construction only) | E323128 |

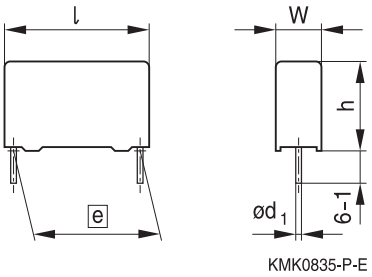
## Dimensional drawings

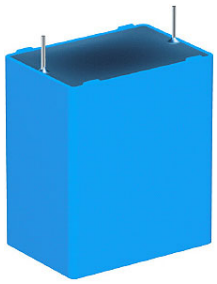
| Number of wires | Lead spacing e ±0.4 | Lead diameter $d_1$ ±0.05 | Width | Height | Length | Type |
|---|---|---|---|---|---|---|
| 2-pin | 27.5 | 0.8 | +0.2/–0.8 | +0.1/–0.5 | +0.2/–0.8 | B32714P |
| 2-pin | 37.5 | 1.0 | +0.2/–0.8 | +0.1/–0.5 | +0.2/–1.0 | B32716P |
| 4-pin | 37.5 | 1.2 | +0.2/–1.0 | +0.1/–0.5 | +0.2/–1.0 | B32716P |
| 4-pin | 52.5 | 1.2 | +0.2/–1.0 | +0.1/–0.5 | +0.2/–1.0 | B32718P |

Dimensions in mm

## Dimensional drawings 2-pin versions

### B32714P, B32716P

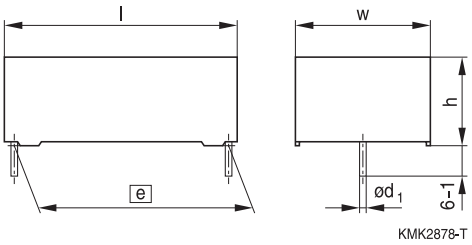


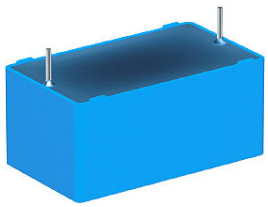



| | B32714P | B32716P |
|---|---|---|
| Lead spacing e ±0.4 | 27.5 | 37.5 |
| Lead diameter $d_1$ | 0.8 | 1.0 |

Dimensions in mm

### B32716P (low profile)



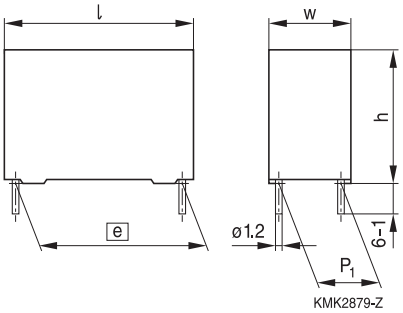



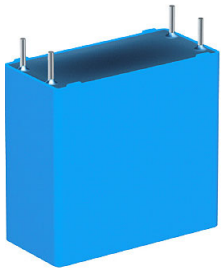
| | B32716P |
|---|---|
| Lead spacing e ±0.4 | 37.5 |
| Lead diameter $d_1$ | 1.0 |

Dimensions in mm

## Dimensional drawings 4-pin versions

### B32716P, B32718P



| | B32716P | B32718P |
|---|---|---|
| Lead spacing e ±0.4 | 37.5 | 52.5 |
| Lead diameter $d_1$ | 1.2 | 1.2 |

Dimensions in mm

## Overview of available types

| Lead spacing | 27.5 mm | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | B32714P | | | | | | |
| $V_R$ (V DC) | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| $C_R$ (µF) | | | | | | | |
| 0.47 | | | | | | | |
| 0.68 | | | | | | | |
| 0.82 | | | | | | | |
| 1.0 | | | | | | | |
| 1.5 | | | | | | | |
| 2.0 | | | | | | | |
| 2.5 | | | | | | | |
| 3.0 | | | | | | | |
| 3.5 | | | | | | | |
| 4.0 | | | | | | | |
| 4.5 | | | | | | | |
| 5.0 | | | | | | | |
| 5.5 | | | | | | | |
| 6.0 | | | | | | | |
| 6.5 | | | | | | | |
| 7.0 | | | | | | | |
| 8.0 | | | | | | | |
| 9.0 | | | | | | | |
| 10.0 | | | | | | | |
| 12.0 | | | | | | | |
| 14.0 | | | | | | | |

## Overview of available types

| Lead spacing | 37.5 mm | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | B32716P | | | | | | |
| $V_R$ (V DC) | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| $C_R$ (µF) | | | | | | | |
| 1.5 | | | | | | | |
| 2.0 | | | | | | | |
| 2.7 | | | | | | | |
| 3.0 | | | | | | | |
| 3.5 | | | | | | | |
| 4.0 | | | | | | | |
| 4.5 | | | | | | | |
| 5.0 | | | | | | | |
| 5.5 | | | | | | | |
| 6.0 | | | | | | | |
| 6.5 | | | | | | | |
| 7.0 | | | | | | | |
| 7.5 | | | | | | | |
| 8.0 | | | | | | | |
| 8.5 | | | | | | | |
| 9.0 | | | | | | | |
| 10 | | | | | | | |
| 12 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 18 | | | | | | | |
| 20 | | | | | | | |
| 22 | | | | | | | |
| 25 | | | | | | | |
| 28 | | | | | | | |
| 30 | | | | | | | |
| 35 | | | | | | | |
| 40 | | | | | | | |
| 45 | | | | | | | |
| 50 | | | | | | | |
| 55 | | | | | | | |
| 60 | | | | | | | |
| 65 | | | | | | | |

## Overview of available types

| Lead spacing | 52.5 mm | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | B32718P | | | | | | |
| $V_R$ (V DC) | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| $C_R$ (µF) | | | | | | | |
| 11 | | | | | | | |
| 15 | | | | | | | |
| 18 | | | | | | | |
| 20 | | | | | | | |
| 22 | | | | | | | |
| 25 | | | | | | | |
| 27 | | | | | | | |
| 30 | | | | | | | |
| 33 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 40 | | | | | | | |
| 45 | | | | | | | |
| 50 | | | | | | | |
| 55 | | | | | | | |
| 60 | | | | | | | |
| 65 | | | | | | | |
| 70 | | | | | | | |
| 75 | | | | | | | |
| 80 | | | | | | | |
| 85 | | | | | | | |
| 90 | | | | | | | |
| 100 | | | | | | | |
| 110 | | | | | | | |

### Ordering codes and packing units (lead spacing 27.5 mm)

| $C_R$[1)] | Typical dimensions w x h x l | $P_1$ | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C | $ESR_{typ}$ 85 °C | $ESL_{typ}$ | tan δ max. | tan δ max. | Un-taped |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 kHz | 10 kHz | | 1 kHz | 10 kHz | pcs./ |
| µF | mm | mm | | $A_{RMS}$ | mΩ | nH | ($10^{-3}$) | ($10^{-3}$) | MOQ |
| $V_{R,85\ °C}$ = 600 V DC, $V_{op,105\ °C}$ = 600 V DC, $V_{op,125\ °C}$ = 400 V DC | | | | | | | | | |
| 2.5 | 11.0 x 19.0 x 31.5 | - | B32714P6255K000 | 3.5 | 25.5 | 20.0 | 1.0 | 6.5 | 4704 |
| 3.0 | 11.0 x 21.0 x 31.5 | - | B32714P6305K000 | 3.9 | 21.8 | 21.0 | 1.0 | 6.5 | 4704 |
| 4.0 | 13.5 x 23.0 x 31.5 | - | B32714P6405+000 | 4.9 | 15.8 | 23.0 | 1.0 | 6.6 | 3864 |
| 5.0 | 15.0 x 24.5 x 31.5 | - | B32714P6505+000 | 5.7 | 12.8 | 25.0 | 1.0 | 6.6 | 3360 |
| 6.0 | 16.0 x 30.0 x 31.5 | - | B32714P6605+000 | 6.8 | 10.8 | 27.0 | 1.0 | 6.7 | 2128 |
| 7.0 | 16.0 x 30.0 x 31.5 | - | B32714P6705+000 | 7.3 | 9.4 | 30.0 | 1.0 | 6.8 | 2128 |
| 8.0 | 19.0 x 30.0 x 31.5 | - | B32714P6805+000 | 8.1 | 8.3 | 29.0 | 1.0 | 6.9 | 1792 |
| 9.0 | 18.0 x 33.0 x 31.5 | - | B32714P6905+000 | 8.7 | 7.5 | 33.0 | 1.0 | 7.0 | 1904 |
| 10.0 | 21.0 x 31.0 x 31.5 | - | B32714P6106+000 | 9.3 | 6.8 | 32.0 | 1.0 | 7.0 | 1568 |
| 12.0 | 22.0 x 36.5 x 31.5 | *) | B32714P6126+000 | 10.5 | 5.8 | 35.0 | 1.0 | 7.3 | 1568 |
| 14.0 | 22.0 x 36.5 x 31.5 | *) | B32714P6146K000 | 11.0 | 5.4 | 37.0 | 1.0 | 7.4 | 1568 |
| $V_{R,85\ °C}$ = 675 V DC, $V_{op,105\ °C}$ = 675 V DC, $V_{op,125\ °C}$ = 450 V DC | | | | | | | | | |
| 2.0 | 11.0 x 21.0 x 31.5 | - | B32714P3205+000 | 3.4 | 28.5 | 20.0 | 0.9 | 5.8 | 4704 |
| 2.5 | 12.5 x 21.5 x 31.5 | - | B32714P3255+000 | 3.9 | 22.4 | 21.0 | 0.9 | 5.8 | 4200 |
| 3.0 | 13.5 x 23.0 x 31.5 | - | B32714P3305+000 | 4.5 | 18.8 | 22.0 | 0.9 | 5.8 | 3864 |
| 4.0 | 15.0 x 24.5 x 31.5 | - | B32714P3405+000 | 5.4 | 14.2 | 25.0 | 0.9 | 5.9 | 3360 |
| 5.0 | 16.0 x 30.0 x 31.5 | - | B32714P3505+000 | 6.6 | 11.5 | 28.0 | 0.9 | 6.0 | 2128 |
| 6.0 | 19.0 x 30.0 x 31.5 | - | B32714P3605+000 | 7.4 | 9.7 | 28.0 | 0.9 | 6.1 | 1792 |
| 7.0 | 18.0 x 33.0 x 31.5 | - | B32714P3705+000 | 8.1 | 8.5 | 33.0 | 0.9 | 6.2 | 1904 |
| 8.0 | 21.0 x 31.0 x 31.5 | - | B32714P3805+000 | 8.8 | 7.5 | 32.0 | 0.9 | 6.2 | 1568 |
| 10.0 | 22.0 x 36.5 x 31.5 | *) | B32714P3106+000 | 10.6 | 6.2 | 36.0 | 1.0 | 6.5 | 1568 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.
*) 4-pin version capacitance values are available on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

## Ordering codes and packing units (lead spacing 27.5 mm)

| $C_R$[1)] µF | Typical dimensions w x h x l mm | $P_1$ mm | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C 10 kHz $A_{RMS}$ | $ESR_{typ}$ 85 °C 10 kHz mΩ | $ESL_{typ}$ nH | tan δ max. 1 kHz ($10^{-3}$) | tan δ max. 10 kHz ($10^{-3}$) | Un-taped pcs./ MOQ |
|---|---|---|---|---|---|---|---|---|---|
| $V_{R,85\ °C}$ = 750 V DC, $V_{op,105\ °C}$ = 750 V DC, $V_{op,125\ °C}$ = 600 V DC | | | | | | | | | |
| 1.5 | 11.0 x 21.0 x 31.5 | - | B32714P7155+000 | 3.2 | 31.6 | 20.0 | 0.9 | 4.9 | 4704 |
| 2.0 | 12.5 x 21.5 x 31.5 | - | B32714P7205+000 | 3.8 | 23.9 | 22.0 | 0.9 | 4.9 | 4200 |
| 2.5 | 13.5 x 23.0 x 31.5 | - | B32714P7255+000 | 4.4 | 19.2 | 23.0 | 0.9 | 5.0 | 3864 |
| 3.0 | 15.0 x 24.5 x 31.5 | - | B32714P7305+000 | 5.0 | 16.1 | 25.0 | 0.9 | 5.0 | 3360 |
| 4.0 | 16.0 x 30.0 x 31.5 | - | B32714P7405+000 | 6.3 | 12.3 | 28.0 | 0.9 | 5.1 | 2128 |
| 5.0 | 19.0 x 30.0 x 31.5 | - | B32714P7505+000 | 7.4 | 10.0 | 30.0 | 0.9 | 5.2 | 1792 |
| 6.0 | 21.0 x 31.0 x 31.5 | - | B32714P7605+000 | 8.4 | 8.5 | 31.0 | 0.9 | 5.3 | 1568 |
| 7.0 | 22.0 x 36.5 x 31.5 | *) | B32714P7705+000 | 9.7 | 7.4 | 34.0 | 0.9 | 5.4 | 1568 |
| 8.0 | 22.0 x 36.5 x 31.5 | *) | B32714P7805+000 | 10.3 | 6.6 | 37.0 | 0.9 | 5.5 | 1568 |
| $V_{R,85\ °C}$ = 825 V DC, $V_{op,105\ °C}$ = 825 V DC, $V_{op,125\ °C}$ = 660 V DC | | | | | | | | | |
| 1.0 | 11.0 x 19.0 x 31.5 | - | B32714P8105+000 | 2.7 | 42.0 | 18.0 | 0.9 | 4.5 | 4704 |
| 1.5 | 12.5 x 21.5 x 31.5 | - | B32714P8155+000 | 3.5 | 28.2 | 21.0 | 0.9 | 4.5 | 4200 |
| 2.0 | 13.5 x 23.0 x 31.5 | - | B32714P8205+000 | 4.2 | 21.8 | 23.0 | 0.9 | 4.5 | 3864 |
| 2.5 | 15.0 x 24.5 x 31.5 | - | B32714P8255+000 | 4.8 | 17.6 | 25.0 | 0.9 | 4.6 | 3360 |
| 3.5 | 16.0 x 30.0 x 31.5 | - | B32714P8355+000 | 6.2 | 12.9 | 30.0 | 0.9 | 4.7 | 2128 |
| 4.0 | 19.0 x 30.0 x 31.5 | - | B32714P8405+000 | 6.9 | 11.3 | 29.0 | 0.9 | 4.7 | 1792 |
| 5.0 | 21.0 x 31.0 x 31.5 | - | B32714P8505+000 | 8.1 | 9.1 | 32.0 | 0.9 | 4.8 | 1568 |
| 6.0 | 22.0 x 36.5 x 31.5 | *) | B32714P8605+000 | 9.4 | 7.8 | 35.0 | 0.9 | 4.9 | 1568 |
| 7.0 | 22.0 x 36.5 x 31.5 | *) | B32714P8705K000 | 9.7 | 7.2 | 37.0 | 0.9 | 5.0 | 1568 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.
*) 4-pin version capacitance values are available on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 27.5 mm)

| $C_R$[1)] | Typical dimensions w x h x l | $P_1$ | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C | $ESR_{typ}$ 85 °C | $ESL_{typ}$ | tan δ max. | tan δ max. | Un-taped |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 kHz | 10 kHz | | 1 kHz | 10 kHz | pcs./ |
| µF | mm | mm | | $A_{RMS}$ | mΩ | nH | ($10^{-3}$) | ($10^{-3}$) | MOQ |
| $V_{R,85\ °C}$ = 900 V DC, $V_{op,105\ °C}$ = 900 V DC, $V_{op,125\ °C}$ = 720 V DC | | | | | | | | | |
| 1.0 | 11.0 x 19.0 x 31.5 | - | B32714P9105+000 | 2.8 | 40.0 | 19.0 | 0.9 | 4.1 | 4704 |
| 1.5 | 12.5 x 21.5 x 31.5 | - | B32714P9155K000 | 3.6 | 27.9 | 22.0 | 0.9 | 4.2 | 4200 |
| 2.0 | 15.0 x 24.5 x 31.5 | - | B32714P9205+000 | 4.6 | 20.3 | 24.0 | 0.9 | 4.2 | 3360 |
| 3.0 | 16.0 x 30.0 x 31.5 | - | B32714P9305+000 | 6.0 | 13.8 | 30.0 | 0.9 | 4.3 | 2128 |
| 3.5 | 19.0 x 30.0 x 31.5 | - | B32714P9355+000 | 6.8 | 11.9 | 30.0 | 0.9 | 4.3 | 1792 |
| 4.0 | 18.0 x 33.0 x 31.5 | - | B32714P9405+000 | 7.4 | 10.6 | 34.0 | 0.9 | 4.4 | 1904 |
| 5.0 | 22.0 x 36.5 x 31.5 | *) | B32714P9505+000 | 8.9 | 8.7 | 35.0 | 0.9 | 4.5 | 1568 |
| 5.5 | 22.0 x 36.5 x 31.5 | *) | B32714P9555+000 | 9.3 | 7.9 | 37.0 | 0.9 | 4.5 | 1568 |
| $V_{R,85\ °C}$ = 1050 V DC, $V_{op,105\ °C}$ = 1050 V DC, $V_{op,125\ °C}$ = 840 V DC | | | | | | | | | |
| 0.68 | 11.0 x 19.0 x 31.5 | - | B32714P0684+000 | 2.5 | 48.0 | 19.0 | 0.9 | 3.4 | 4704 |
| 1.0 | 12.5 x 21.5 x 31.5 | - | B32714P0105K000 | 3.2 | 33.5 | 22.0 | 0.9 | 3.4 | 4200 |
| 1.5 | 15.0 x 24.5 x 31.5 | - | B32714P0155+000 | 4.3 | 22.1 | 25.0 | 0.9 | 3.4 | 3360 |
| 2.0 | 18.0 x 27.5 x 31.5 | - | B32714P0205+000 | 5.5 | 16.7 | 27.0 | 0.9 | 3.5 | 2856 |
| 2.5 | 19.0 x 30.0 x 31.5 | - | B32714P0255+000 | 6.4 | 13.6 | 30.0 | 0.9 | 3.5 | 1792 |
| 3.0 | 21.0 x 31.0 x 31.5 | *) | B32714P0305K000 | 7.1 | 11.7 | 32.0 | 0.9 | 3.6 | 1568 |
| 3.5 | 22.0 x 36.5 x 31.5 | *) | B32714P0355+000 | 8.2 | 10.0 | 35.0 | 0.9 | 3.6 | 1568 |
| 4.0 | 22.0 x 36.5 x 31.5 | *) | B32714P0405K000 | 8.6 | 9.2 | 37.0 | 0.9 | 3.7 | 1568 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.
*) 4-pin version capacitance values are available on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

## Ordering codes and packing units (lead spacing 27.5 mm)

| $C_R$[1)] | Typical dimensions w x h x l | $P_1$ | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C | $ESR_{typ}$ 85 °C | $ESL_{typ}$ | tan δ max. | tan δ max. | Un-taped |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 kHz | 10 kHz | | 1 kHz | 10 kHz | pcs./ |
| µF | mm | mm | | $A_{RMS}$ | mΩ | nH | ($10^{-3}$) | ($10^{-3}$) | MOQ |
| $V_{R,85\ °C}$ = 1200 V DC, $V_{op,105\ °C}$ = 1200 V DC, $V_{op,125\ °C}$ = 960 V DC | | | | | | | | | |
| 0.47 | 11.0 x 19.0 x 31.5 | - | B32714P1474+000 | 2.3 | 59.7 | 19.0 | 0.9 | 3.0 | 4704 |
| 0.68 | 12.5 x 21.5 x 31.5 | - | B32714P1684+000 | 2.9 | 41.5 | 21.0 | 0.9 | 3.0 | 4200 |
| 0.82 | 13.5 x 23.0 x 31.5 | - | B32714P1824+000 | 3.3 | 35.3 | 22.0 | 0.9 | 3.0 | 3864 |
| 1.0 | 14.0 x 24.5 x 31.5 | - | B32714P1105+000 | 3.7 | 29.3 | 25.0 | 0.9 | 3.0 | 3696 |
| 1.5 | 18.0 x 27.5 x 31.5 | - | B32714P1155+000 | 5.0 | 19.7 | 27.0 | 0.9 | 3.1 | 2856 |
| 2.0 | 18.0 x 33.0 x 31.5 | - | B32714P1205+000 | 6.1 | 15.0 | 33.0 | 0.9 | 3.1 | 1904 |
| 3.0 | 22.0 x 36.5 x 31.5 | *) | B32714P1305+000 | 7.9 | 10.4 | 37.0 | 0.9 | 3.2 | 1568 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.
*) 4-pin version capacitance values are available on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 37.5 mm)

| $C_R$[1)] | Typical dimensions w x h x l | $P_1$ | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C | $ESR_{typ}$ 85 °C | $ESL_{typ}$ | tan δ max. | tan δ max. | Un-taped |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 kHz | 10 kHz | | 1 kHz | 10 kHz | pcs./ |
| µF | mm | mm | | $A_{RMS}$ | mΩ | nH | ($10^{-3}$) | ($10^{-3}$) | MOQ |
| $V_{R,85\ °C}$ = 600 V DC, $V_{op,105\ °C}$ = 600 V DC, $V_{op,125\ °C}$ = 400 V DC | | | | | | | | | |
| 6.5 | 24.0 x 15.0 x 42.0 | - | B32716P6655K000 | 5.5 | 19.0 | 12.0 | 1.6 | 12.5 | 2080 |
| 8.5 | 24.0 x 19.0 x 42.0 | - | B32716P6855+000 | 6.4 | 14.3 | 15.0 | 1.6 | 12.6 | 1560 |
| 12.0 | 18.0 x 32.5 x 42.0 | - | B32716P6126+000 | 8.1 | 10.4 | 25.0 | 1.6 | 12.9 | 1440 |
| 15.0 | 18.5 x 35.5 x 42.0 | 10.2 | B32716P6156+000 | 9.6 | 8.2 | 12.0 | 1.6 | 12.7 | 1360 |
| 18.0 | 20.0 x 39.5 x 42.0 | 10.2 | B32716P6186+000 | 11.3 | 6.8 | 13.0 | 1.6 | 12.8 | 1280 |
| 20.0 | 22.0 x 37.0 x 42.0 | 10.2 | B32716P6206K000 | 11.6 | 6.5 | 13.0 | 1.6 | 12.8 | 1120 |
| 22.0 | 28.0 x 37.0 x 42.0 | 10.2 | B32716P6226+000 | 13.4 | 5.5 | 12.0 | 1.6 | 12.8 | 880 |
| 25.0 | 24.0 x 44.0 x 42.0 | 12.7 | B32716P6256+000 | 14.3 | 5.0 | 15.0 | 1.6 | 13.0 | 1040 |
| 30.0 | 30.0 x 45.0 x 42.0 | 20.3 | B32716P6306+000 | 16.5 | 4.2 | 14.0 | 1.6 | 13.1 | 800 |
| 35.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P6356+000 | 18.2 | 3.6 | 15.0 | 1.6 | 13.3 | 360 |
| 40.0 | 35.0 x 50.0 x 42.0 | 20.3 | B32716P6406+000 | 19.9 | 3.2 | 16.0 | 1.6 | 13.4 | 288 |
| 45.0 | 35.0 x 54.0 x 42.0 | 20.3 | B32716P6456+000 | 21.7 | 2.9 | 18.0 | 1.7 | 13.6 | 336 |
| 50.0 | 35.0 x 54.0 x 42.0 | 20.3 | B32716P6506K000 | 22.5 | 2.8 | 19.0 | 1.7 | 13.7 | 336 |
| 55.0 | 38.0 x 57.0 x 42.0 | 20.3 | B32716P6556+000 | 23.4 | 2.5 | 20.0 | 1.7 | 14.0 | 448 |
| 60.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P6606+000 | 24.5 | 2.3 | 20.0 | 1.7 | 14.2 | 280 |
| 65.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P6656K000 | 24.9 | 2.2 | 21.0 | 1.7 | 14.3 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 37.5 mm)

| $C_R$[1)] | Typical dimensions w x h x l | $P_1$ | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C | $ESR_{typ}$ 85 °C | $ESL_{typ}$ | tan δ max. | tan δ max. | Un-taped |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 kHz | 10 kHz | | 1 kHz | 10 kHz | pcs./ |
| µF | mm | mm | | $A_{RMS}$ | mΩ | nH | ($10^{-3}$) | ($10^{-3}$) | MOQ |
| $V_{R,85\ °C}$ = 675 V DC, $V_{op,105\ °C}$ = 675 V DC, $V_{op,125\ °C}$ = 450 V DC | | | | | | | | | |
| 5.0 | 24.0 x 15.0 x 42.0 | - | B32716P3505K000 | 5.0 | 21.9 | 12.0 | 1.4 | 11.1 | 2080 |
| 7.0 | 24.0 x 19.0 x 42.0 | - | B32716P3705K000 | 6.1 | 16.0 | 15.0 | 1.4 | 11.2 | 1560 |
| 10.0 | 18.0 x 32.5 x 42.0 | - | B32716P3106+000 | 7.9 | 11.1 | 26.0 | 1.5 | 11.5 | 1440 |
| 12.0 | 18.5 x 35.5 x 42.0 | 10.2 | B32716P3126K000 | 8.9 | 9.3 | 12.0 | 1.4 | 11.3 | 1360 |
| 15.0 | 20.0 x 39.5 x 42.0 | 10.2 | B32716P3156K000 | 10.7 | 7.4 | 13.0 | 1.4 | 11.3 | 1280 |
| 18.0 | 28.0 x 37.0 x 42.0 | 10.2 | B32716P3186+000 | 12.6 | 6.1 | 12.0 | 1.5 | 11.4 | 880 |
| 20.0 | 24.0 x 44.0 x 42.0 | 12.7 | B32716P3206+000 | 13.4 | 5.5 | 15.0 | 1.5 | 11.5 | 1040 |
| 25.0 | 30.0 x 45.0 x 42.0 | 20.3 | B32716P3256+000 | 16.0 | 4.5 | 15.0 | 1.5 | 11.6 | 800 |
| 30.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P3306+000 | 18.4 | 3.8 | 16.0 | 1.5 | 11.8 | 360 |
| 35.0 | 35.0 x 50.0 x 42.0 | 20.3 | B32716P3356K000 | 20.1 | 3.4 | 17.0 | 1.5 | 11.9 | 288 |
| 40.0 | 35.0 x 54.0 x 42.0 | 20.3 | B32716P3406K000 | 21.7 | 3.0 | 19.0 | 1.5 | 12.1 | 336 |
| 45.0 | 38.0 x 57.0 x 42.0 | 20.3 | B32716P3456K000 | 23.5 | 2.7 | 20.0 | 1.5 | 12.3 | 448 |
| 50.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P3506+000 | 24.2 | 2.4 | 21.0 | 1.6 | 12.6 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ} \leq \pm 5\%$

### Ordering codes and packing units (lead spacing 37.5 mm)

| $C_R$[1)] | Typical dimensions w x h x l | $P_1$ | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C | $ESR_{typ}$ 85 °C | $ESL_{typ}$ | tan δ max. | tan δ max. | Un-taped |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 kHz | 10 kHz | | 1 kHz | 10 kHz | pcs./ |
| µF | mm | mm | | $A_{RMS}$ | mΩ | nH | ($10^{-3}$) | ($10^{-3}$) | MOQ |
| $V_{R,85\ °C}$ = 750 V DC, $V_{op,105\ °C}$ = 750 V DC, $V_{op,125\ °C}$ = 600 V DC | | | | | | | | | |
| 4.0 | 24.0 x 15.0 x 42.0 | - | B32716P7405K000 | 4.8 | 23.7 | 12.0 | 1.3 | 9.6 | 2080 |
| 5.0 | 24.0 x 19.0 x 42.0 | - | B32716P7505+000 | 5.5 | 18.7 | 14.0 | 1.3 | 9.7 | 1560 |
| 8.0 | 18.0 x 32.5 x 42.0 | - | B32716P7805+000 | 7.6 | 12.0 | 26.0 | 1.3 | 9.9 | 1440 |
| 9.0 | 18.5 x 35.5 x 42.0 | 10.2 | B32716P7905+000 | 8.5 | 10.4 | 12.0 | 1.3 | 9.7 | 1360 |
| 12.0 | 20.0 x 39.5 x 42.0 | 10.2 | B32716P7126K000 | 10.1 | 8.2 | 13.0 | 1.3 | 9.8 | 1280 |
| 14.0 | 28.0 x 37.0 x 42.0 | 10.2 | B32716P7146+000 | 12.1 | 6.7 | 12.0 | 1.3 | 9.8 | 880 |
| 16.0 | 24.0 x 44.0 x 42.0 | 12.7 | B32716P7166+000 | 13.0 | 6.0 | 15.0 | 1.3 | 9.9 | 1040 |
| 18.0 | 28.0 x 42.5 x 42.0 | 10.2 | B32716P7186+000 | 14.3 | 5.3 | 14.0 | 1.3 | 9.9 | 880 |
| 20.0 | 30.0 x 45.0 x 42.0 | 20.3 | B32716P7206+000 | 15.6 | 4.8 | 15.0 | 1.3 | 10.0 | 800 |
| 22.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P7226+000 | 16.7 | 4.4 | 15.0 | 1.3 | 10.1 | 360 |
| 25.0 | 35.0 x 50.0 x 42.0 | 20.3 | B32716P7256+000 | 18.4 | 3.9 | 16.0 | 1.3 | 10.2 | 288 |
| 30.0 | 35.0 x 54.0 x 42.0 | 20.3 | B32716P7306+000 | 20.8 | 3.3 | 19.0 | 1.3 | 10.4 | 336 |
| 35.0 | 38.0 x 57.0 x 42.0 | 20.3 | B32716P7356+000 | 22.5 | 2.9 | 20.0 | 1.4 | 10.5 | 448 |
| 40.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P7406+000 | 24.0 | 2.6 | 21.0 | 1.4 | 10.7 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 37.5 mm)

| $C_R$[1)] µF | Typical dimensions w x h x l mm | $P_1$ mm | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C 10 kHz $A_{RMS}$ | $ESR_{typ}$ 85 °C 10 kHz mΩ | $ESL_{typ}$ nH | tan δ max. 1 kHz ($10^{-3}$) | tan δ max. 10 kHz ($10^{-3}$) | Un-taped pcs./ MOQ |
|---|---|---|---|---|---|---|---|---|---|
| $V_{R,85\ °C}$ = 825 V DC, $V_{op,105\ °C}$ = 825 V DC, $V_{op,125\ °C}$ = 660 V DC | | | | | | | | | |
| 3.5 | 24.0 x 15.0 x 42.0 | - | B32716P8355K000 | 4.6 | 25.6 | 12.0 | 1.2 | 8.8 | 2080 |
| 4.5 | 24.0 x 19.0 x 42.0 | - | B32716P8455K000 | 5.5 | 19.7 | 15.0 | 1.2 | 8.8 | 1560 |
| 6.5 | 18.0 x 32.5 x 42.0 | - | B32716P8655+000 | 7.3 | 13.4 | 26.0 | 1.2 | 9.0 | 1440 |
| 7.5 | 18.5 x 35.5 x 42.0 | 10.2 | B32716P8755+000 | 8.2 | 11.4 | 12.0 | 1.2 | 8.8 | 1360 |
| 9.0 | 20.0 x 39.5 x 42.0 | 10.2 | B32716P8905+000 | 9.5 | 9.5 | 13.0 | 1.2 | 8.9 | 1280 |
| 12.0 | 28.0 x 37.0 x 42.0 | 10.2 | B32716P8126+000 | 11.7 | 7.2 | 12.0 | 1.2 | 8.9 | 880 |
| 14.0 | 24.0 x 44.0 x 42.0 | 12.7 | B32716P8146K000 | 12.6 | 6.5 | 15.0 | 1.2 | 9.0 | 1040 |
| 16.0 | 30.0 x 45.0 x 42.0 | 20.3 | B32716P8166+000 | 14.7 | 5.4 | 15.0 | 1.2 | 9.1 | 800 |
| 18.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P8186+000 | 16.5 | 4.9 | 16.0 | 1.2 | 9.1 | 360 |
| 20.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P8206+000 | 17.3 | 4.4 | 16.0 | 1.2 | 9.2 | 360 |
| 22.0 | 35.0 x 50.0 x 42.0 | 20.3 | B32716P8226+000 | 18.6 | 4.1 | 17.0 | 1.2 | 9.3 | 288 |
| 25.0 | 35.0 x 54.0 x 42.0 | 20.3 | B32716P8256+000 | 19.9 | 3.7 | 19.0 | 1.2 | 9.4 | 336 |
| 28.0 | 38.0 x 57.0 x 42.0 | 20.3 | B32716P8286+000 | 20.8 | 3.3 | 19.0 | 1.3 | 9.5 | 448 |
| 30.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P8306+000 | 21.7 | 3.1 | 20.0 | 1.3 | 9.6 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 37.5 mm)

| $C_R$[1)] | Typical dimensions w x h x l | $P_1$ | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C | $ESR_{typ}$ 85 °C | $ESL_{typ}$ | tan δ max. | tan δ max. | Un-taped |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 kHz | 10 kHz | | 1 kHz | 10 kHz | pcs./ |
| µF | mm | mm | | $A_{RMS}$ | mΩ | nH | ($10^{-3}$) | ($10^{-3}$) | MOQ |
| $V_{R,85\ °C}$ = 900 V DC, $V_{op,105\ °C}$ = 900 V DC, $V_{op,125\ °C}$ = 720 V DC | | | | | | | | | |
| 2.7 | 24.0 x 15.0 x 42.0 | - | B32716P9275K000 | 4.3 | 29.5 | 12.0 | 1.1 | 8.1 | 2080 |
| 3.5 | 24.0 x 19.0 x 42.0 | - | B32716P9355+000 | 5.3 | 22.3 | 15.0 | 1.1 | 8.1 | 1560 |
| 5.0 | 18.0 x 32.5 x 42.0 | - | B32716P9505+000 | 6.7 | 15.7 | 25.0 | 1.1 | 8.2 | 1440 |
| 6.0 | 18.5 x 35.5 x 42.0 | 10.2 | B32716P9605+000 | 7.6 | 13.1 | 11.0 | 1.1 | 8.1 | 1360 |
| 8.0 | 20.0 x 39.5 x 42.0 | 10.2 | B32716P9805+000 | 9.4 | 9.9 | 13.0 | 1.1 | 8.2 | 1280 |
| 10.0 | 28.0 x 37.0 x 42.0 | 10.2 | B32716P9106+000 | 11.3 | 7.8 | 12.0 | 1.1 | 8.2 | 880 |
| 12.0 | 28.0 x 42.5 x 42.0 | 10.2 | B32716P9126+000 | 12.8 | 6.6 | 14.0 | 1.1 | 8.3 | 880 |
| 14.0 | 30.0 x 45.0 x 42.0 | 20.3 | B32716P9146+000 | 14.3 | 5.7 | 15.0 | 1.1 | 8.3 | 800 |
| 16.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P9166+000 | 16.2 | 5.0 | 16.0 | 1.1 | 8.4 | 360 |
| 18.0 | 35.0 x 50.0 x 42.0 | 20.3 | B32716P9186+000 | 17.6 | 4.5 | 17.0 | 1.2 | 8.5 | 288 |
| 20.0 | 35.0 x 54.0 x 42.0 | 20.3 | B32716P9206+000 | 18.9 | 4.1 | 18.0 | 1.2 | 8.5 | 336 |
| 22.0 | 38.0 x 57.0 x 42.0 | 20.3 | B32716P9226+000 | 19.5 | 3.8 | 19.0 | 1.2 | 8.6 | 448 |
| 25.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P9256+000 | 20.8 | 3.4 | 20.0 | 1.2 | 8.8 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

## Ordering codes and packing units (lead spacing 37.5 mm)

| $C_R$[1)] µF | Typical dimensions w x h x l mm | $P_1$ mm | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C 10 kHz $A_{RMS}$ | $ESR_{typ}$ 85 °C 10 kHz mΩ | $ESL_{typ}$ nH | tan δ max. 1 kHz ($10^{-3}$) | tan δ max. 10 kHz ($10^{-3}$) | Un-taped pcs./ MOQ |
|---|---|---|---|---|---|---|---|---|---|
| $V_{R,85\ °C}$ = 1050 V DC, $V_{op,105\ °C}$ = 1050 V DC, $V_{op,125\ °C}$ = 840 V DC | | | | | | | | | |
| 2.0 | 24.0 x 15.0 x 42.0 | - | B32716P0205K000 | 4.2 | 33.5 | 12.0 | 1.0 | 6.6 | 2080 |
| 2.7 | 24.0 x 19.0 x 42.0 | - | B32716P0275K000 | 5.0 | 24.7 | 15.0 | 1.0 | 6.7 | 1560 |
| 3.5 | 18.0 x 32.5 x 42.0 | - | B32716P0355+000 | 6.1 | 18.6 | 24.0 | 1.0 | 6.8 | 1440 |
| 4.0 | 18.5 x 35.5 x 42.0 | 10.2 | B32716P0405+000 | 6.9 | 16.0 | 11.0 | 1.0 | 6.7 | 1360 |
| 5.0 | 20.0 x 39.5 x 42.0 | 10.2 | B32716P0505+000 | 8.1 | 13.0 | 12.0 | 1.0 | 6.7 | 1280 |
| 6.0 | 22.0 x 37.0 x 42.0 | 10.2 | B32716P0605+000 | 8.7 | 11.2 | 13.0 | 1.0 | 6.7 | 1120 |
| 7.0 | 28.0 x 37.0 x 42.0 | 10.2 | B32716P0705+000 | 10.4 | 9.2 | 12.0 | 1.0 | 6.7 | 880 |
| 8.0 | 24.0 x 44.0 x 42.0 | 12.7 | B32716P0805+000 | 11.3 | 8.2 | 15.0 | 1.0 | 6.8 | 1040 |
| 10.0 | 30.0 x 45.0 x 42.0 | 20.3 | B32716P0106+000 | 13.4 | 6.6 | 15.0 | 1.0 | 6.8 | 800 |
| 12.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P0126+000 | 15.4 | 5.6 | 16.0 | 1.0 | 6.9 | 360 |
| 14.0 | 35.0 x 50.0 x 42.0 | 20.3 | B32716P0146K000 | 16.7 | 5.0 | 17.0 | 1.0 | 6.9 | 288 |
| 16.0 | 35.0 x 54.0 x 42.0 | 20.3 | B32716P0166K000 | 18.1 | 4.5 | 19.0 | 1.0 | 7.0 | 336 |
| 18.0 | 38.0 x 57.0 x 42.0 | 20.3 | B32716P0186K000 | 19.1 | 4.0 | 20.0 | 1.0 | 7.1 | 448 |
| 20.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P0206K000 | 19.9 | 3.6 | 21.0 | 1.0 | 7.2 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 37.5 mm)

| $C_R$[1)] µF | Typical dimensions w x h x l mm | $P_1$ mm | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C 10 kHz $A_{RMS}$ | $ESR_{typ}$ 85 °C 10 kHz mΩ | $ESL_{typ}$ nH | tan δ max. 1 kHz ($10^{-3}$) | tan δ max. 10 kHz ($10^{-3}$) | Un-taped pcs./ MOQ |
|---|---|---|---|---|---|---|---|---|---|
| $V_{R,85\ °C}$ = 1200 V DC, $V_{op,105\ °C}$ = 1200 V DC, $V_{op,125\ °C}$ = 960 V DC | | | | | | | | | |
| 1.5 | 24.0 x 15.0 x 42.0 | - | B32716P1155K000 | 4.0 | 39.1 | 12.0 | 0.9 | 5.9 | 2080 |
| 2.0 | 24.0 x 19.0 x 42.0 | - | B32716P1205K000 | 4.8 | 28.9 | 15.0 | 0.9 | 5.9 | 1560 |
| 3.0 | 18.0 x 32.5 x 42.0 | - | B32716P1305+000 | 6.1 | 19.2 | 26.0 | 0.9 | 6.0 | 1440 |
| 3.5 | 18.5 x 35.5 x 42.0 | 10.2 | B32716P1355K000 | 6.8 | 16.9 | 12.0 | 0.9 | 5.9 | 1360 |
| 4.0 | 20.0 x 39.5 x 42.0 | 10.2 | B32716P1405+000 | 7.8 | 14.3 | 12.0 | 0.9 | 5.9 | 1280 |
| 4.5 | 22.0 x 37.0 x 42.0 | 10.2 | B32716P1455K000 | 8.1 | 13.2 | 12.0 | 0.9 | 5.9 | 1120 |
| 5.5 | 28.0 x 37.0 x 42.0 | 10.2 | B32716P1555+000 | 9.8 | 10.4 | 12.0 | 0.9 | 5.9 | 880 |
| 6.0 | 24.0 x 44.0 x 42.0 | 12.7 | B32716P1605+000 | 10.4 | 9.6 | 15.0 | 0.9 | 6.0 | 1040 |
| 7.0 | 28.0 x 42.5 x 42.0 | 10.2 | B32716P1705K000 | 11.3 | 8.6 | 14.0 | 0.9 | 6.0 | 880 |
| 8.0 | 30.0 x 45.0 x 42.0 | 20.3 | B32716P1805K000 | 12.6 | 7.5 | 15.0 | 0.9 | 6.0 | 800 |
| 9.0 | 33.0 x 48.0 x 42.0 | 20.3 | B32716P1905+000 | 14.3 | 6.5 | 16.0 | 0.9 | 6.0 | 360 |
| 10.0 | 35.0 x 50.0 x 42.0 | 20.3 | B32716P1106+000 | 15.2 | 5.9 | 17.0 | 0.9 | 6.1 | 288 |
| 12.0 | 38.0 x 57.0 x 42.0 | 20.3 | B32716P1126+000 | 17.1 | 4.9 | 19.0 | 0.9 | 6.2 | 448 |
| 15.0 | 42.5 x 60.0 x 42.5 | 20.3 | B32716P1156K000 | 18.6 | 4.2 | 21.0 | 0.9 | 6.3 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 52.5 mm)

| $C_R$[1)] µF | Typical dimensions w x h x l mm | $P_1$ mm | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C 10 kHz $A_{RMS}$ | $ESR_{typ}$ 85 °C 10 kHz mΩ | $ESL_{typ}$ nH | tan δ max. 1 kHz ($10^{-3}$) | tan δ max. 10 kHz ($10^{-3}$) | Un-taped pcs./ MOQ |
|---|---|---|---|---|---|---|---|---|---|
| $V_{R,85\ °C}$ = 600 V DC, $V_{op,105\ °C}$ = 600 V DC, $V_{op,125\ °C}$ = 400 V DC | | | | | | | | | |
| 45.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P6456+000 | 14.3 | 5.4 | 15.0 | 2.9 | 25.5 | 560 |
| 50.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P6506K000 | 14.7 | 5.2 | 15.0 | 2.9 | 25.6 | 560 |
| 55.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P6556+000 | 16.9 | 4.5 | 16.0 | 2.9 | 25.9 | 216 |
| 60.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P6606+000 | 17.7 | 4.2 | 17.0 | 2.9 | 26.0 | 216 |
| 70.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P6706+000 | 19.7 | 3.6 | 19.0 | 2.9 | 26.6 | 192 |
| 75.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P6756+000 | 20.3 | 3.4 | 19.0 | 3.0 | 26.7 | 192 |
| 80.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P6806K000 | 20.6 | 3.3 | 20.0 | 3.0 | 26.8 | 192 |
| 85.0 | 45.0 x 55.0 x 57.5 | 20.3 | B32718P6856+000 | 22.4 | 3.0 | 19.0 | 3.0 | 26.9 | 280 |
| 90.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P6906+000 | 23.2 | 2.9 | 20.0 | 3.0 | 27.1 | 280 |
| 100.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P6107+000 | 25.1 | 2.7 | 22.0 | 3.1 | 27.8 | 280 |
| 110.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P6117K000 | 25.8 | 2.5 | 23.0 | 3.1 | 28.0 | 280 |
| $V_{R,85\ °C}$ = 675 V DC, $V_{op,105\ °C}$ = 675 V DC, $V_{op,125\ °C}$ = 450 V DC | | | | | | | | | |
| 36.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P3366+000 | 13.7 | 6.0 | 15.0 | 2.6 | 22.6 | 560 |
| 45.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P3456+000 | 16.4 | 4.9 | 16.0 | 2.6 | 22.9 | 216 |
| 50.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P3506K000 | 16.8 | 4.6 | 17.0 | 2.6 | 23.0 | 216 |
| 55.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P3556+000 | 19.1 | 4.1 | 18.0 | 2.6 | 23.4 | 192 |
| 60.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P3606+000 | 19.7 | 3.8 | 19.0 | 2.6 | 23.5 | 192 |
| 65.0 | 45.0 x 55.0 x 57.5 | 20.3 | B32718P3656+000 | 21.7 | 3.5 | 19.0 | 2.7 | 23.6 | 280 |
| 70.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P3706+000 | 22.5 | 3.3 | 19.0 | 2.7 | 23.8 | 280 |
| 75.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P3756K000 | 22.8 | 3.2 | 20.0 | 2.7 | 23.8 | 280 |
| 80.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P3806+000 | 24.2 | 2.9 | 22.0 | 2.7 | 24.4 | 280 |
| 85.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P3856+000 | 24.9 | 2.8 | 23.0 | 2.7 | 24.6 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 52.5 mm)

| $C_R$[1)] µF | Typical dimensions w x h x l mm | $P_1$ mm | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C 10 kHz $A_{RMS}$ | $ESR_{typ}$ 85 °C 10 kHz mΩ | $ESL_{typ}$ nH | tan δ max. 1 kHz ($10^{-3}$) | tan δ max. 10 kHz ($10^{-3}$) | Un-taped pcs./ MOQ |
|---|---|---|---|---|---|---|---|---|---|
| $V_{R,85\ °C}$ = 750 V DC, $V_{op,105\ °C}$ = 750 V DC, $V_{op,125\ °C}$ = 600 V DC | | | | | | | | | |
| 25.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P7256+000 | 12.5 | 7.3 | 14.0 | 2.3 | 19.5 | 560 |
| 30.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P7306K000 | 13.2 | 6.6 | 15.0 | 2.3 | 19.6 | 560 |
| 35.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P7356+000 | 15.6 | 5.5 | 16.0 | 2.3 | 19.9 | 216 |
| 40.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P7406K000 | 16.3 | 5.0 | 17.0 | 2.3 | 20.0 | 216 |
| 45.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P7456+000 | 18.4 | 4.3 | 19.0 | 2.3 | 20.3 | 192 |
| 50.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P7506K000 | 19.1 | 4.0 | 20.0 | 2.3 | 20.4 | 192 |
| 55.0 | 45.0 x 55.0 x 57.5 | 20.3 | B32718P7556+000 | 21.0 | 3.6 | 19.0 | 2.3 | 20.5 | 280 |
| 60.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P7606K000 | 21.7 | 3.5 | 20.0 | 2.4 | 20.7 | 280 |
| 65.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P7656+000 | 23.6 | 3.1 | 22.0 | 2.4 | 21.1 | 280 |
| $V_{R,85\ °C}$ = 825 V DC, $V_{op,105\ °C}$ = 825 V DC, $V_{op,125\ °C}$ = 660 V DC | | | | | | | | | |
| 22.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P8226+000 | 12.1 | 7.7 | 14.0 | 2.1 | 17.8 | 560 |
| 25.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P8256K000 | 12.6 | 7.2 | 15.0 | 2.1 | 17.8 | 560 |
| 27.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P8276+000 | 14.5 | 6.2 | 16.0 | 2.1 | 18.0 | 216 |
| 30.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P8306+000 | 15.1 | 5.8 | 17.0 | 2.1 | 18.0 | 216 |
| 35.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P8356+000 | 17.3 | 5.0 | 18.0 | 2.1 | 18.3 | 192 |
| 40.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P8406+000 | 18.4 | 4.4 | 20.0 | 2.1 | 18.4 | 192 |
| 45.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P8456+000 | 20.5 | 4.0 | 19.0 | 2.2 | 18.6 | 280 |
| 50.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P8506K000 | 20.9 | 3.8 | 20.0 | 2.2 | 18.6 | 280 |
| 55.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P8556+000 | 23.3 | 3.3 | 23.0 | 2.2 | 19.1 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

### Ordering codes and packing units (lead spacing 52.5 mm)

| $C_R$[1)] µF | Typical dimensions w x h x l mm | $P_1$ mm | Ordering code (Composition see below) | $I_{RMS,max}$[2)] 85 °C 10 kHz $A_{RMS}$ | $ESR_{typ}$ 85 °C 10 kHz mΩ | $ESL_{typ}$ nH | tan δ max. 1 kHz ($10^{-3}$) | tan δ max. 10 kHz ($10^{-3}$) | Un-taped pcs./ MOQ |
|---|---|---|---|---|---|---|---|---|---|
| $V_{R,85\ °C}$ = 900 V DC, $V_{op,105\ °C}$ = 900 V DC, $V_{op,125\ °C}$ = 720 V DC | | | | | | | | | |
| 20.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P9206+000 | 12.2 | 7.9 | 15.0 | 1.9 | 16.3 | 560 |
| 25.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P9256+000 | 14.5 | 6.3 | 16.0 | 2.0 | 16.5 | 216 |
| 27.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P9276+000 | 15.2 | 5.9 | 17.0 | 2.0 | 16.5 | 216 |
| 30.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P9306+000 | 16.9 | 5.4 | 18.0 | 2.0 | 16.7 | 192 |
| 33.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P9336+000 | 17.8 | 4.9 | 20.0 | 2.0 | 16.8 | 192 |
| 35.0 | 45.0 x 55.0 x 57.5 | 20.3 | B32718P9356+000 | 19.1 | 4.6 | 18.0 | 2.0 | 16.8 | 280 |
| 40.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P9406+000 | 20.5 | 4.1 | 20.0 | 2.0 | 17.0 | 280 |
| 50.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P9506K000 | 22.9 | 3.5 | 23.0 | 2.0 | 17.4 | 280 |
| $V_{R,85\ °C}$ = 1050 V DC, $V_{op,105\ °C}$ = 1050 V DC, $V_{op,125\ °C}$ = 840 V DC | | | | | | | | | |
| 15.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P0156K000 | 12.1 | 9.0 | 15.0 | 1.7 | 13.5 | 560 |
| 20.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P0206K000 | 14.9 | 6.8 | 17.0 | 1.7 | 13.7 | 216 |
| 25.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P0256+000 | 17.8 | 5.4 | 20.0 | 1.7 | 13.9 | 192 |
| 27.0 | 45.0 x 55.0 x 57.5 | 20.3 | B32718P0276+000 | 19.1 | 5.0 | 19.0 | 1.7 | 13.9 | 280 |
| 30.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P0306K000 | 19.7 | 4.7 | 20.0 | 1.7 | 14.0 | 280 |
| 35.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P0356K000 | 21.7 | 4.1 | 23.0 | 1.7 | 14.3 | 280 |
| $V_{R,85\ °C}$ = 1200 V DC, $V_{op,105\ °C}$ = 1200 V DC, $V_{op,125\ °C}$ = 960 V DC | | | | | | | | | |
| 11.0 | 30.0 x 45.0 x 57.5 | 20.3 | B32718P1116+000 | 11.3 | 10.3 | 15.0 | 1.5 | 11.8 | 560 |
| 15.0 | 35.0 x 50.0 x 57.5 | 20.3 | B32718P1156K000 | 13.7 | 7.9 | 17.0 | 1.5 | 11.9 | 216 |
| 18.0 | 38.0 x 57.5 x 57.5 | 20.3 | B32718P1186+000 | 15.9 | 6.5 | 19.0 | 1.5 | 12.1 | 192 |
| 20.0 | 45.0 x 55.0 x 57.5 | 20.3 | B32718P1206+000 | 17.3 | 5.8 | 19.0 | 1.5 | 12.1 | 280 |
| 22.0 | 45.0 x 57.0 x 57.5 | 20.3 | B32718P1226K000 | 18.2 | 5.5 | 20.0 | 1.5 | 12.2 | 280 |
| 25.0 | 45.0 x 65.0 x 57.5 | 20.3 | B32718P1256+000 | 20.3 | 4.8 | 23.0 | 1.5 | 12.4 | 280 |

MOQ = Minimum Order Quantity, consisting of 8 packing units.
Intermediate capacitance values on request.

### Composition of ordering code

+ = Capacitance tolerance code
J = ±5%
K = ±10%

Packaging code
000 = Untaped (lead length 6–1 mm)
Other lead lengths available upon request

1) Capacitance value measured at 1 kHz
2) Max. ripple current $I_{RMS}$@85 °C@10 kHz for a ΔT ≤15 °C when $\Delta ESR_{typ}$ ≤ ±5%

## Technical data

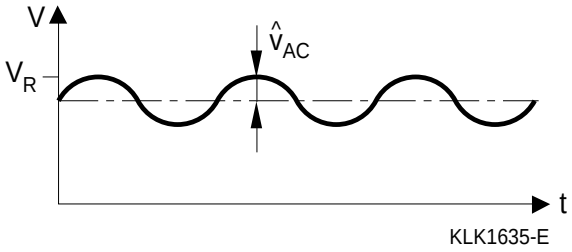
Reference standard: IEC 61071:2017 and AEC-Q200E. All data given at T = 20 °C, unless otherwise specified.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Operating temperature range (case) | Max. operating temperature, $T_{op,max}$ | | | | | | +125 °C |
| | Upper category temperature $T_{max}$ | | | | | | +110 °C |
| | Lower category temperature $T_{min}$ | | | | | | –55 °C |
| Rated temperature $T_R$ | +85 °C | | | | | | |
| Insulation resistance $R_{ins}$, given as time constant $\tau = C_R \cdot R_{ins}$, rel. humidity ≤ 65% (minimum as-delivered values) | τ > 10 000 s (after 1 min) at 500 V DC | | | | | | |
| DC test voltage between terminals (10 s)[1] | 1.5 • $V_R$ | | | | | | |
| Voltage test terminal to case (10 s) | 2110 V AC, 50 Hz | | | | | | |
| Pulse handling capability (V/µs) | $I_P$ (A) / C (µF) | | | | | | |
| $V_R$ (V DC) at 85 °C[2] | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| Continuous operating voltage $V_{op}$ (V DC) at 105 °C[2] | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| Continuous operating voltage $V_{op}$ (V DC) at 125 °C[2] | 400 | 450 | 600 | 660 | 720 | 840 | 960 |
| For temperature between 105 °C and 125 °C[2] | B3271#P6/P3<br>1.66%/°C of $V_{op}$ de-rating compared to $V_{op}$ at 105 °C<br>B3271#P7/P8/P9/P0/P1<br>1.0%/°C of $V_{op}$ de-rating compared to $V_{op}$ at 105 °C | | | | | | |
| Advanced biased humidity | 1000 hours / 60 °C / 95% relative humidity with $V_R$ | | | | | | |
| Limit values after test | Capacitance change $\lvert\Delta C/C\rvert$ | ≤ 3% | | | | | |
| | Dissipation factor change $\lvert\Delta \tan \delta\rvert$ | < 0.005 (at 1 kHz) | | | | | |
| | Insulation resistance $R_{ins}$ | ≥ 50% of initial limit | | | | | |
| Reliability: Failure rate λ | 12 fit (≤ 12 • $10^{-9}$/h) at 0.5 • $V_R$, 40 °C<br>For conversion to other operating conditions and temperatures, refer to chapter “Quality, 2 Reliability”. | | | | | | |
| Service life $t_{SL}$ | 42 000 h at $V_R$, 85 °C | | | | | | |

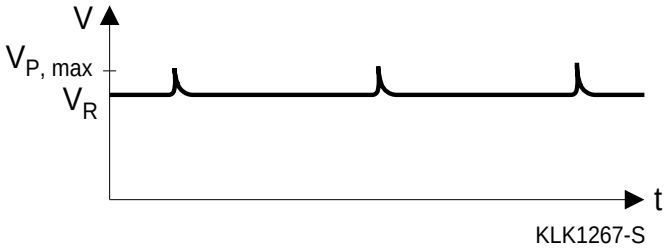
1) The repetition of this DC voltage test may damage the capacitor. Special care must be taken in case of use several capacitors in a parallel configuration.

2) Temperature given as operating temperature $T_{op}$ (ambient temperature + self-heating).

### Typical waveforms



KLK1635-E



KLK1267-S

Restrictions:
$V_R$: Maximum operating peak voltage of either polarity but of a non-reversing waveform, for which the capacitor has been designed for continuous operation.
ûAC ≤ 0.2 • $V_R$

| Overvoltage | Maximum duration within one day | Observation |
|---|---|---|
| 1.1 • $V_R$ | 30% of on-load duration | System regulation |
| 1.15 • $V_R$ | 30 min | System regulation |
| 1.2 • $V_R$ | 5 min | System regulation |
| 1.3 • $V_R$ | 1 min | System regulation |

NOTE 1 An overvoltage equal to 1.5 • $V_R$ for 30 ms is permitted 1000 times during the life of the capacitor.
The amplitudes of the overvoltages that may be tolerated without significant reduction in the life time of the capacitor depend on their duration, the number of application and the capacitor temperature.
In addition these values assume that the overvoltages may appear when the internal temperature of the capacitor is less than 0 °C but within the temperature category.
NOTE 2 The average applied voltage must not be higher than the specified voltage.

### Pulse handling capability

"dV/dt" represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/µs.

Note:
The values of dV/dt provided below must not be exceeded in order to avoid damaging the capacitor. These parameters are given for isolated pulses in such a way that the heat generated by one pulse will be completely dissipated before applying the next pulse.

### dV/dt values

| Lead spacing | 27.5 mm | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | B32714P | | | | | | |
| $V_R$ (V DC) | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| dV/dt (V/µs) | 40 | 50 | 75 | 85 | 100 | 120 | 140 |

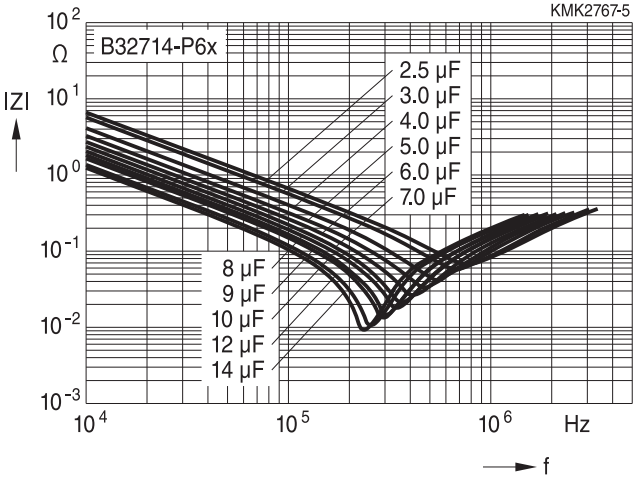
| Lead spacing | 37.5 mm | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | B32716P | | | | | | |
| $V_R$ (V DC) | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| dV/dt (V/µs) | 25 | 35 | 54 | 63 | 73 | 85 | 100 |

| Lead spacing | 52.5 mm | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | B32718P | | | | | | |
| $V_R$ (V DC) | 600 | 675 | 750 | 825 | 900 | 1050 | 1200 |
| dV/dt (V/µs) | 15 | 22 | 35 | 40 | 50 | 58 | 65 |

## Characteristics curves

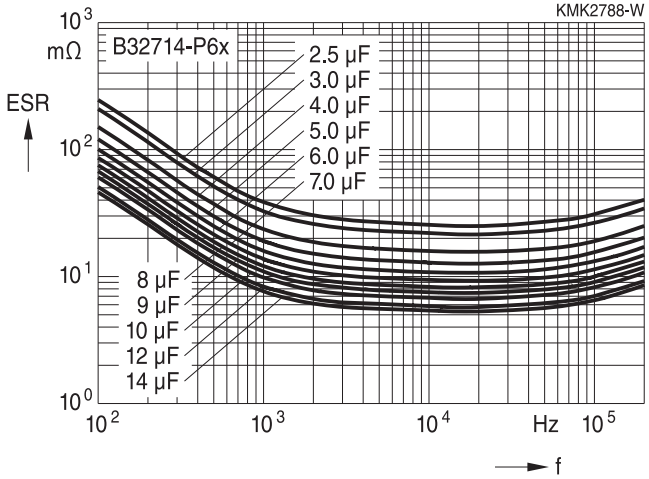
Impedance Z versus frequency f
(Typical values)

Lead spacing 27.5 mm
600 V DC



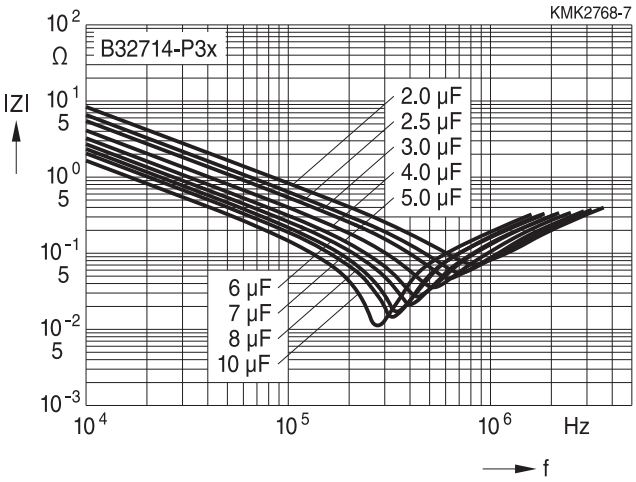

ESR versus frequency f
(Typical values)

Lead spacing 27.5 mm
600 V DC



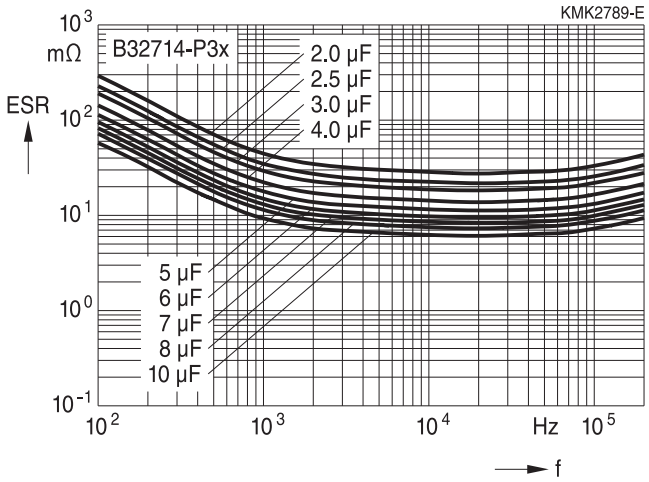

Impedance Z versus frequency f
(Typical values)

Lead spacing 27.5 mm
675 V DC




ESR versus frequency f
(Typical values)

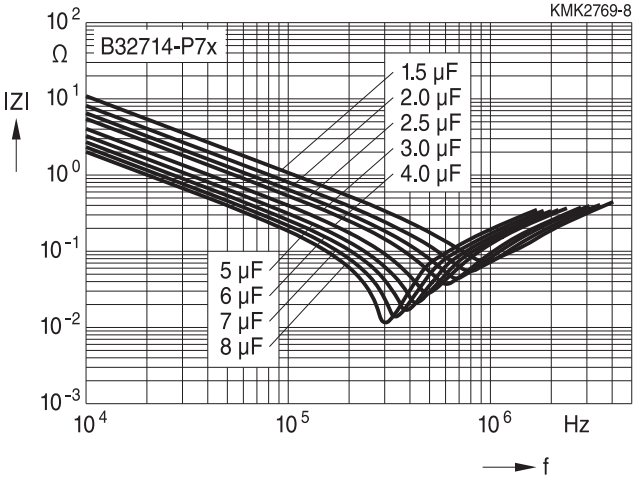
Lead spacing 27.5 mm
675 V DC



## Characteristics curves

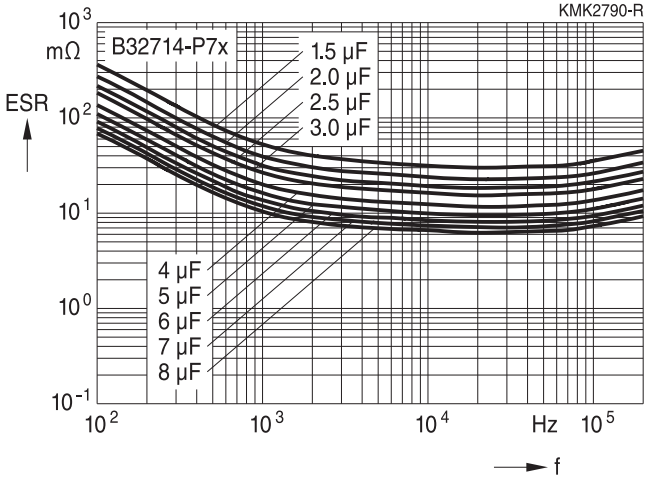
Impedance Z versus frequency f
(Typical values)

Lead spacing 27.5 mm
750 V DC



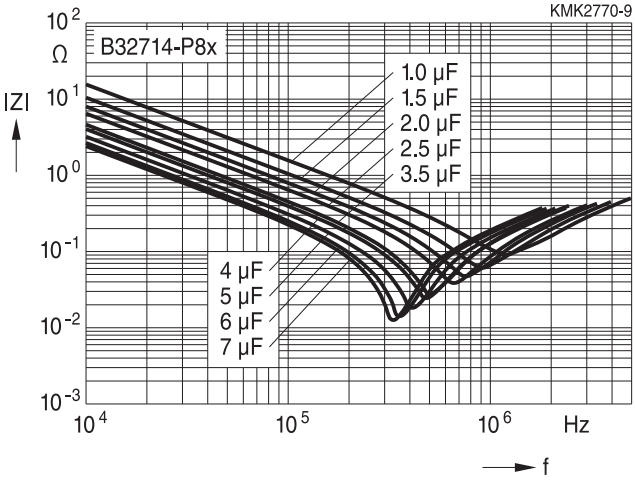

ESR versus frequency f
(Typical values)

Lead spacing 27.5 mm
750 V DC



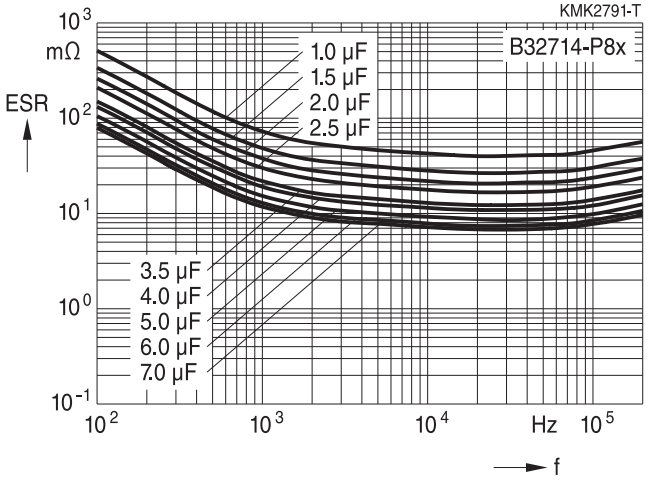

Impedance Z versus frequency f
(Typical values)

Lead spacing 27.5 mm
825 V DC




ESR versus frequency f
(Typical values)

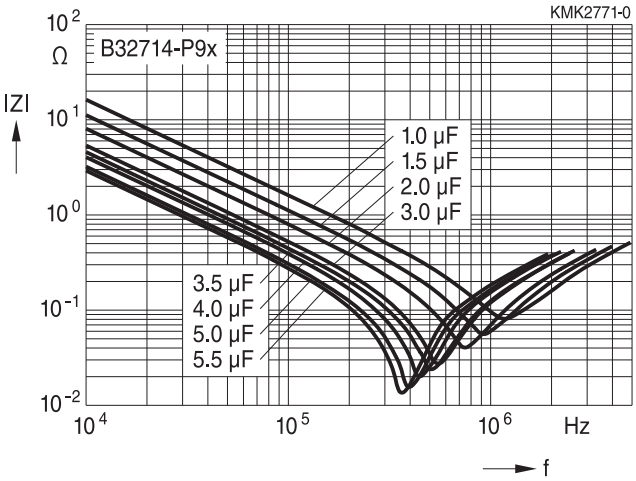
Lead spacing 27.5 mm
825 V DC



## Characteristics curves

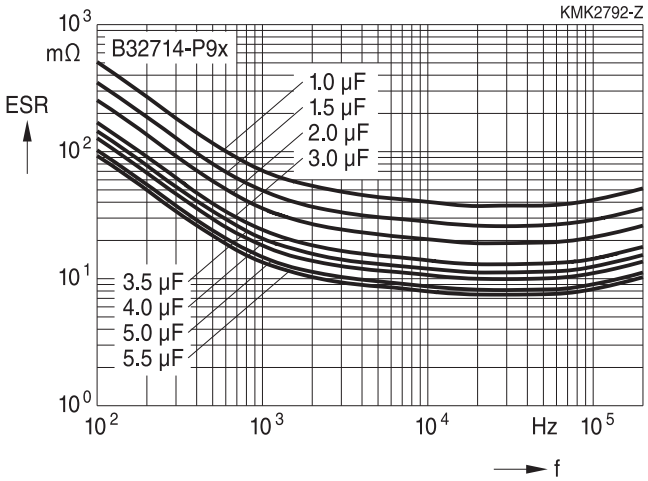
Impedance Z versus frequency f
(Typical values)

Lead spacing 27.5 mm
900 V DC



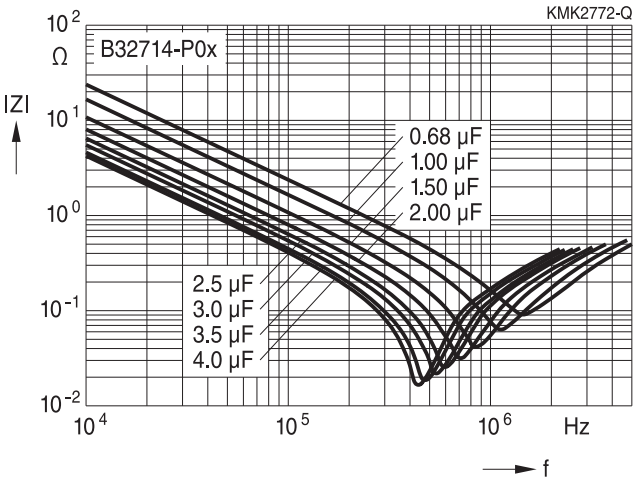

ESR versus frequency f
(Typical values)

Lead spacing 27.5 mm
900 V DC



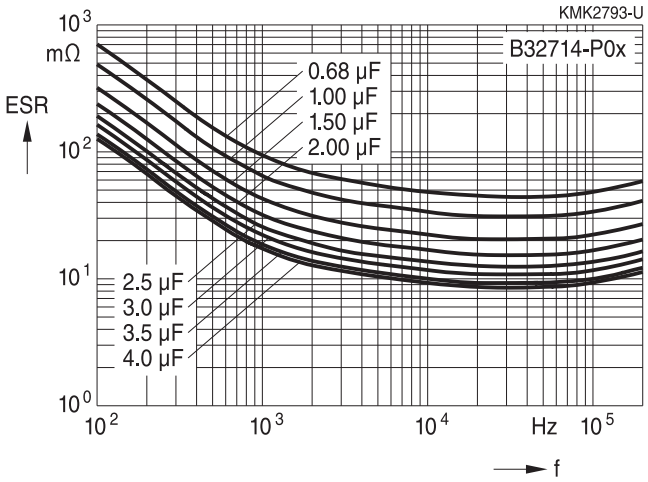

Impedance Z versus frequency f
(Typical values)

Lead spacing 27.5 mm
1050 V DC




ESR versus frequency f
(Typical values)

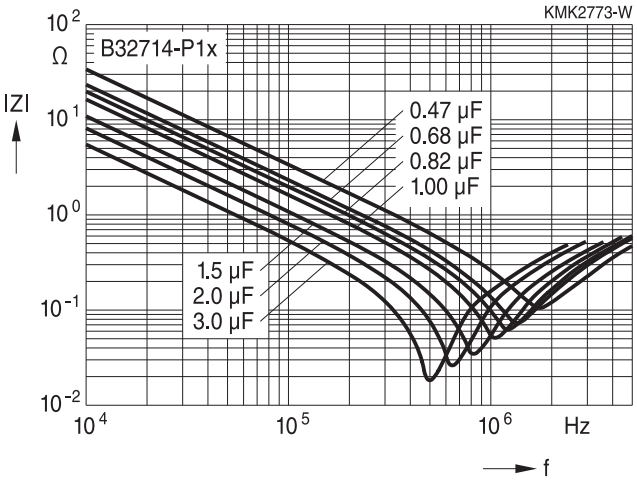
Lead spacing 27.5 mm
1050 V DC



## Characteristics curves

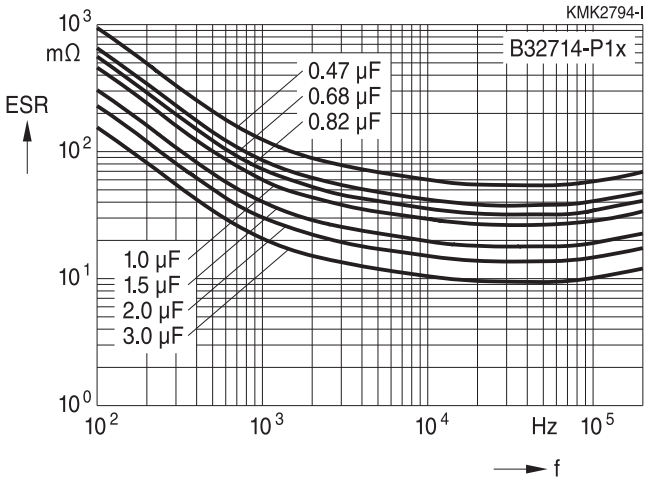
Impedance Z versus frequency f
(Typical values)

Lead spacing 27.5 mm
1200 V DC




ESR versus frequency f
(Typical values)

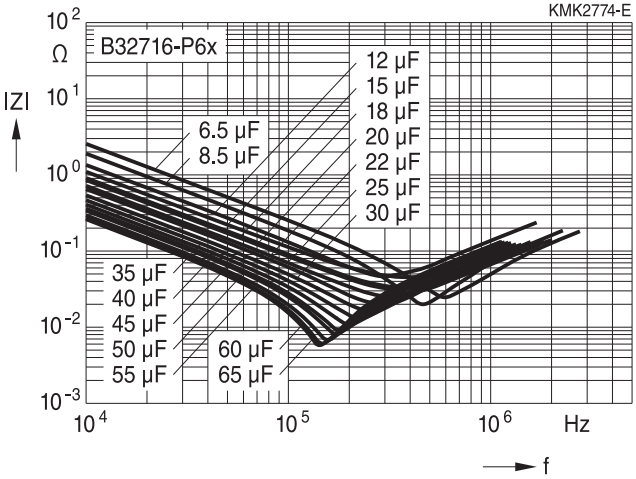
Lead spacing 27.5 mm
1200 V DC



## Characteristics curves

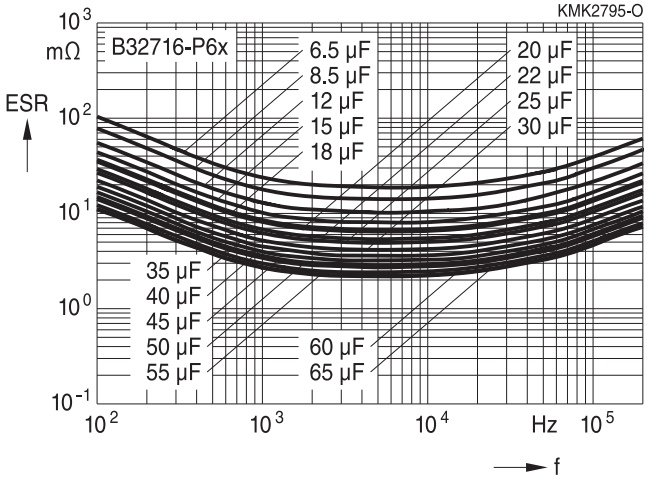
Impedance Z versus frequency f
(Typical values)

Lead spacing 37.5 mm
600 V DC



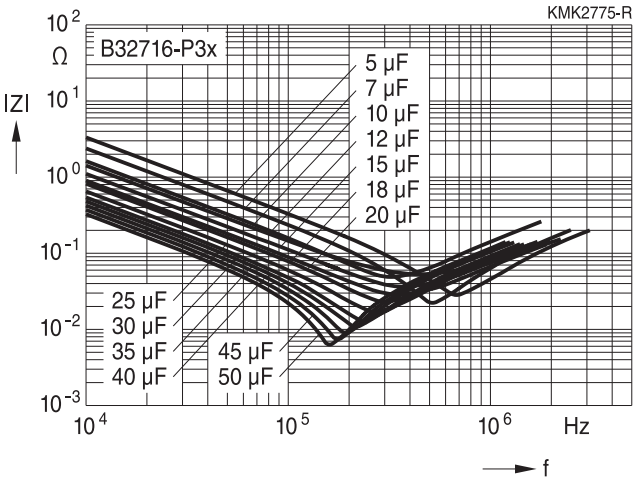

ESR versus frequency f
(Typical values)

Lead spacing 37.5 mm
600 V DC



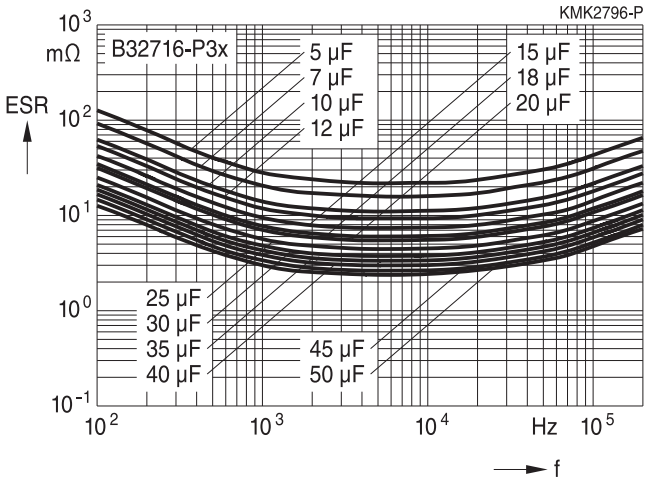

Impedance Z versus frequency f
(Typical values)

Lead spacing 37.5 mm
675 V DC




ESR versus frequency f
(Typical values)

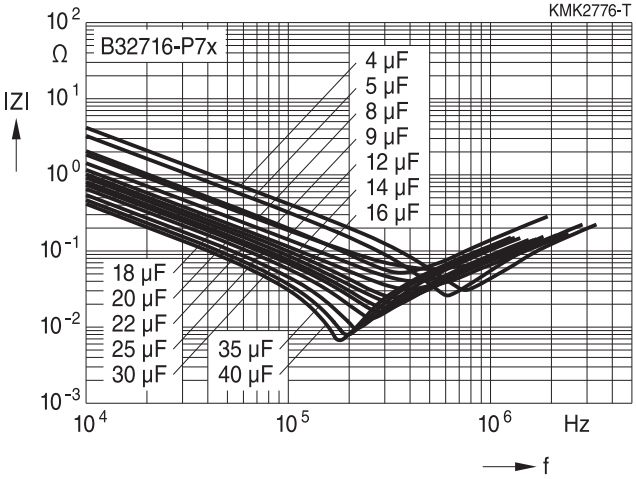
Lead spacing 37.5 mm
675 V DC



## Characteristics curves

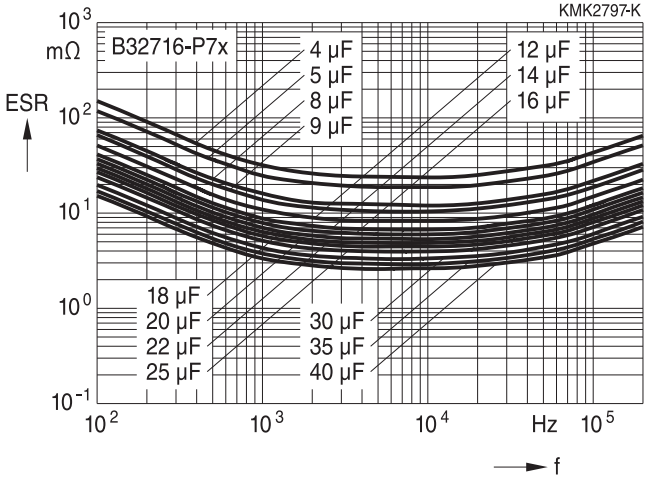
Impedance Z versus frequency f
(Typical values)

Lead spacing 37.5 mm
750 V DC



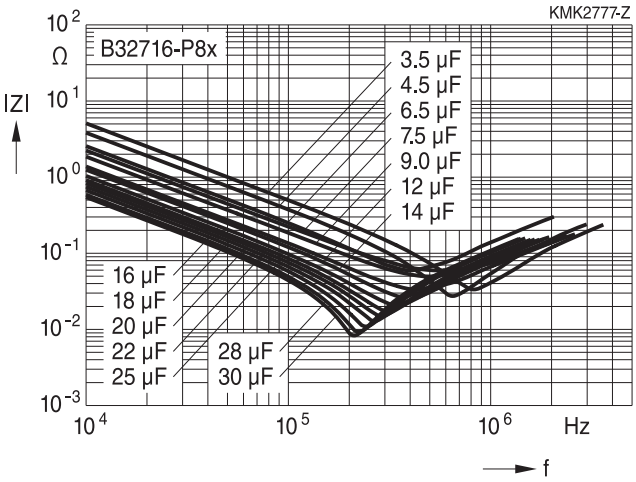

ESR versus frequency f
(Typical values)

Lead spacing 37.5 mm
750 V DC



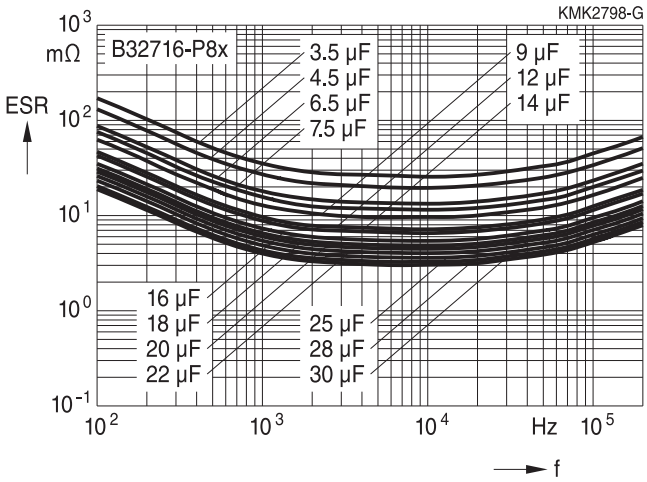

Impedance Z versus frequency f
(Typical values)

Lead spacing 37.5 mm
825 V DC




ESR versus frequency f
(Typical values)

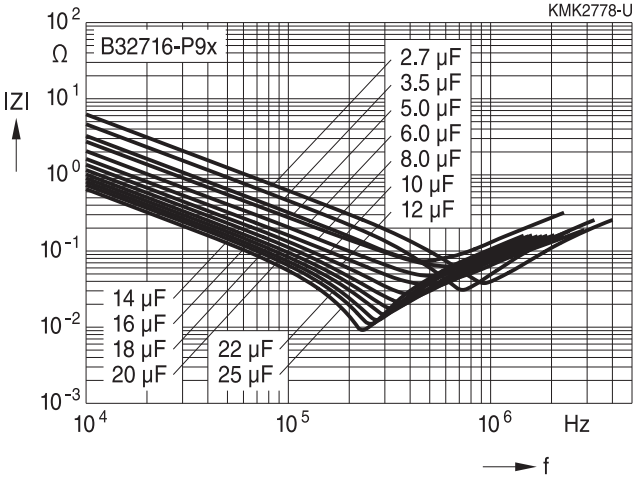
Lead spacing 37.5 mm
825 V DC



## Characteristics curves

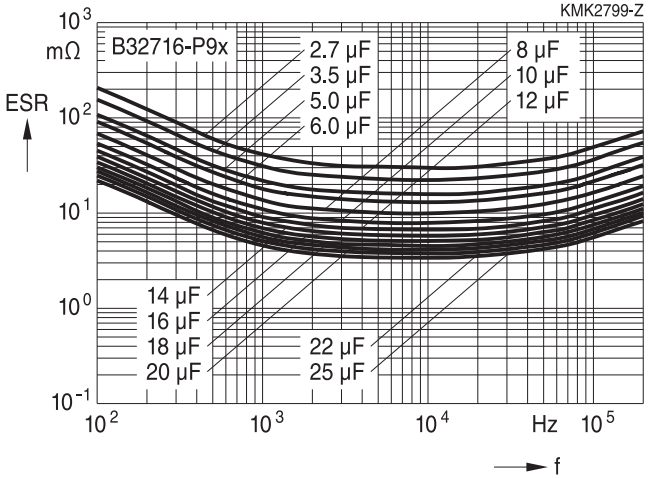
Impedance Z versus frequency f
(Typical values)

Lead spacing 37.5 mm
900 V DC



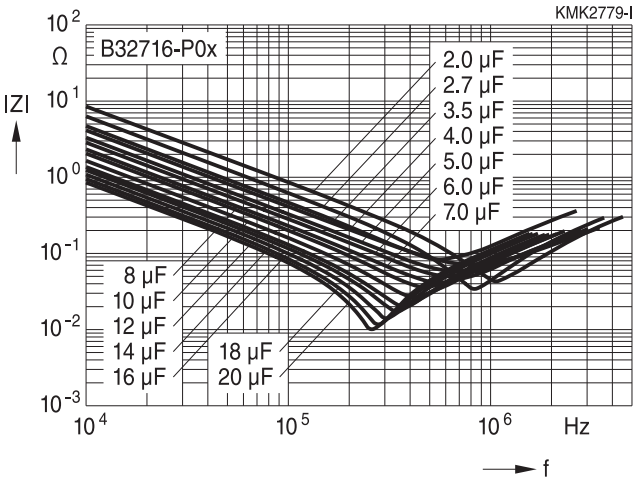

ESR versus frequency f
(Typical values)

Lead spacing 37.5 mm
900 V DC



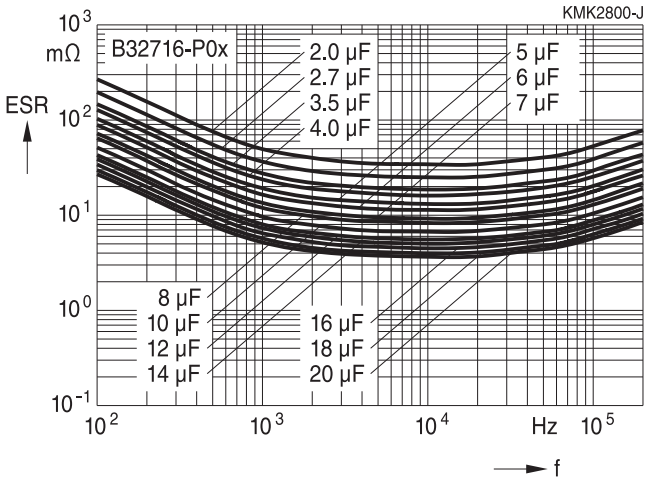

Impedance Z versus frequency f
(Typical values)

Lead spacing 37.5 mm
1050 V DC




ESR versus frequency f
(Typical values)

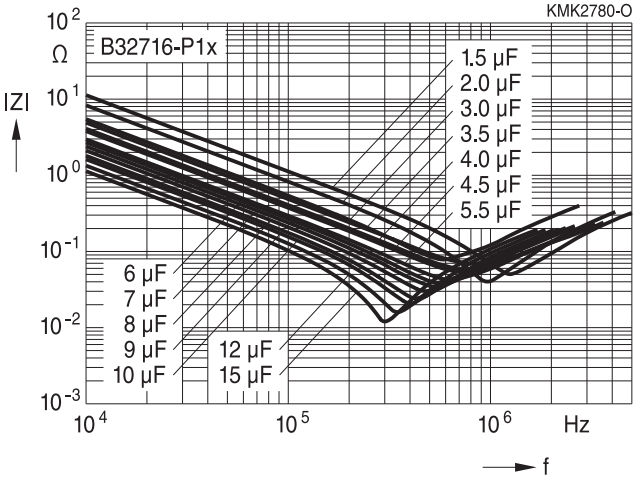
Lead spacing 37.5 mm
1050 V DC



## Characteristics curves

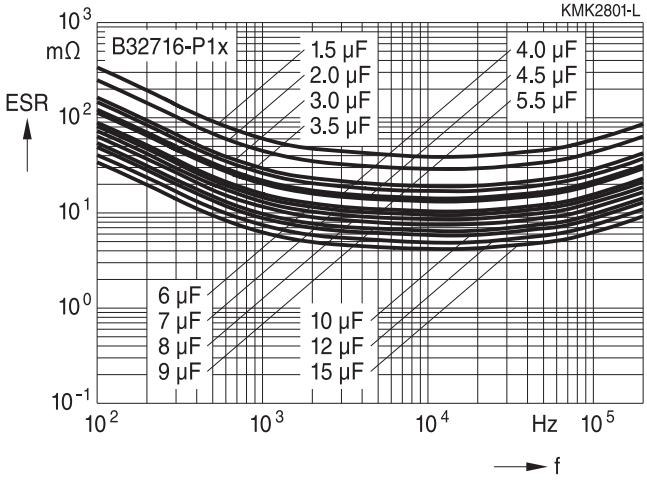
Impedance Z versus frequency f
(Typical values)

Lead spacing 37.5 mm
1200 V DC




ESR versus frequency f
(Typical values)

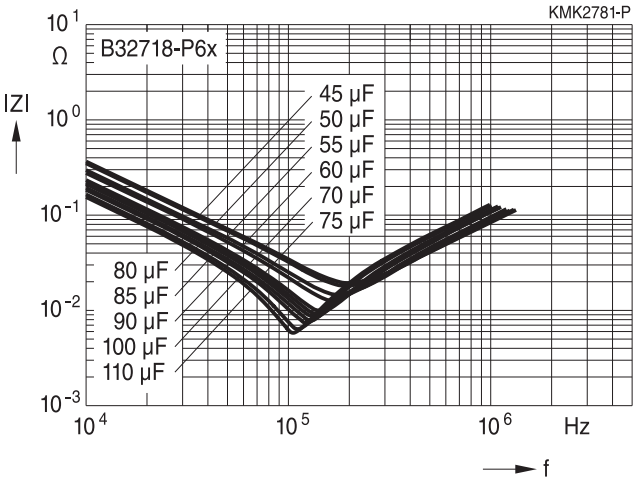
Lead spacing 37.5 mm
1200 V DC



## Characteristics curves

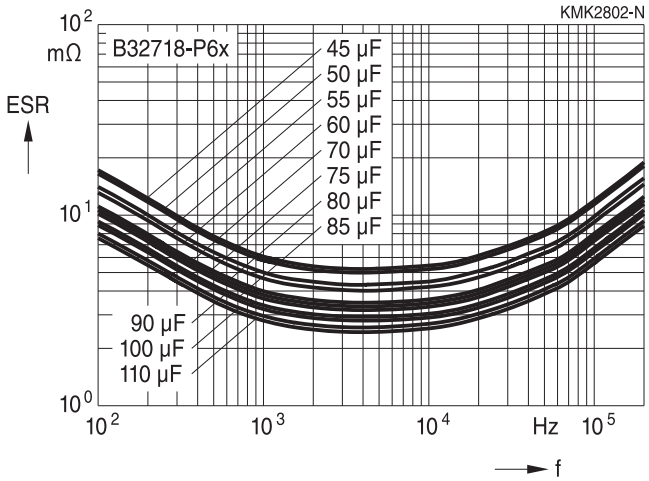
Impedance Z versus frequency f
(Typical values)

Lead spacing 52.5 mm
600 V DC



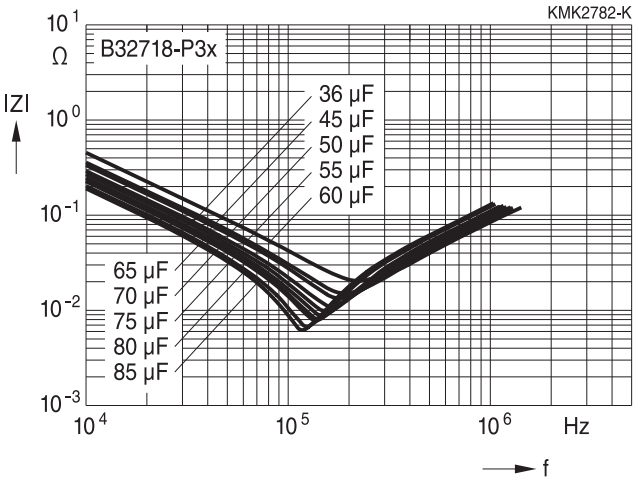

ESR versus frequency f
(Typical values)

Lead spacing 52.5 mm
600 V DC



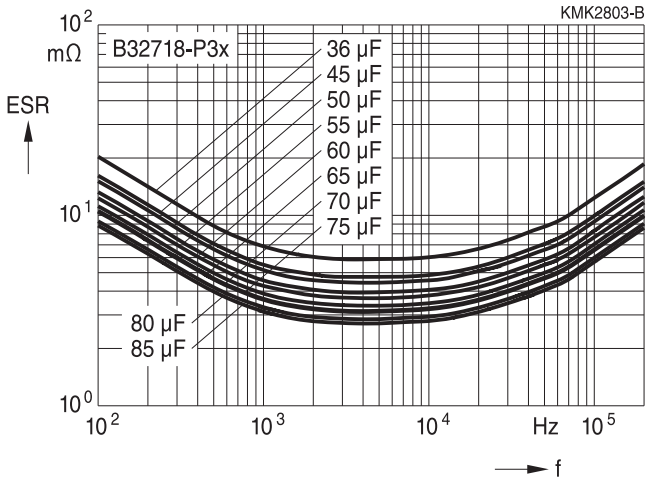

Impedance Z versus frequency f
(Typical values)

Lead spacing 52.5 mm
675 V DC




ESR versus frequency f
(Typical values)

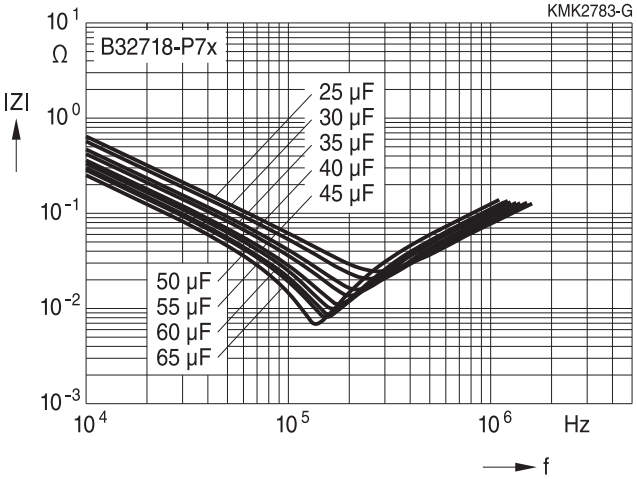
Lead spacing 52.5 mm
675 V DC



## Characteristics curves

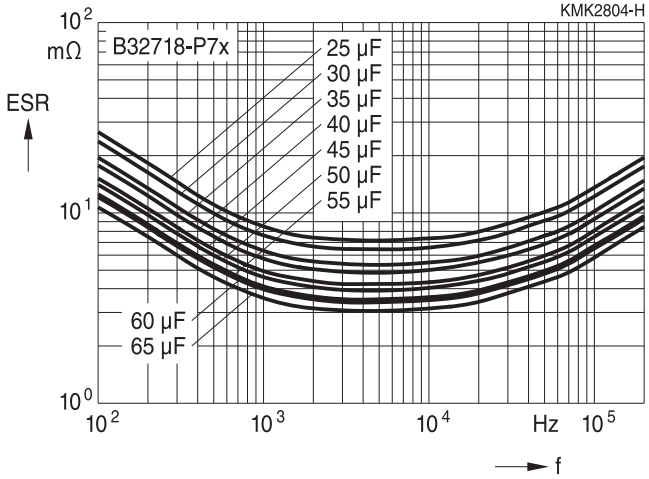
Impedance Z versus frequency f
(Typical values)

Lead spacing 52.5 mm
750 V DC



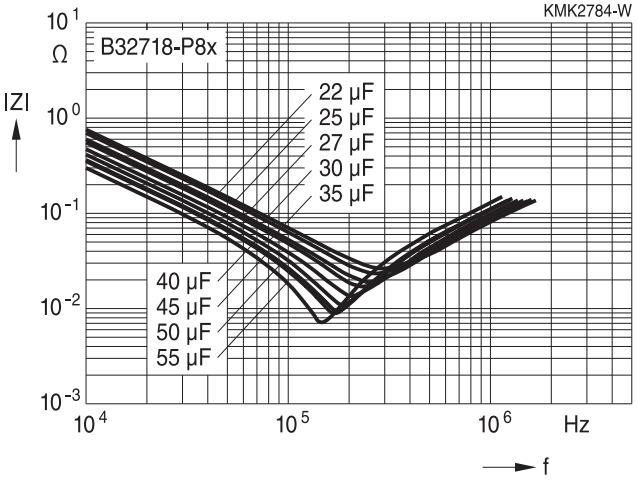

ESR versus frequency f
(Typical values)

Lead spacing 52.5 mm
750 V DC



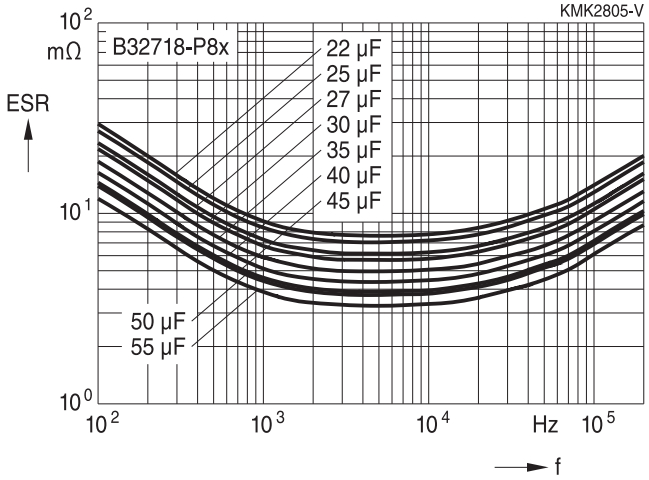

Impedance Z versus frequency f
(Typical values)

Lead spacing 52.5 mm
825 V DC




ESR versus frequency f
(Typical values)

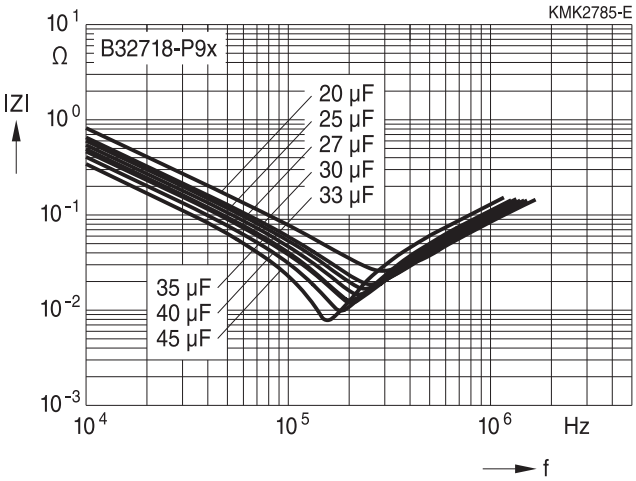
Lead spacing 52.5 mm
825 V DC



## Characteristics curves

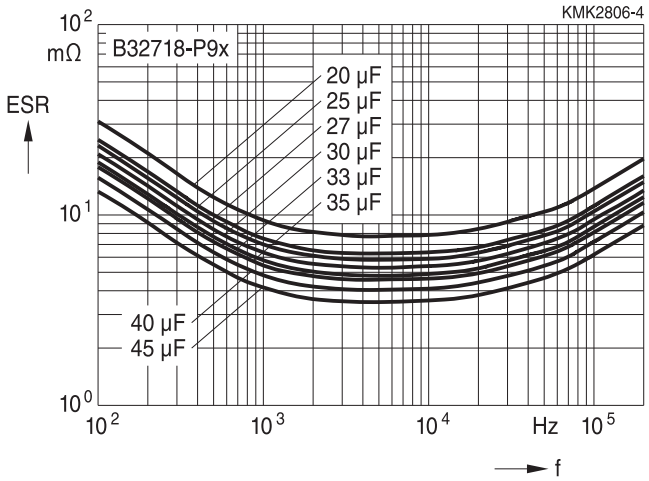
Impedance Z versus frequency f
(Typical values)

Lead spacing 52.5 mm
900 V DC



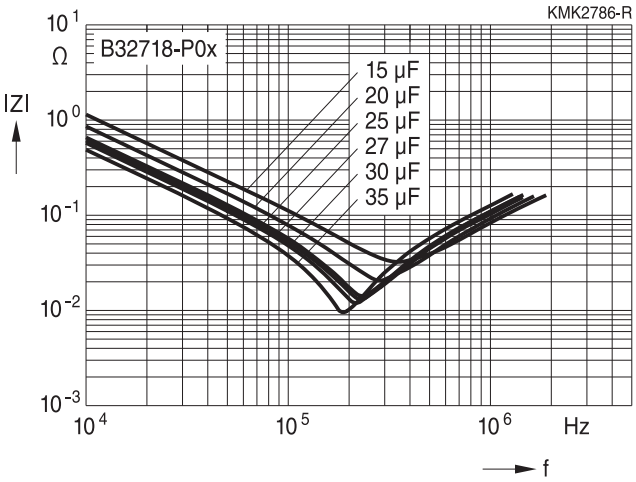

ESR versus frequency f
(Typical values)

Lead spacing 52.5 mm
900 V DC



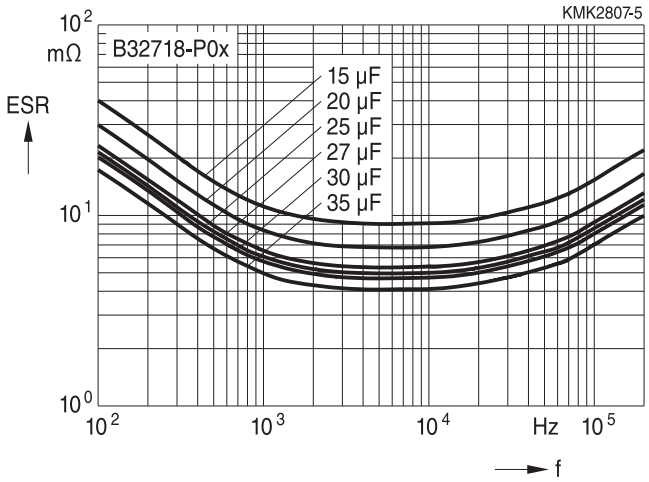

Impedance Z versus frequency f
(Typical values)

Lead spacing 52.5 mm
1050 V DC




ESR versus frequency f
(Typical values)

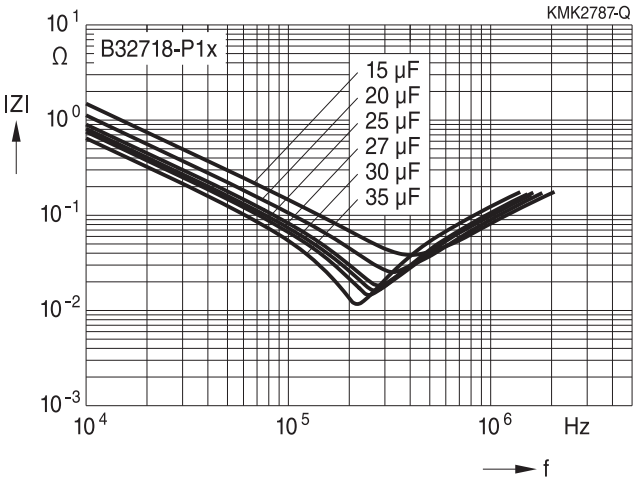
Lead spacing 52.5 mm
1050 V DC



## Characteristics curves

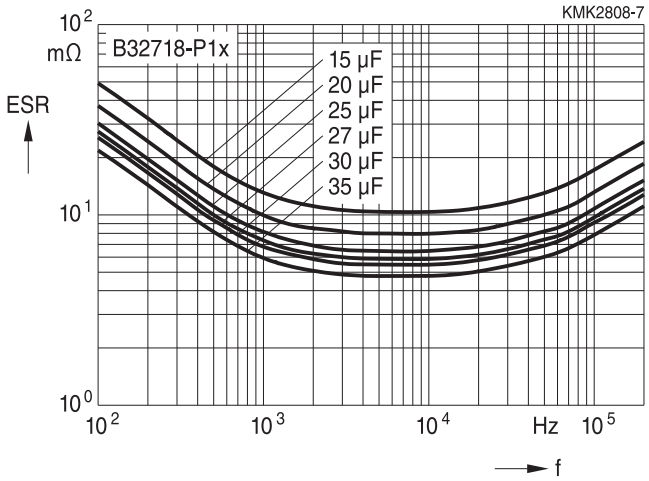
Impedance Z versus frequency f
(Typical values)

Lead spacing 52.5 mm
1200 V DC




ESR versus frequency f
(Typical values)

Lead spacing 52.5 mm
1200 V DC

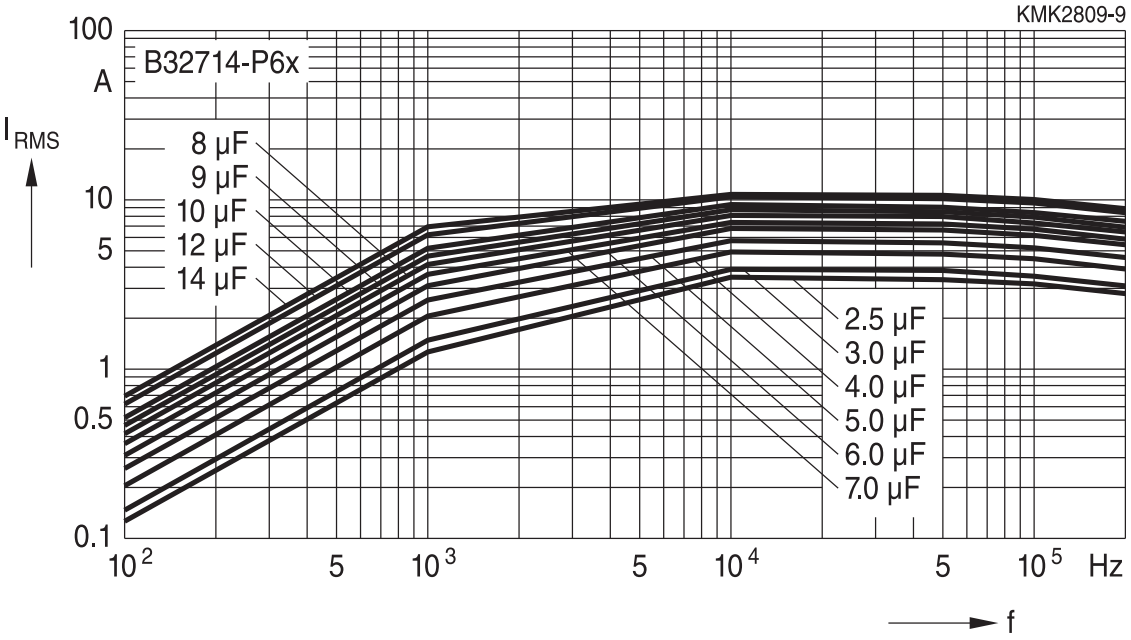


## Characteristics curves

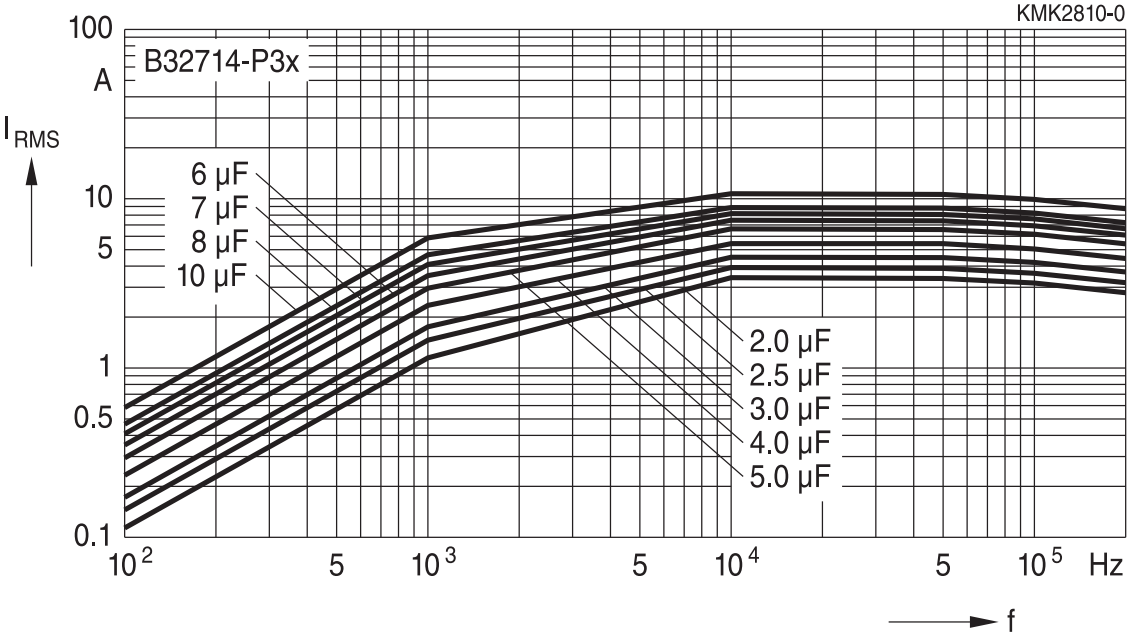
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 27.5 mm

600 V DC




675 V DC

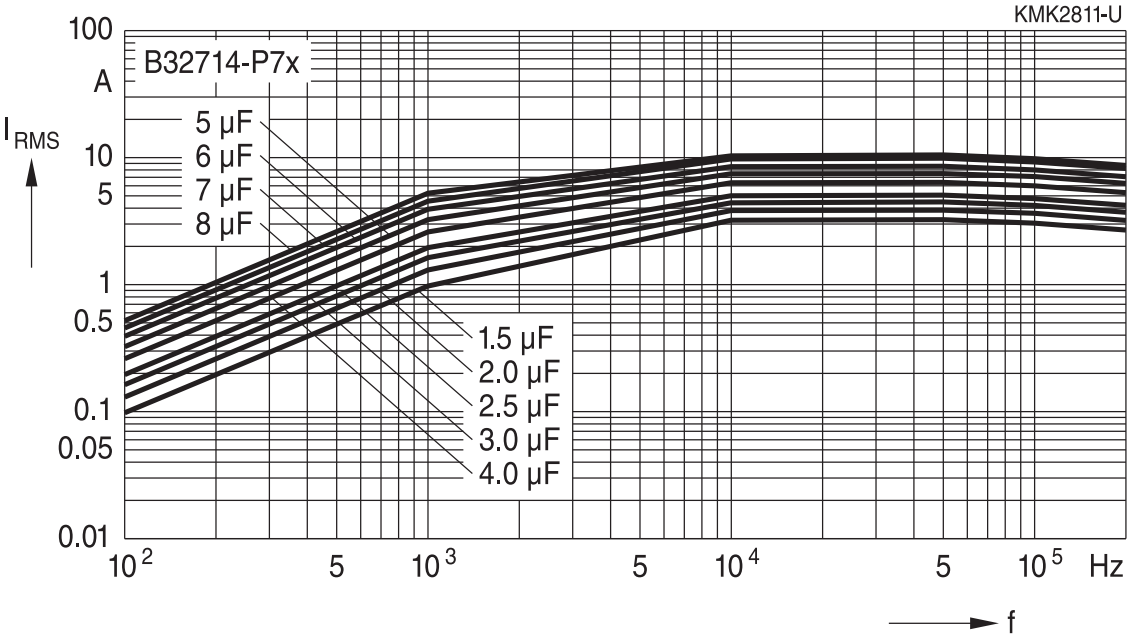


## Characteristics curves

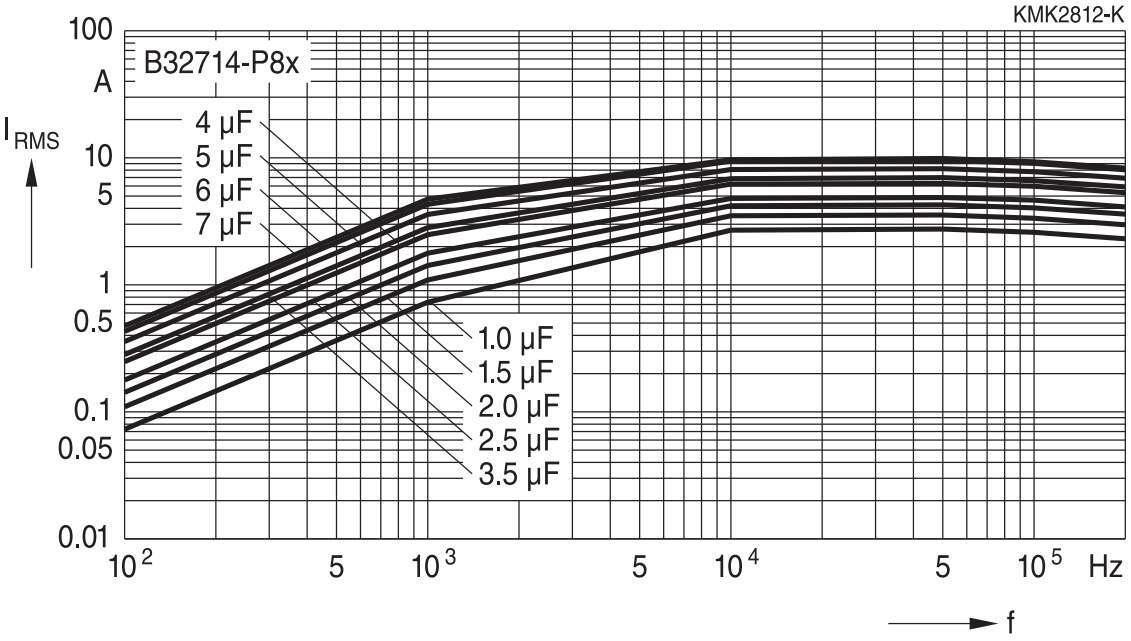
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 27.5 mm

750 V DC




825 V DC

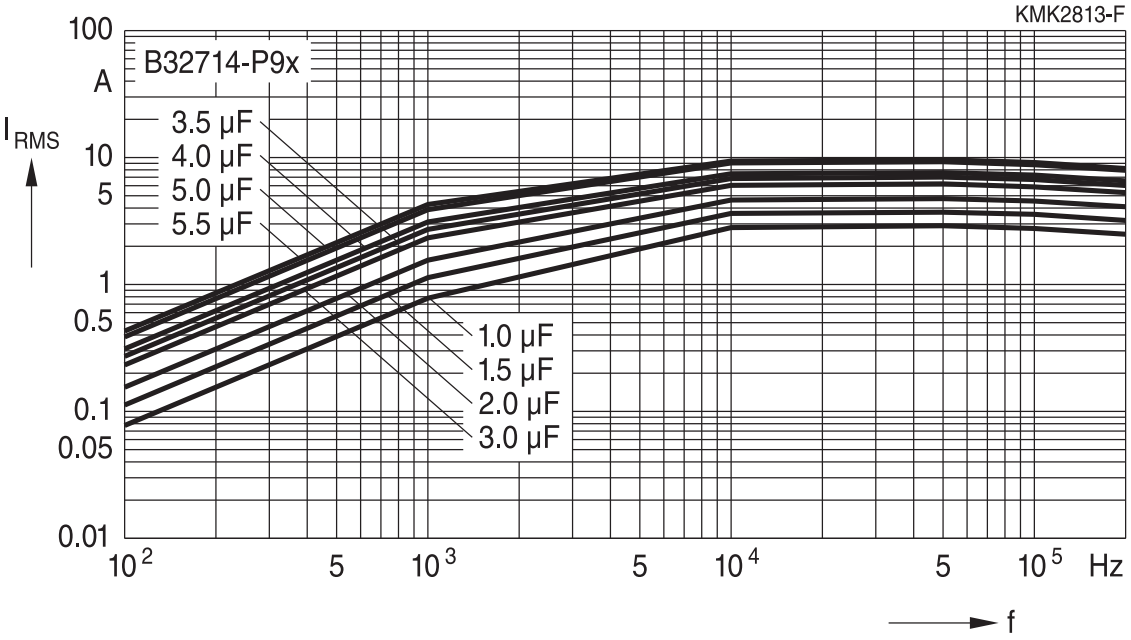


## Characteristics curves

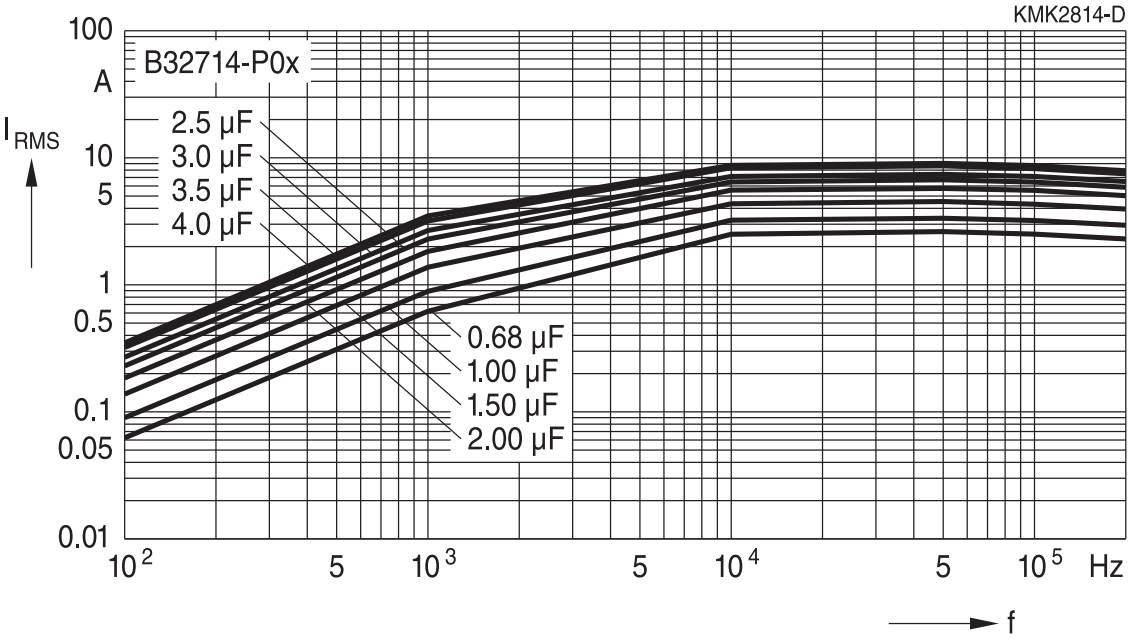
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 27.5 mm

900 V DC




1050 V DC

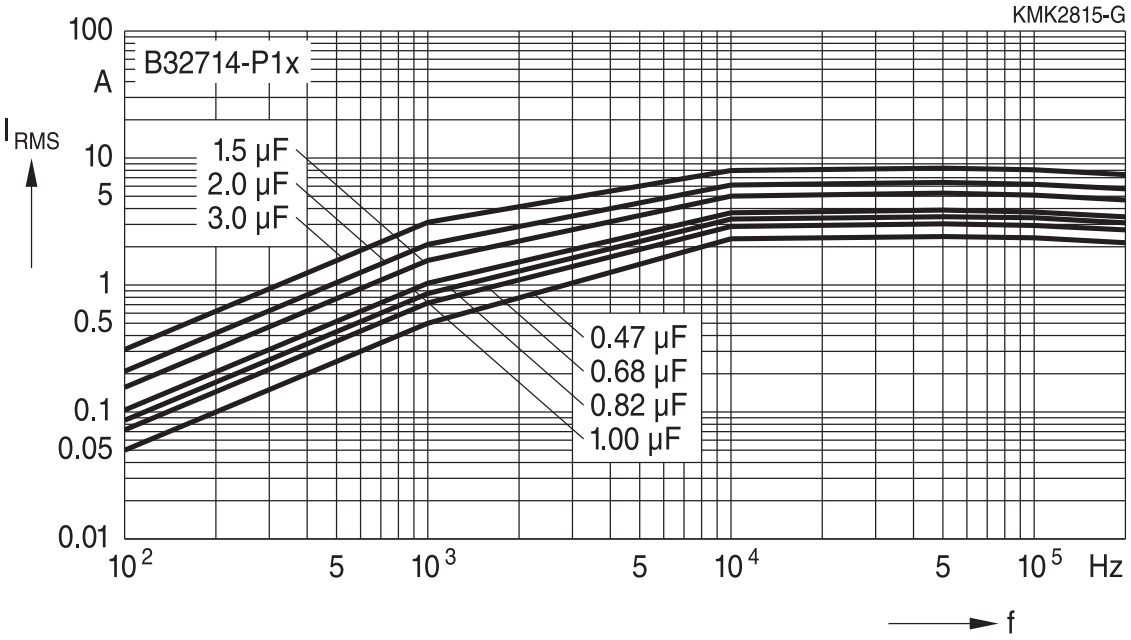


## Characteristics curves

### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 27.5 mm

1200 V DC

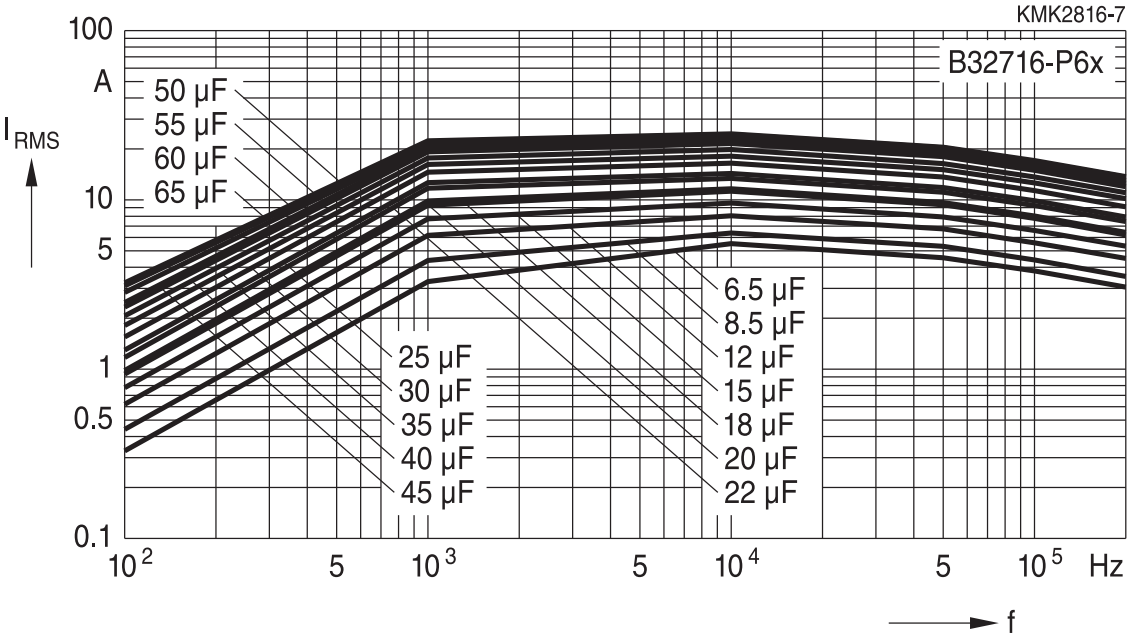


## Characteristics curves

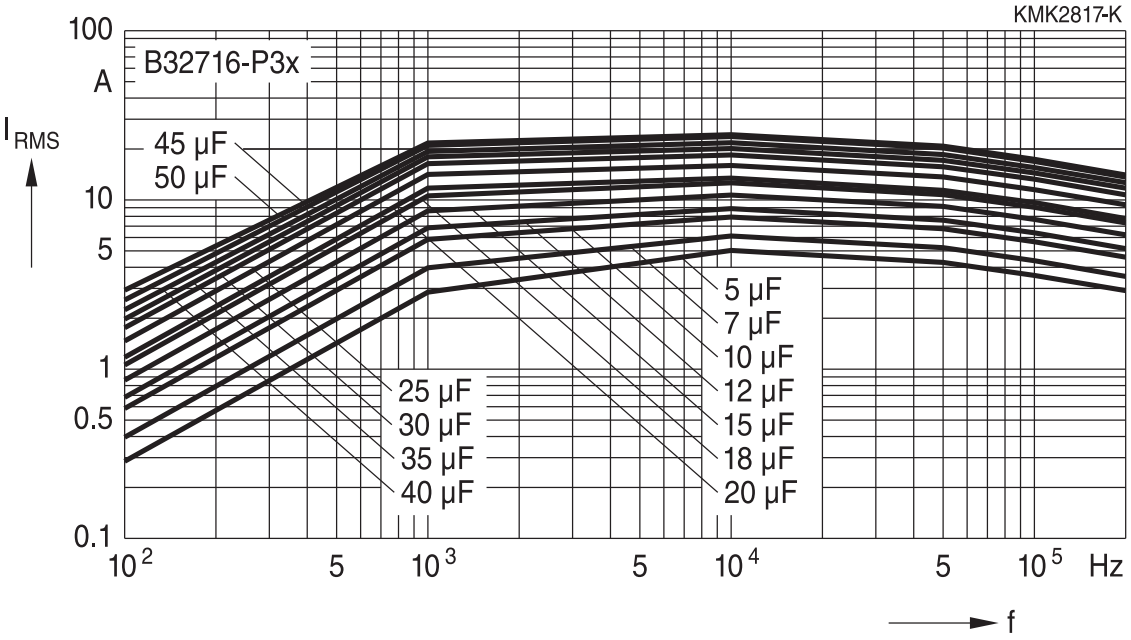
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 37.5 mm

600 V DC




675 V DC

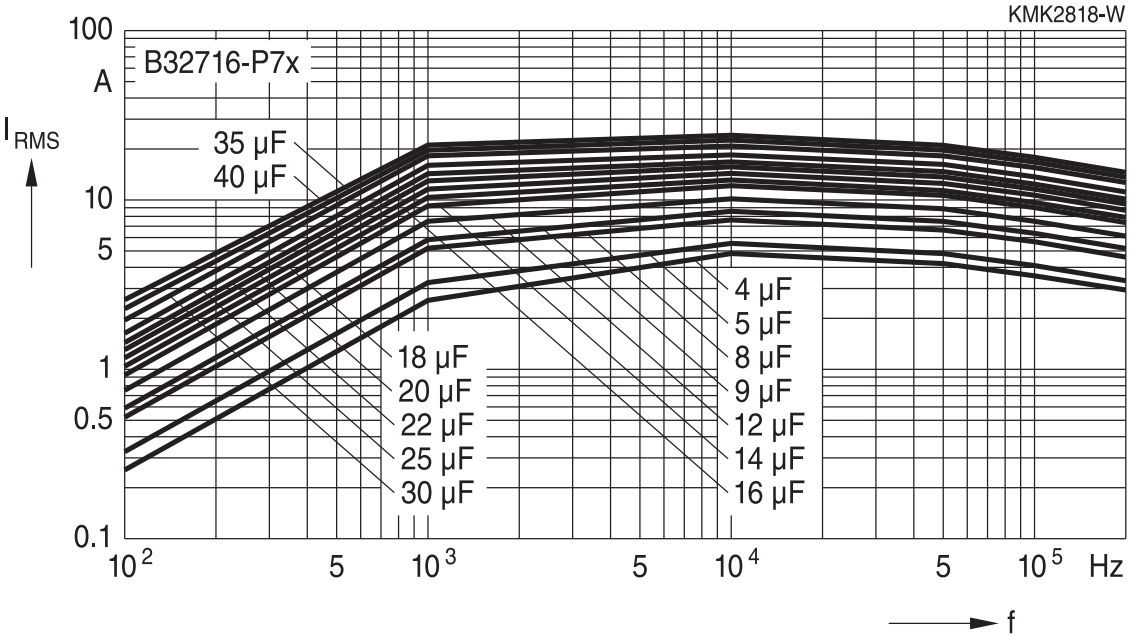


## Characteristics curves

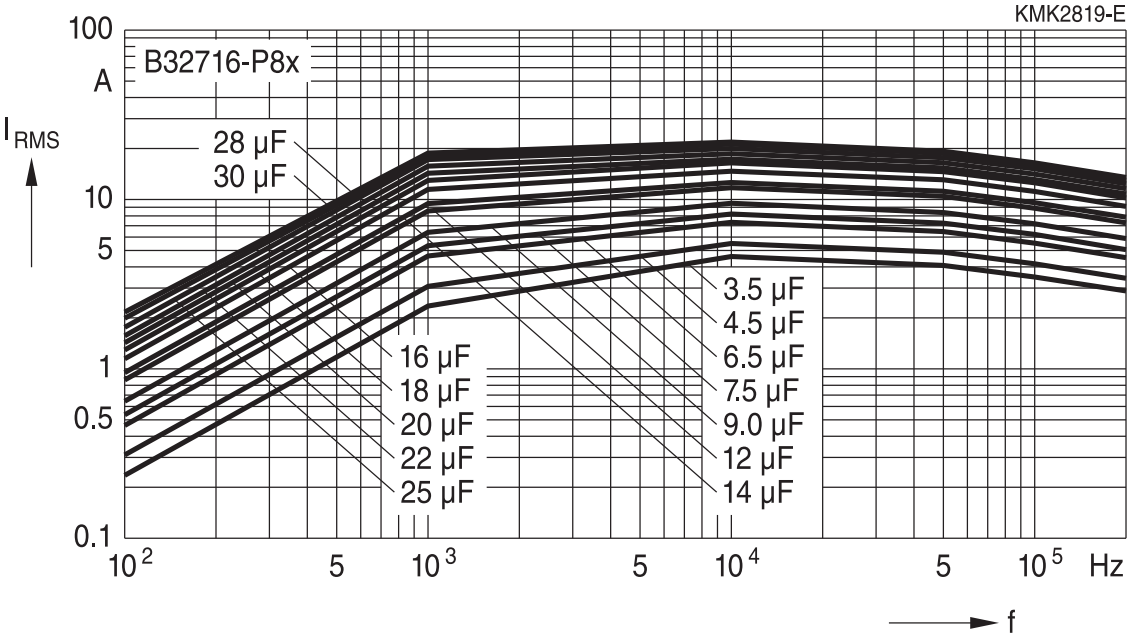
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 37.5 mm

750 V DC




825 V DC

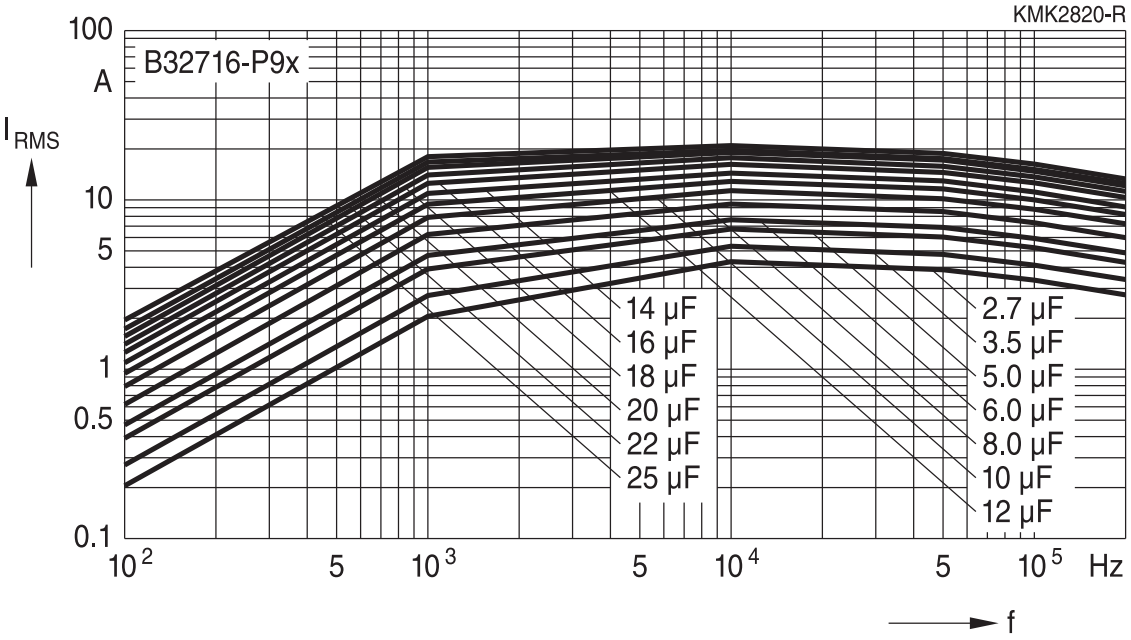


## Characteristics curves

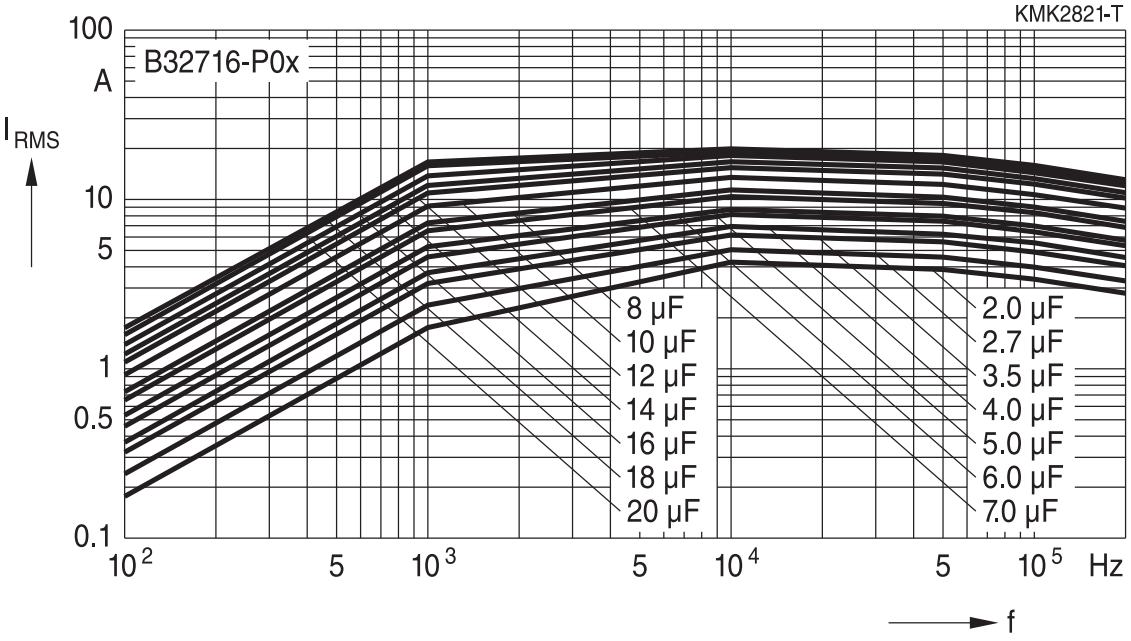
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 37.5 mm

900 V DC




1050 V DC

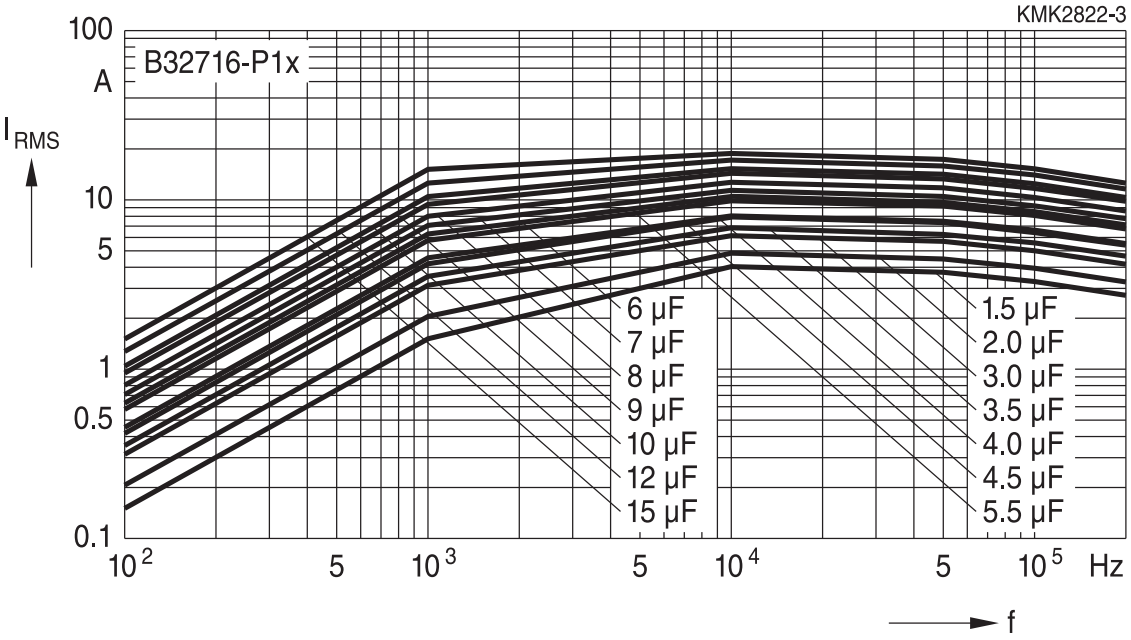


## Characteristics curves

### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 37.5 mm

1200 V DC

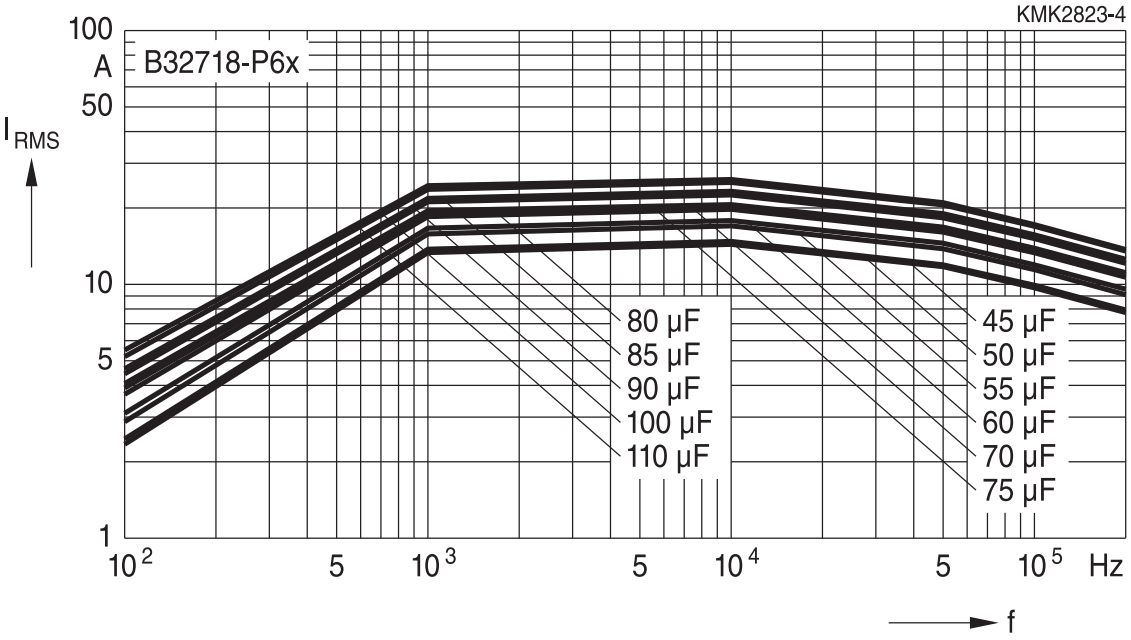


## Characteristics curves

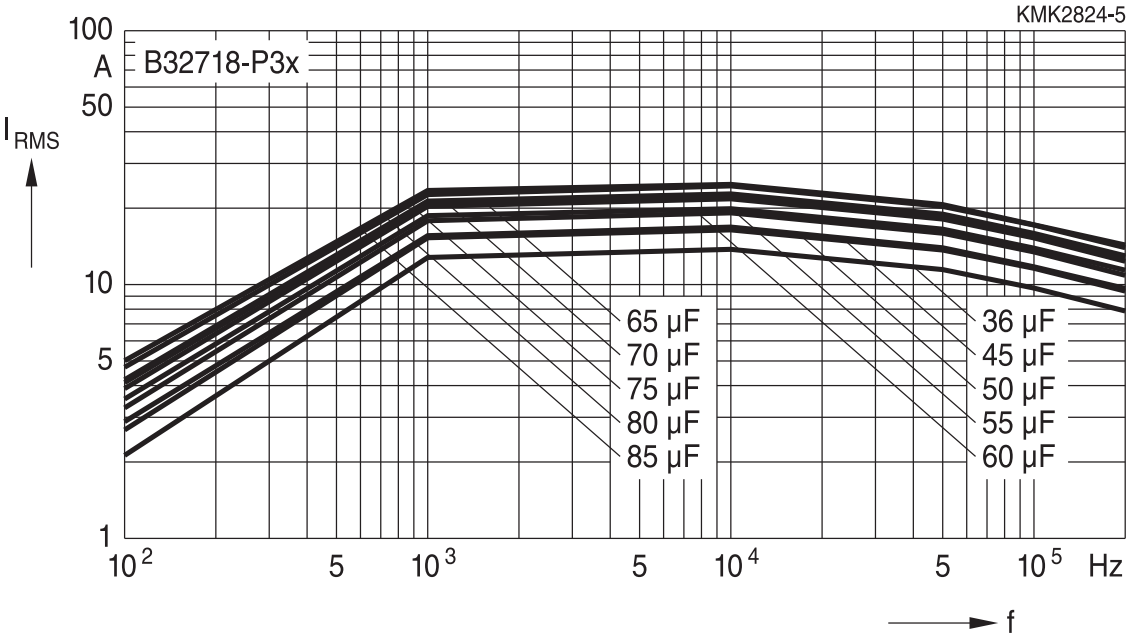
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 52.5 mm

600 V DC




675 V DC

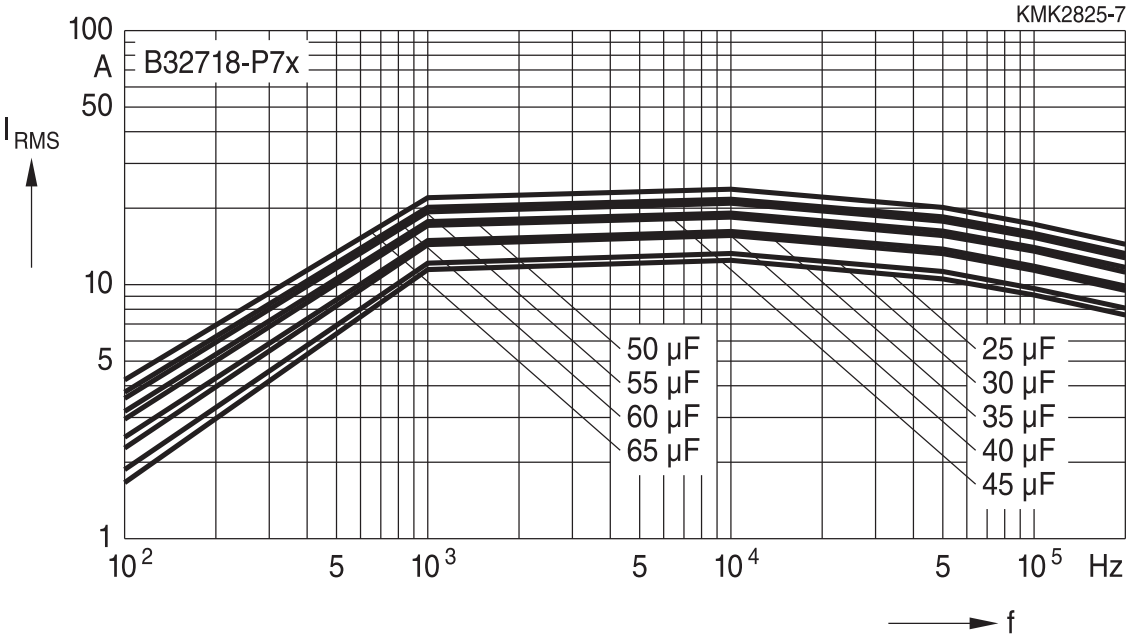


## Characteristics curves

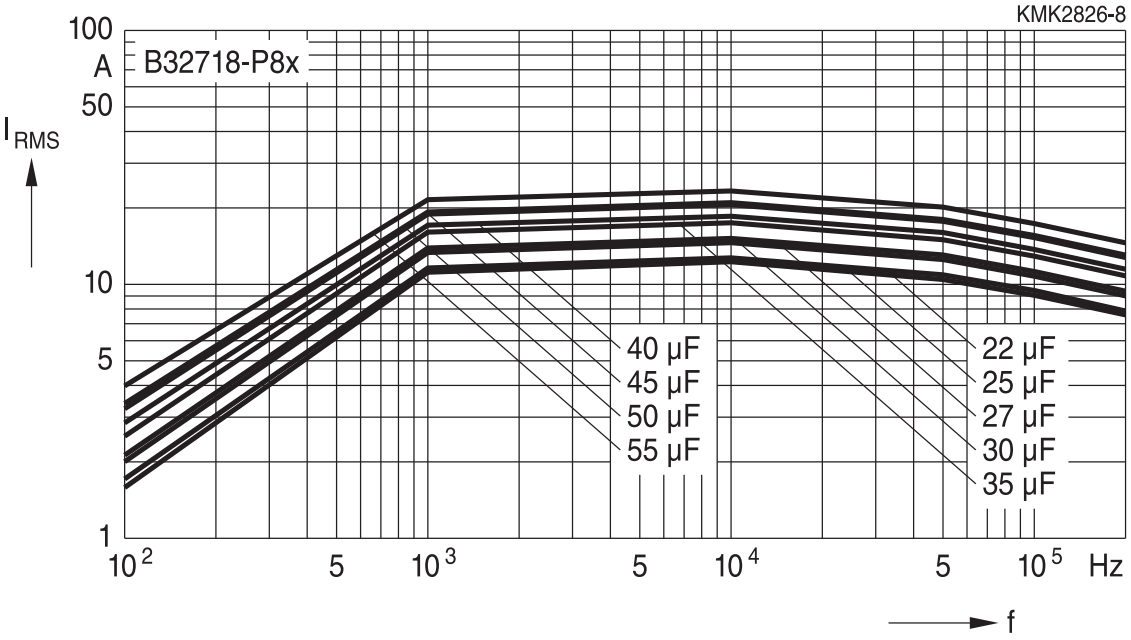
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 52.5 mm

750 V DC




825 V DC

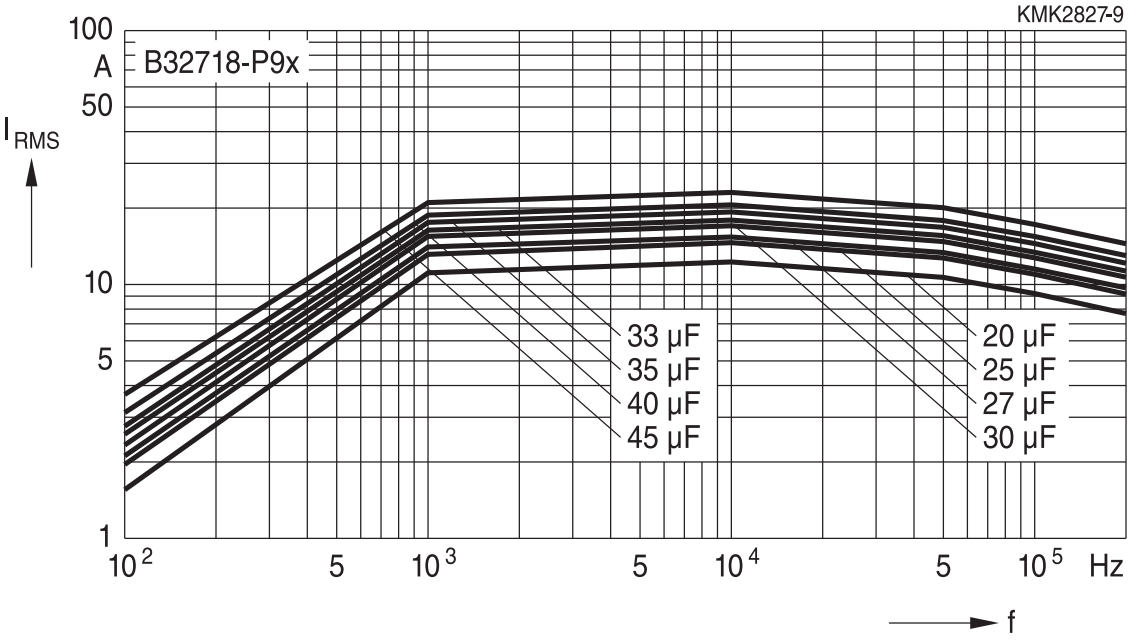


## Characteristics curves

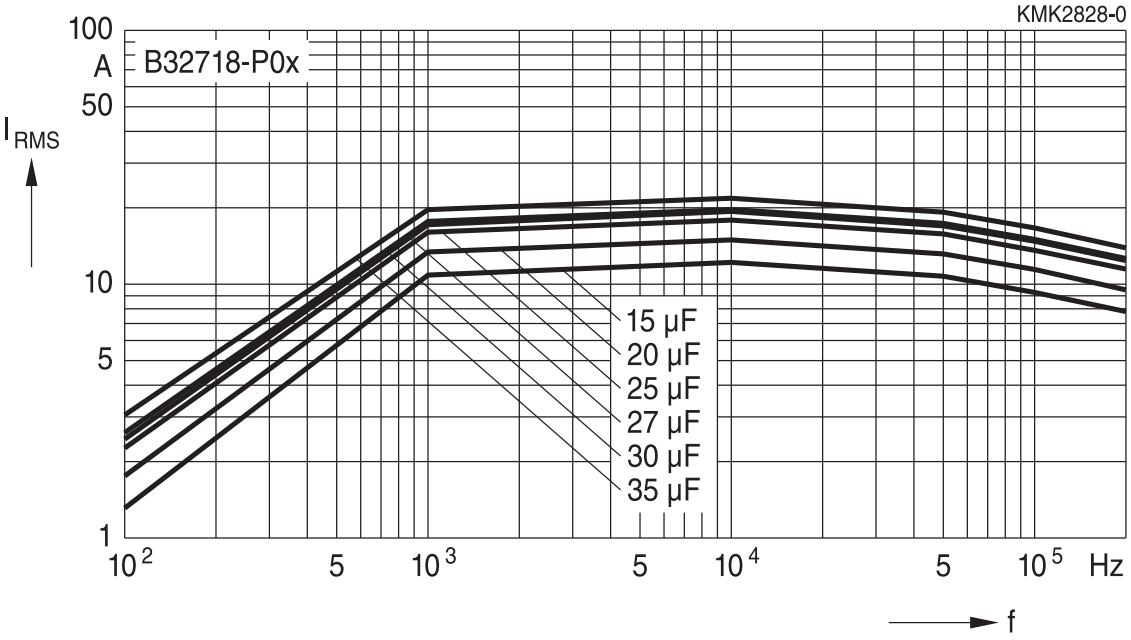
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 52.5 mm

900 V DC




1050 V DC

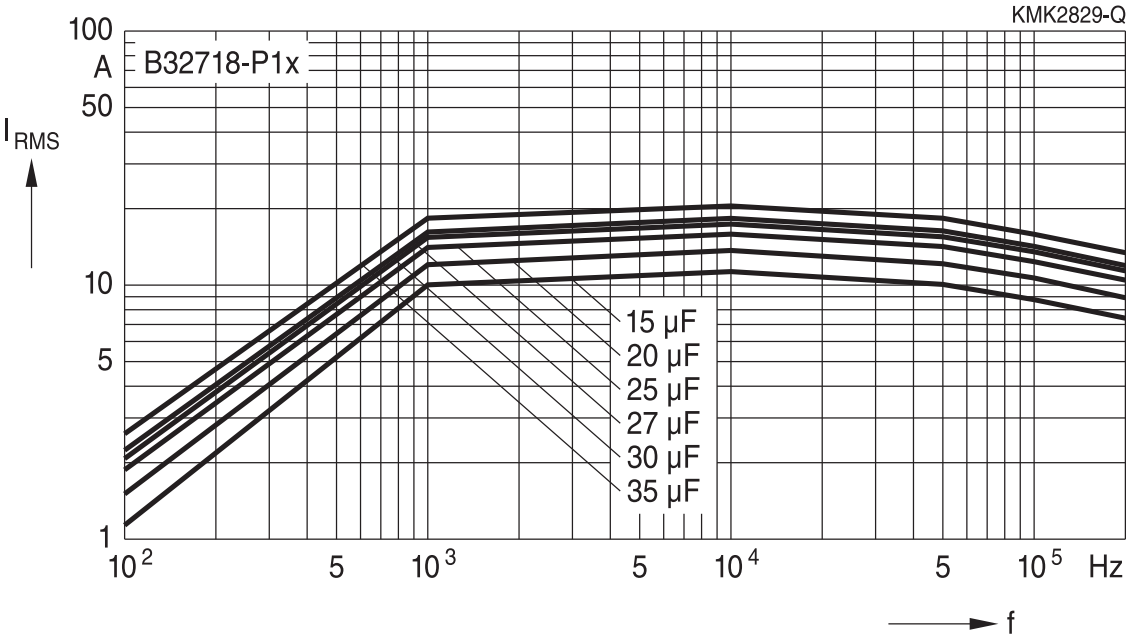


## Characteristics curves

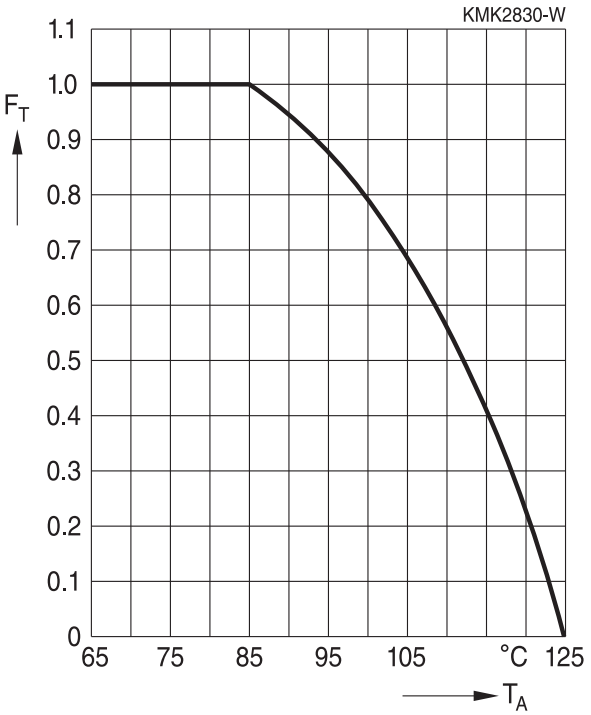
### Permissible current $I_{RMS}$ versus frequency f at $T_a$ ≤85 °C

### Lead spacing 52.5 mm

1200 V DC



### Curves characteristics ($I_{RMS}$ derating versus temperature)




Maximum $I_{RMS}$ current as function of the ambient temperature: $I_{RMS}$ ($T_{amb}$) = Factor x $I_{RMS}$ (85 °C)

### Heat transference for self heating calculation

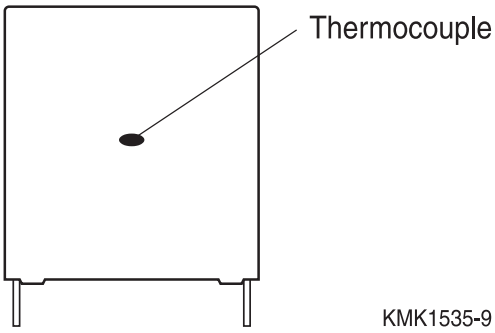



Figure 1

| Box dimensions | | | Equivalent heat coefficient |
|---|---|---|---|
| w (mm) | h (mm) | l (mm) | G (mW/°C) |
| 11.0 | 19.0 | 31.5 | 24 |
| 11.0 | 21.0 | 31.5 | 28 |
| 12.5 | 21.5 | 31.5 | 30 |
| 13.5 | 23.0 | 31.5 | 32 |
| 14.0 | 24.5 | 31.5 | 35 |
| 15.0 | 24.5 | 31.5 | 36 |
| 16.0 | 30.0 | 31.5 | 40 |
| 18.0 | 27.5 | 31.5 | 44 |
| 18.0 | 33.0 | 31.5 | 48 |
| 19.0 | 30.0 | 31.5 | 48 |
| 21.0 | 31.0 | 31.5 | 51 |
| 22.0 | 36.5 | 31.5 | 58 |
| 18.0 | 32.5 | 42.0 | 59 |
| 18.5 | 35.5 | 42.0 | 64 |
| 20.0 | 39.5 | 42.0 | 72 |
| 22.0 | 37.0 | 42.0 | 72 |
| 24.0 | 19.0 | 42.0 | 48 |
| 24.0 | 15.0 | 42.0 | 44 |
| 28.0 | 37.0 | 42.0 | 83 |
| 24.0 | 44.0 | 42.0 | 84 |
| 28.0 | 42.5 | 42.0 | 90 |
| 30.0 | 45.0 | 42.0 | 100 |
| 33.0 | 48.0 | 42.0 | 110 |
| 35.0 | 50.0 | 42.0 | 117 |
| 35.0 | 54.0 | 42.0 | 124 |
| 38.0 | 57.0 | 42.0 | 133 |
| 42.5 | 60.0 | 42.5 | 150 |

| Box dimensions | | | Equivalent heat coefficient |
|---|---|---|---|
| w (mm) | h (mm) | l (mm) | G (mW/°C) |
| 30.0 | 45.0 | 57.5 | 125 |
| 35.0 | 50.0 | 57.5 | 145 |
| 38.0 | 57.5 | 57.5 | 165 |
| 45.0 | 55.0 | 57.5 | 180 |
| 45.0 | 57.0 | 57.5 | 185 |
| 45.0 | 65.0 | 57.5 | 200 |

The equivalent heat coefficient “G (mW/°C)” is given for measuring the temperature on the lateral surface of the plastic box as Figure 1 shows. By using a thermocouple and avoiding effect of radiation and convection the temperature measured during operation conditions should be a result of the dissipated power divided by the equivalent heat coefficient.

**Self heating by power dissipation & equivalent heat coefficient**

The $I_{RMS}$ and consequently the power dissipation must be limited during operation in order to not exceed the maximum limit of ΔT allowed for this series. ΔT given for this series is equal or lower than 15 °C at operating temperature (85 °C), for higher ambient temperatures $\Delta T_{max}(T)$ will have the same derating factor than $I_{RMS}$ vs temperature and then an equivalent derating as per:

$\Delta T_{max}$ (T) = (Factor)$^2$ x ΔT(85 °C)

For any particular $I_{RMS}$ the ΔT may be calculated by:

ΔT(°C) = $P_{dis}$ (mW) / G (mW/°C)

Where ΔT (°C) is the difference between the temperature measured on the box (see figure 1) and the ambient temperature when capacitor is working during normal operation; ΔT (°C) = $T_{op}$ (°C) – $T_{amb}$ (°C). It represents the increasing of temperature provoked by the $I_{RMS}$ during operation. G (mW/°C) is the equivalent heat coefficient described above and $P_{dis}$ (mW) is the dissipated power defined by:

$P_{dis}$ (mW) = $ESR_{typ}$ (mΩ) x $I_{RMS}^2$ ($A_{RMS}$)

**Example for thermal calculation:**

We will take B32718P7306K (30 µF/750 V) as reference type for thermal calculation. Considering the following load and capacitor characteristics:

$I_{RMS}$: 7 $A_{RMS}$ at 10 kHz
$T_A$: 95 °C
Box: 30 x 45 x 57.5
G (mW/°C): 125

Then we have to search the $ESR_{typ}$ at 10 kHz what is approx. 6.6 mΩ.

| | |
|---|---|
| So according to: | $P_{dis}$ (mW) = $ESR_{typ}$ (mΩ) x $I_{RMS}^2$ ($A_{RMS}$) |
| we have the following: | $P_{dis}$ (mW) = 6.6 mΩ x 7 $A_{RMS}^2$ = 323.4 mW |
| And as per: | ΔT (°C) = $P_{dis}$ (mW) / G (mW/°C) |
| we have the following: | ΔT (°C) = 323.4 (mW) / 125 (mW/ºC) = 2.59 °C |
| What is below of the | $\Delta T_{max}$ (95 °C) = (Factor)$^2$ x ΔT (85 °C) = (0.88)$^2$ x 15 °C = 11.6 °C |

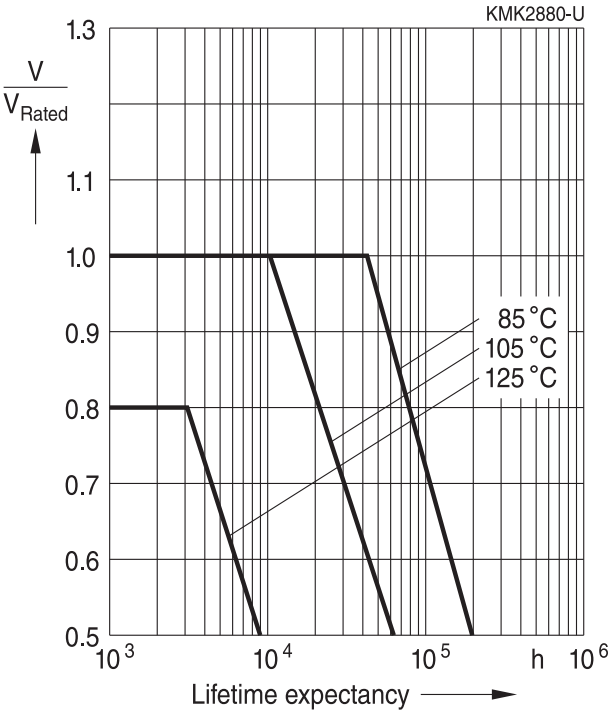
What confirms once again that $I_{RMS}$ (7 $A_{RMS}$ @10 kHz) is below the max specified for such frequency and ambient temperature.

On the other hand, we may confirm previous page that max $I_{RMS}$ @10 kHz@85 °C = 13.2 $A_{RMS}$
And then max $I_{RMS}$ for 95 °C of ambient temperature is defined as follows:
$I_{RMS}$ (95 °C) = Factor x $I_{RMS}$ (85 °C) = 0.88 x 13.2 $A_{RMS}$ = 11.6 $A_{RMS}$
What confirms once again that $I_{RMS}$ (7 $A_{RMS}$@10 kHz) is below the max specified for such frequency and ambient temperature.

**Service life:**

**Lifetime expectancy - typical curve**

(600 V DC/675 V DC/825 V DC/900 V DC/1050 V DC/1200 V DC/B3271# - P/6/3/7/8/9/0/1)




Note: Confidence level of 95%

## Testing and standards

| Test | Reference | Test condition | Performance requirements |
|---|---|---|---|
| Electrical parameters (Routine test) | IEC 61071:2017 | Voltage between terminals, 1.5 $V_R$, during 10 s<br>Insulation Resistance, $R_{ins}$ at 500 V<br>Capacitance, C at 1 kHz (room temperature)<br>Dissipation factor, tan δ at 1/10 kHz (room temperature) | Within specified limits |
| Robustness of terminations (Type test) | IEC 60068-2-21:2021 | Tensile strength (test Ua1)<br>Wire diameter: Tensile force<br>$0.5 < d_1 \leq 0.8$ mm: 10 N<br>$0.8 < d_1 \leq 1.25$ mm: 20 N | Capacitance and tan δ within specified limits |
| Resistance to soldering heat (Type test) | IEC 60068-2-20:2021 test Tb, method 1A | Solder bath temperature at 260 ±5 °C, immersion for 10 ±1 seconds | No visible damage<br>$\lvert\Delta C/C_0\rvert \leq 2\%$<br>$\lvert\Delta \tan \delta\rvert \leq 0.002$ (1 kHz) |
| Rapid change of temperature (Type test) | IEC 61071:2017 | $T_A$ = lower category temperature<br>$T_B$ = upper category temperature<br>Five cycles, duration t = 30 min | No visible damage<br>$\lvert\Delta C/C_0\rvert \leq 2\%$<br>$\lvert\Delta \tan \delta\rvert \leq 0.002$ (1 kHz)<br>$R_{ins} \geq 50\%$ of initial limit |
| Temperature cycling (Type test) | AEC-Q200E | –55 °C ... +85 °C, 1000 cycles | No visible damage<br>$\lvert\Delta C/C_0\rvert \leq 2\%$<br>$\lvert\Delta \tan \delta\rvert \leq 0.002$ (1 kHz)<br>$R_{ins} \geq 50\%$ of initial limit |
| Vibration and shocks (Type test) | IEC 61071:2017 | In accordance with IEC 60068-2-6<br>f = 10 Hz to 55 Hz<br>a = ±0.35 mm<br>Test duration per axis = 10 frequency cycles (3 axes offset from each other by 90°), 1 octave/min.<br>Mounting conditions:<br>The capacitor shall be fixed by the leads and the body must be properly clamped. | No visible damage<br>$\lvert\Delta C/C_0\rvert \leq 0.5\%$ at 1 kHz |
| Self-healing (Type test) | IEC 61071:2017 | 1.5 x UNDC<br>Duration 10 s<br>Number of clearings ≤ 5<br>Clearing = voltage drop of 5%<br>Increase the voltage at 100 V/s till 5 clearings occur<br>with a max. of 2.5 x $V_R$<br>for a duration of 10 s | $\lvert\Delta C/C_0\rvert \leq 0.5\%$<br>tan δ (10 kHz) ≤ 1.2 initial tan δ + 0.0001 |

| Test | Reference | Test condition | Performance requirements |
|---|---|---|---|
| Climatic sequence (Type test) | IEC 60384-16:2019 | Dry heat Tb / 16 h.<br>Damp heat cyclic, 1st cycle<br>+55 °C / 24 h / 95% ... 100% RH<br>Cold Ta / 2 h<br>Damp heat cyclic, 5 cycles<br>+55 °C / 24 h / 95% ... 100% RH | No visible damage<br>$\|\Delta C/C_0\| \leq 3\%$<br>$\|\Delta \tan \delta\| \leq 0.001$<br>$R_{ins} \geq 50\%$ of initial limit |
| Biased humidity test (Type test) | | 60 °C / 95% RH / $V_R$ 1000 hours | No visible damage<br>$\|\Delta C/C_0\| \leq 3\%$<br>$\|\Delta \tan \delta\| \leq 0.005$ (1 kHz)<br>$R_{ins} \geq 50\%$ of initial limit |
| Endurance (Type test) | IEC 61071:2017 | 85 °C / 1.3 $V_R$ / 500 hours<br>and 1000 discharges at 1.4 $I_P$<br>and 85 °C / 1.3 $V_R$ / 500 hours | No visible damage<br>$\|\Delta C/C_0\| \leq 3\%$<br>$\|\Delta \tan \delta\| \leq 0.005$ (1 kHz)<br>$R_{ins} \geq 50\%$ of initial limit |

## Soldering

### Solderability of leads

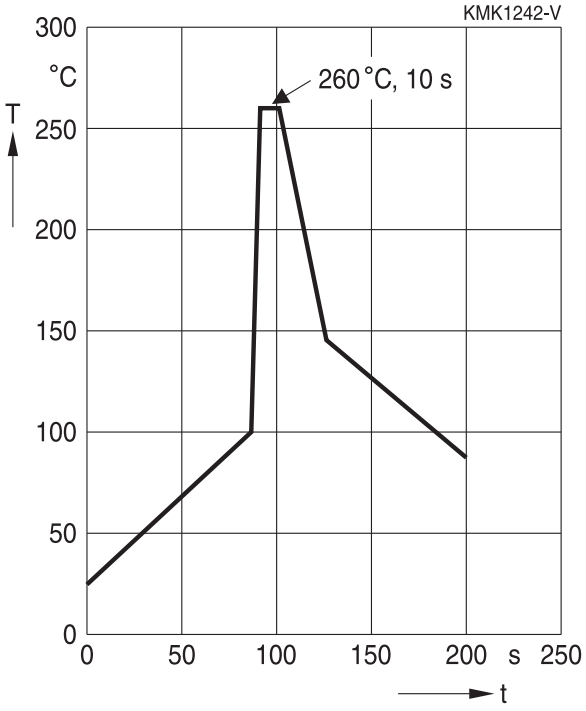
The solderability of terminal leads is tested to IEC 60068-2-20:2008, test Ta, method 1.
Before a solderability test is carried out, terminals are subjected to accelerated ageing (to IEC 60068-2-2, test Ba: 4 h exposure to dry heat at 155 °C). Since the ageing temperature is far higher than the upper category temperature of the capacitors, the terminal wires should be cut off from the capacitor before the ageing procedure to prevent the solderability being impaired by the products of any capacitor decomposition that might occur.

| | |
|---|---|
| Solder bath temperature | 245 ±5 °C |
| Soldering time | 3.0 ±0.3 s |
| Immersion depth | 2.0 +0/–0.5 mm from capacitor body or seating plane |
| Evaluation criteria:<br>Visual inspection | <br>Wetting of wire surface by new solder ≥ 95%,<br>free-flowing solder |

### Resistance to soldering heat

Resistance to soldering heat is tested to IEC 60068-2-20, test Tb, method 1.
Conditions:

| Series | | Solder bath temperature | Soldering time |
|---|---|---|---|
| MKT | boxed (except 2.5 x 6.5 x 7.2 mm)<br>coated<br>uncoated (lead spacing > 10 mm) | 260 ± 5 °C | 10 ± 1 s |
| MFP<br>MKP | <br>(lead spacing > 7.5 mm) | | |
| MKT | boxed (case 2.5 x 6.5 x 7.2 mm) | | 5 ± 1 s |
| MKP<br>MKT | (lead spacing ≤ 7.5 mm)<br>uncoated (lead spacing ≤ 10 mm)<br>insulated (B32559) | | < 4 s recommended soldering profile for MKT uncoated (lead spacing ≤ 10 mm) and insulated (B32559) |




| | |
|---|---|
| Immersion depth | 2.0 +0/–0.5 mm from capacitor body or seating plane |
| Shield | Heat-absorbing board, (1.5 ± 0.5) mm thick, between capacitor body and liquid solder |
| Evaluation criteria: | |
| Visual inspection | No visible damage |
| $\Delta C/C_0$ | 2% for MKT/MKP/MFP<br>5% for EMI suppression capacitors |
| tan $\delta$ | As specified in sectional specification |

**General notes on soldering**

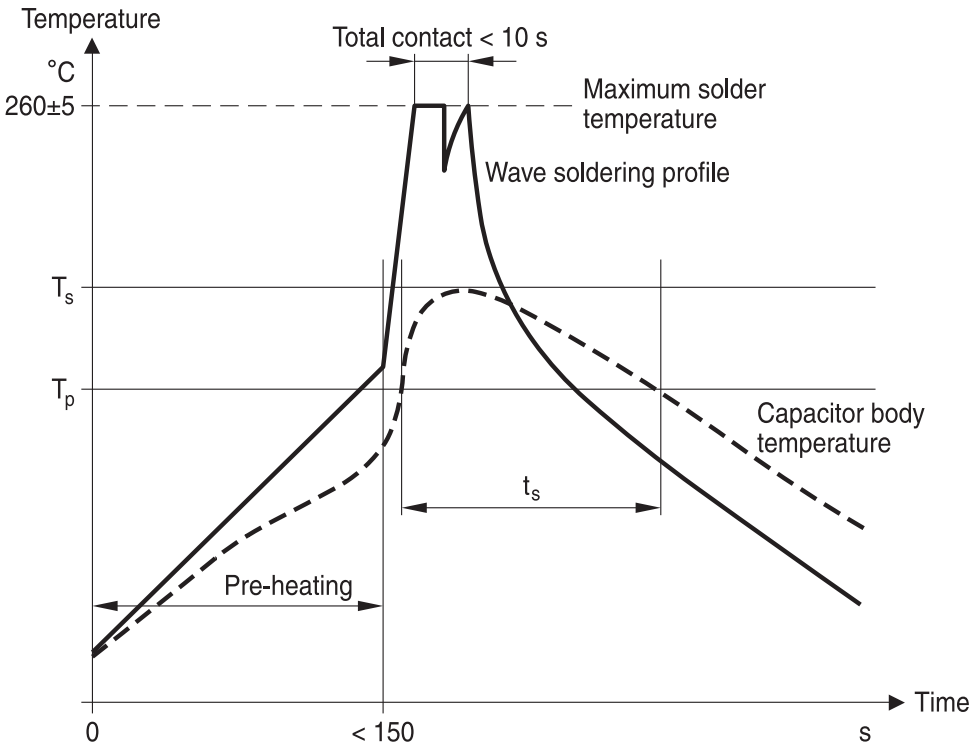
Permissible heat exposure loads on film capacitors are primarily characterized by the upper category temperature $T_{max}$. Long exposure to temperatures above this type-related temperature limit can lead to changes in the plastic dielectric and thus change irreversibly a capacitor's electrical characteristics. For short exposures (as in practical soldering processes) the heat load (and thus the possible effects on a capacitor) will also depend on other factors like:

- Pre-heating temperature and time
- Forced cooling immediately after soldering
- Terminal characteristics:
  diameter, length, thermal resistance, special configurations (e.g. crimping)
- Height of capacitor above solder bath
- Shadowing by neighboring components
- Additional heating due to heat dissipation by neighboring components
- Use of solder-resist coatings

The overheating associated with some of these factors can usually be reduced by suitable countermeasures. For example, if a pre-heating step cannot be avoided, an additional or reinforced cooling process may possibly have to be included.

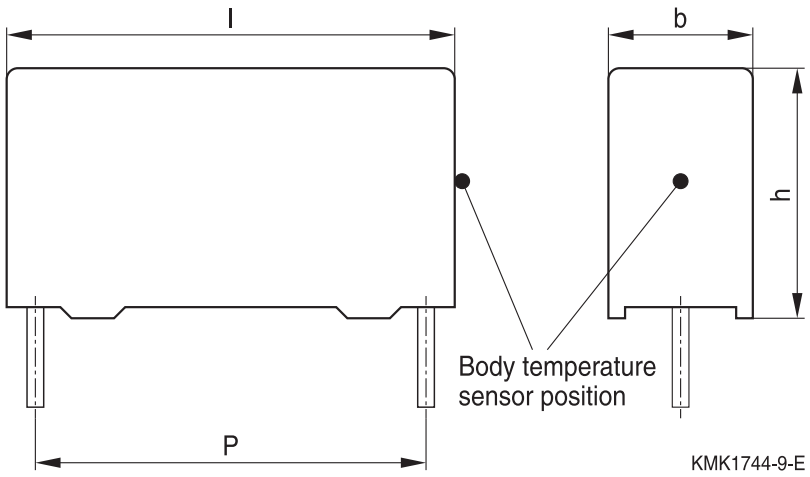
### TDK Recommendations

As a reference, the recommended wave soldering profile for our film capacitors is as follows:




$T_s$: Capacitor body maximum temperature at wave soldering
$T_p$: Capacitor body maximum temperature at pre-heating

KMK1745-A-E




KMK1744-9-E

Body temperature should follow the description below:

- MKP capacitor
  During pre-heating: $T_p \leq 110$ °C
  During soldering: $T_s \leq 120$ °C, $t_s \leq 45$ s
- MKT capacitor
  During pre-heating: $T_p \leq 125$ °C
  During soldering: $T_s \leq 160$ °C, $t_s \leq 45$ s

When SMD components are used together with leaded ones, the film capacitors should not pass into the SMD adhesive curing oven. The leaded components should be assembled after the SMD curing step.
Leaded film capacitors are not suitable for reflow soldering.
In order to ensure proper conditions for manual or selective soldering, the body temperature of the capacitor ($T_s$) must be ≤120 °C.
One recommended condition for manual soldering is that the tip of the soldering iron should be <360 °C and the soldering contact time should be no longer than 3 seconds.
For uncoated MKT capacitors with lead spacings ≤10 mm (B32560/B32561) the following measures are recommended:

- pre-heating to not more than 110 °C in the preheater phase
- rapid cooling after soldering

Please refer to our Film Capacitors Data Book in case more details are needed.

### Cleaning

To determine whether the following solvents, often used to remove flux residues and other substances, are suitable for the capacitors described, refer to the table below:

| Type | Ethanol, isopropanol, n-propanol | n-propanol-water mixtures, water with surface tension-reducing tensides (neutral) |
|---|---|---|
| MKT (uncoated) | Suitable | Unsuitable |
| MKT, MKP, MFP (coated/boxed) | | Suitable |

Even when suitable solvents are used, a reversible change of the electrical characteristics may occur in uncoated capacitors immediately after they are washed. Thus it is always recommended to dry the components (e.g. 4 h at 70 °C) before they are subjected to subsequent electrical testing.
**Caution:** Consult us first if you wish to use new solvents!

### Embedding of capacitors in finished assemblies

In many applications, finished circuit assemblies are embedded in plastic resins. In this case, both chemical and thermal influences of the embedding ("potting") and curing processes must be taken into account.
Our experience has shown that the following potting materials can be recommended: non-flexible epoxy resins with acid-anhydride hardeners; chemically inert, non-conducting fillers; maximum curing temperature of 100 °C.
**Caution:** Consult us first if you wish to embed uncoated types!

## Marking

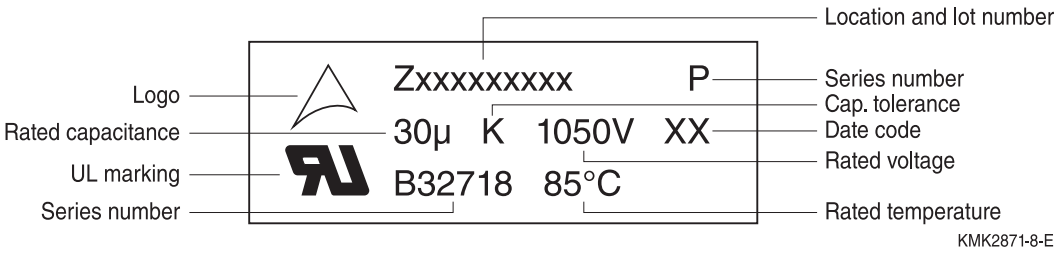
### Capacitor markings

Depending on the capacitor size, the markings are positioned either on the side and/or the top of the component. The coded forms specified in IEC 60062:2004 are used to indicate the rated capacitance, capacitance tolerance and date of manufacture.

The lot number (production batch number) ensures unique identification of a particular capacitor and allows, together with the date of manufacture, exact assignment to the process data of the entire production run (traceability).

If the capacitor is not wide enough for the entire marking, the information in the marking will be split between the top and side. In this case, the following partial information will be found on the top:

### Marking examples (on top)




### Codes for rated capacitance

| Rated capacitance | To IEC 60062 | Short code |
|---|---|---|
| 100 pF | 100p | n1 |
| 150 pF | 150p | n15 |
| 1.0 nF | 1n0 | 1n |
| 1.5 nF | 1n5 | |
| 10 nF | 10n | |
| 100 nF | 100n | µ1 |
| 150 nF | 150n | µ15 |
| 1.0 µF | 1µ0 | 1µ |
| 1.5 µF | 1µ5 | |
| 10 µF | 10µ | |
| 15 µF | 15µ | |

### Codes for capacitance tolerance

| Capacitance tolerance | Code letter | Remark |
|---|---|---|
| | A | Capacitance tolerances for which no code letter is defined can be indicated by an A.<br>The meaning of code A must then be mutually specified in other documentation. |
| ±2.5% | H | |
| ±5% | J | |
| ±10% | K | |
| ±20% | M | |

### Codes for date of manufacture (to IEC 60062:2016)

| Code for year | | | | | Code for month | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Code letter | | Year | Code letter | Month | Code numeral | | Month | Code numeral/letter |
| 2018 | K | | 2024 | S | January | 1 | | July | 7 |
| 2019 | L | | 2025 | T | February | 2 | | August | 8 |
| 2020 | M | | 2026 | U | March | 3 | | September | 9 |
| 2021 | N | | 2027 | V | April | 4 | | October | O |
| 2022 | P | | 2028 | W | May | 5 | | November | N |
| 2023 | R | | 2029 | X | June | 6 | | December | D |

E.g.: R5 2023 May

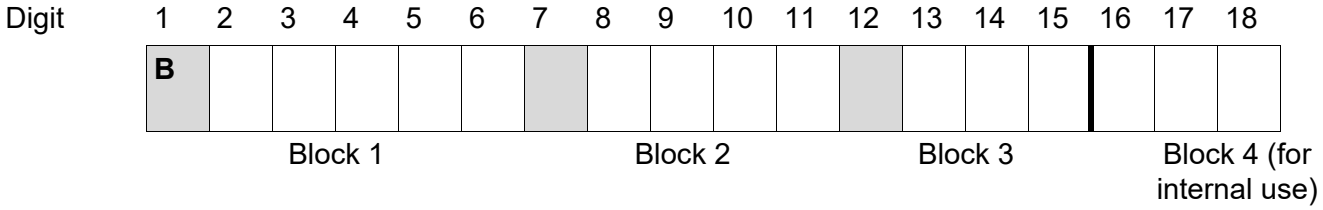
### Marking types

The capacitors may have either an ink-jet marking or a laser marking. The main advantage of laser marking is that it cannot be removed by solvents, which ensures the reliable identification of the capacitor. Moreover, because the laser marking process reduces the amount of chemicals used, it is an environmentally friendly marking solution.

### Ordering code system

A component and the packing in which it is to be delivered are defined by the ordering code, which has 15 digits (plus 3 additional digits for internal use). For all capacitors the ordering codes are explicitly stated (together with the corresponding tolerance and/or packing variants) in the data sheets.
Should there be any doubt about the coding system, however, then it is better to order the capacitor using a plain text description (i.e. without a code).

### Basic structure of the ordering code:




| Digit | Meaning |
|---|---|
| 1 | B = Passive components |
| 2,3 | 32 = Metallized film capacitors, EMI suppression capacitors<br>81 = EMI suppression capacitors |
| 4 ... 6 | Type (block 1 is termed the "type number") |
| 7 | Revision status |
| 8 | Rated DC voltage, coded (not for EMI suppression capacitors) |
| 9 ... 11 | Rated capacitance (coding method for value in pF)<br>Examples:<br>Digit 9 10 11<br>1 5 4 K = 15 • $10^4$ pF = 150 nF<br>B 3 2 6 5 2 A 3 |
| 12 | Code letter for capacitance tolerance |
| 13 ... 15 | Codes for lead and taping parameters (refer to respective data sheet) |
| 16 ... 18 | Internal use |

### Cautions and warnings

- Do not exceed the upper category temperature (UCT).
- Do not apply any mechanical stress to the capacitor terminals.
- Avoid any compressive, tensile or flexural stress.
- Do not move the capacitor after it has been soldered to the PC board.
- Do not pick up the PC board by the soldered capacitor.
- Do not place the capacitor on a PC board whose PTH hole spacing differs from the specified lead spacing.
- Do not exceed the specified time or temperature limits during soldering.
- Avoid external energy inputs, such as fire or electricity.
- Avoid overload of the capacitors.
- Consult us if application is with severe temperature and humidity condition.
- There are no serviceable or repairable parts inside the capacitor. Opening the capacitor or any attempts to open or repair the capacitor will void the warranty and liability of TDK Electronics.
- Please note that the standards referred to in this publication may have been revised in the meantime.

The table below summarizes the safety instructions that must always be observed. A detailed description can be found in the relevant sections of the chapters "General technical information" and "Mounting guidelines".

| Topic | Safety information | Reference chapter "General technical information" |
|---|---|---|
| Storage conditions | Make sure that capacitors are stored within the specified range of time, temperature and humidity conditions. | 4.5 "Storage conditions" |
| Flammability | Avoid external energy, such as fire or electricity (passive flammability), avoid overload of the capacitors (active flammability) and consider the flammability of materials. | 5.3 "Flammability" |
| Resistance to vibration | Do not exceed the tested ability to withstand vibration.<br>The capacitors are tested to IEC 60068-2-6:2007.<br>TDK Electronics offers film capacitors specially designed for operation under more severe vibration regimes such as those found in automotive applications. Consult our catalog "Film Capacitors for Automotive Electronics". | 5.2 "Resistance to vibration" |
| Soldering | Do not exceed the specified time or temperature limits during soldering. | 1 "Soldering" |
| Cleaning | Use only suitable solvents for cleaning capacitors. | 2 "Cleaning" |
| Embedding of capacitors in finished assemblies | When embedding finished circuit assemblies in plastic resins, chemical and thermal influences must be taken into account.<br>Caution: Consult us first, if you also wish to embed other uncoated component types! | 3 "Embedding of capacitors in finished assemblies" |

### Display of ordering codes for TDK Electronics products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.
Detailed information can be found on the Internet under www.tdk-electronics.tdk.com/orderingcodes.

### Correlation of data sheet values and modelling tool outputs

Data sheet values and results of design tools may deviate as they have not been derived in the same context.
While data sheets show individual parameter statements without considering a possible dependency to other parameters. Tools model  a complete given scenario as input and processed inside the tool.
Furthermore as we constantly strive to improve our models, the results of tools can change over time and be a non-binding indication only.

## Symbols and terms

| Symbol | English | German |
|---|---|---|
| $\alpha$ | Heat transfer coefficient | Wärmeübergangszahl |
| $\alpha_C$ | Temperature coefficient of capacitance | Temperaturkoeffizient der Kapazität |
| A | Capacitor surface area | Kondensatoroberfläche |
| $\beta_C$ | Humidity coefficient of capacitance | Feuchtekoeffizient der Kapazität |
| C | Capacitance | Kapazität |
| $C_R$ | Rated capacitance | Nennkapazität |
| $\Delta C$ | Absolute capacitance change | Absolute Kapazitätsänderung |
| $\Delta C/C$ | Relative capacitance change (relative deviation of actual value) | Relative Kapazitätsänderung (relative Abweichung vom Ist-Wert) |
| $\Delta C/C_R$ | Capacitance tolerance (relative deviation from rated capacitance) | Kapazitätstoleranz (relative Abweichung vom Nennwert) |
| dt | Time differential | Differentielle Zeit |
| $\Delta t$ | Time interval | Zeitintervall |
| $\Delta T$ | Absolute temperature change (self-heating) | Absolute Temperaturänderung (Selbsterwärmung) |
| $\Delta \tan \delta$ | Absolute change of dissipation factor | Absolute Änderung des Verlustfaktors |
| $\Delta V$ | Absolute voltage change | Absolute Spannungsänderung |
| dV/dt | Time differential of voltage function (rate of voltage rise) | Differentielle Spannungsänderung (Spannungsflankensteilheit) |
| $\Delta V/\Delta t$ | Voltage change per time interval | Spannungsänderung pro Zeitintervall |
| E | Activation energy for diffusion | Aktivierungsenergie zur Diffusion |
| ESL | Self-inductance | Eigeninduktivität |
| ESR | Equivalent series resistance | Ersatz-Serienwiderstand |
| f | Frequency | Frequenz |
| $f_1$ | Frequency limit for reducing permissible AC voltage due to thermal limits | Grenzfrequenz für thermisch bedingte Reduzierung der zulässigen Wechselspannung |
| $f_2$ | Frequency limit for reducing permissible AC voltage due to current limit | Grenzfrequenz für strombedingte Reduzierung der zulässigen Wechselspannung |
| $f_r$ | Resonant frequency | Resonanzfrequenz |
| $F_D$ | Thermal acceleration factor for diffusion | Therm. Beschleunigungsfaktor zur Diffusion |
| $F_T$ | Derating factor | Deratingfaktor |
| i | Current (peak) | Stromspitze |
| $I_C$ | Category current (max. continuous current) | Kategoriestrom (max. Dauerstrom) |
| $I_{RMS}$ | (Sinusoidal) alternating current, root-mean-square value | (Sinusförmiger) Wechselstrom |
| $i_z$ | Capacitance drift | Inkonstanz der Kapazität |
| $k_0$ | Pulse characteristic | Impulskennwert |
| $L_S$ | Series inductance | Serieninduktivität |
| $\lambda$ | Failure rate | Ausfallrate |

| Symbol | English | German |
|---|---|---|
| $\lambda_0$ | Constant failure rate during useful service life | Konstante Ausfallrate in der Nutzungsphase |
| $\lambda_{test}$ | Failure rate, determined by tests | Experimentell ermittelte Ausfallrate |
| $P_{diss}$ | Dissipated power | Abgegebene Verlustleistung |
| $P_{gen}$ | Generated power | Erzeugte Verlustleistung |
| Q | Heat energy | Wärmeenergie |
| $\rho$ | Density of water vapor in air | Dichte von Wasserdampf in Luft |
| R | Universal molar constant for gases | Allg. Molarkonstante für Gas |
| R | Ohmic resistance of discharge circuit | Ohmscher Widerstand des Entladekreises |
| $R_i$ | Internal resistance | Innenwiderstand |
| $R_{ins}$ | Insulation resistance | Isolationswiderstand |
| $R_P$ | Parallel resistance | Parallelwiderstand |
| $R_S$ | Series resistance | Serienwiderstand |
| S | severity (humidity test) | Schärfegrad (Feuchtetest) |
| t | Time | Zeit |
| T | Temperature | Temperatur |
| $\tau$ | Time constant | Zeitkonstante |
| tan $\delta$ | Dissipation factor | Verlustfaktor |
| tan $\delta_D$ | Dielectric component of dissipation factor | Dielektrischer Anteil des Verlustfaktors |
| tan $\delta_P$ | Parallel component of dissipation factor | Parallelanteil des Verlfustfaktors |
| tan $\delta_S$ | Series component of dissipation factor | Serienanteil des Verlustfaktors |
| $T_A$ | Temperature of the air surrounding the component | Temperatur der Luft, die das Bauteil umgibt |
| $T_{max}$ | Upper category temperature | Obere Kategorietemperatur |
| $T_{min}$ | Lower category temperature | Untere Kategorietemperatur |
| $t_{OL}$ | Operating life at operating temperature and voltage | Betriebszeit bei Betriebstemperatur und -spannung |
| $T_{op}$ | Operating temperature, $T_A + \Delta T$ | Beriebstemperatur, $T_A + \Delta T$ |
| $T_R$ | Rated temperature | Nenntemperatur |
| $T_{ref}$ | Reference temperature | Referenztemperatur |
| $t_{SL}$ | Reference service life | Referenz-Lebensdauer |
| $V_{AC}$ | AC voltage | Wechselspannung |
| $V_C$ | Category voltage | Kategoriespannung |
| $V_{C,RMS}$ | Category AC voltage | (Sinusförmige) Kategorie-Wechselspannung |
| $V_{CD}$ | Corona-discharge onset voltage | Teilentlade-Einsatzspannung |
| $V_{ch}$ | Charging voltage | Ladespannung |
| $V_{DC}$ | DC voltage | Gleichspannung |
| $V_{FB}$ | Fly-back capacitor voltage | Spannung (Flyback) |

| Symbol | English | German |
|---|---|---|
| $V_i$ | Input voltage | Eingangsspannung |
| $V_o$ | Output voltage | Ausgangssspannung |
| $V_{op}$ | Operating voltage | Betriebsspannung |
| $V_p$ | Peak pulse voltage | Impuls-Spitzenspannung |
| $V_{pp}$ | Peak-to-peak voltage Impedance | Spannungshub |
| $V_R$ | Rated voltage | Nennspannung |
| $\hat{V}_R$ | Amplitude of rated AC voltage | Amplitude der Nenn-Wechselspannung |
| $V_{RMS}$ | (Sinusoidal) alternating voltage, root-mean-square value | (Sinusförmige) Wechselspannung |
| $V_{SC}$ | S-correction voltage | Spannung bei Anwendung "S-correction" |
| $V_{sn}$ | Snubber capacitor voltage | Spannung bei Anwendung "Beschaltung" |
| Z | Impedance | Scheinwiderstand |
| e | Lead spacing | Rastermaß |

## Important notes

The following applies to all products named in this publication:

1 Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.

2 We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3 **The warnings, cautions and product-specific notes must be observed**.

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8 The trade names EPCOS, CarXield, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, FilterCap, FormFit, InsuGate, LeaXield, MediPlas, MiniBlue, MiniCell, MKD, MKK, ModCap, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PiezoBrush, PlasmaBrush, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SurfIND, ThermoFuse, WindCap, XieldCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.tdk-electronics.tdk.com/trademarks.

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