

**MKP stacked-film capacitors
Smallest possible dimensions**
Construction

- Dielectric: polypropylene
- Stacked-film technology
- Plastic case (UL 94 V-0)
- Epoxy resin sealing

Features

- Very high pulse strength
- Very good self-healing properties
- Smallest possible dimensions
- High contact reliability

Typical applications

- Energy-saving lamps
- TV S-correction
- High pulse load applications
- AC applications

Terminals

- Parallel wire leads, tinned
- Also available with $(3,2 \pm 0,3)$ mm lead length

Marking

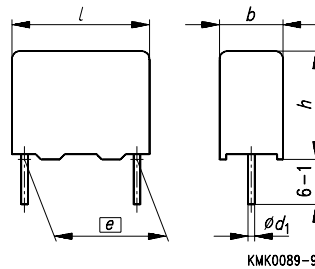
Manufacturer's logo,
lot number, style and type (P621) for lead spacing 10 mm,
style (MKP) for lead spacing 7,5 mm,
rated capacitance (coded),
capacitance tolerance (code letter),
rated dc voltage,
date of manufacture (coded)

Delivery mode

Bulk (untaped)

Taped (Ammo pack or reel)

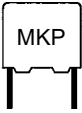
For notes on taping, [refer to chapter "Taping and packing", page 274.](#)



Dimensions in mm

| Lead spacing | Diameter d_1 | Type |
|--------------|------------------------|----------|
| $e \pm 0,4$ | | |
| 7,5 | 0,5 | B 32 620 |
| 10 | 0,5 ¹⁾ /0,6 | B 32 621 |

1) 0,5 mm for capacitor width $b = 4$ mm

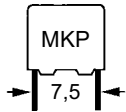


B 32 620

B 32 621

Overview of available types

| | | | | | | | | | | |
|--------------|---------------------|--|--|--|--|---------------------|--|--|--|--|
| Lead spacing | 7,5 mm | | | | | 10 mm | | | | |
| Type | B 32 620 | | | | | B 32 621 | | | | |
| Page | 119 | | | | | 121 | | | | |
| 0,47 nF | | | | | | | | | | |
| 0,68 nF | | | | | | | | | | |
| 1,0 nF | | | | | | | | | | |
| 1,5 nF | | | | | | | | | | |
| 2,2 nF | | | | | | | | | | |
| 3,3 nF | | | | | | | | | | |
| 4,7 nF | | | | | | | | | | |
| 6,8 nF | | | | | | | | | | |
| 10 nF | | | | | | | | | | |
| 15 nF | | | | | | | | | | |
| 22 nF | | | | | | | | | | |
| 33 nF | | | | | | | | | | |
| 47 nF | | | | | | | | | | |
| 68 nF | | | | | | | | | | |
| 0,10 µF | | | | | | | | | | |
| 0,15 µF | | | | | | | | | | |
| 0,22 µF | | | | | | | | | | |


Ordering codes and packing units, lead spacing 7,5 mm

| V_R (V_{rms} $f \leq 1$ kHz) | C_R | Maximum dimensions $b \times h \times l$ (mm) | Ordering code ¹⁾ | Packing units (pcs) | | |
|---|----------------------|---|-----------------------------|---------------------|------|---------|
| | | | | Ammo pack | Reel | Untaped |
| 160 Vdc (90 Vac) | 22 nF | 3,0 × 8,0 × 10,0 | B32620-A5223-+*** | 2600 | 2400 | 2000 |
| | 33 nF | 4,0 × 8,5 × 10,0 | B32620-A5333-+*** | 2000 | 1800 | 1500 |
| | 47 nF | 4,0 × 8,5 × 10,0 | B32620-A5473-+*** | 2000 | 1800 | 1500 |
| | 68 nF | 5,0 × 10,5 × 10,0 | B32620-A5683-+*** | 1600 | 1400 | 1000 |
| | 0,10 μF | 5,0 × 10,5 × 10,0 | B32620-A5104-+*** | 1600 | 1400 | 1000 |
| | 0,15 μF | 6,0 × 12,0 × 10,3 | B32620-A5154-+*** | 1300 | 1100 | 750 |
| 250 Vdc (140 Vac) | 22 nF | 4,0 × 8,5 × 10,0 | B32620-A3223-+*** | 2000 | 1800 | 1500 |
| | 33 nF | 4,0 × 8,5 × 10,0 | B32620-A3333-+*** | 2000 | 1800 | 1500 |
| | 47 nF | 5,0 × 10,5 × 10,0 | B32620-A3473-+*** | 1600 | 1400 | 1000 |
| | 68 nF | 5,0 × 10,5 × 10,0 | B32620-A3683-+*** | 1600 | 1400 | 1000 |
| | 0,10 μF | 6,0 × 12,0 × 10,3 | B32620-A3104-+*** | 1300 | 1100 | 750 |
| | 400 Vdc (200 Vac) | 6,8 nF | 4,0 × 8,5 × 10,0 | B32620-A4682-+*** | 2000 | 1800 |
| 10 nF | | 4,0 × 8,5 × 10,0 | B32620-A4103-+*** | 2000 | 1800 | 1500 |
| 15 nF | | 5,0 × 10,5 × 10,0 | B32620-A4153-+*** | 1600 | 1400 | 1000 |
| 22 nF | | 5,0 × 10,5 × 10,0 | B32620-A4223-+*** | 1600 | 1400 | 1000 |
| 33 nF | | 6,0 × 12,0 × 10,3 | B32620-A4333-+*** | 1300 | 1100 | 750 |
| 630 Vdc (400 Vac) | | 1,5 nF | 4,0 × 8,5 × 10,0 | B32620-A6152-+*** | 2000 | 1800 |
| | 2,2 nF | 4,0 × 8,5 × 10,0 | B32620-A6222-+*** | 2000 | 1800 | 1500 |
| | 3,3 nF | 4,0 × 8,5 × 10,0 | B32620-A6332-+*** | 2000 | 1800 | 1500 |
| | 4,7 nF | 4,0 × 8,5 × 10,0 | B32620-A6472-+*** | 2000 | 1800 | 1500 |
| | 6,8 nF | 5,0 × 10,5 × 10,0 | B32620-A6682-+*** | 1600 | 1400 | 1000 |
| | 10 nF | 5,0 × 10,5 × 10,0 | B32620-A6103-+*** | 1600 | 1400 | 1000 |
| | 15 nF | 6,0 × 12,0 × 10,3 | B32620-A6153-+*** | 1300 | 1100 | 750 |

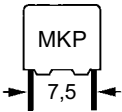
Capacitance tolerance: ±20 % ≐ M, ±10 % ≐ K, ±5 % ≐ J

1) + Code letter for capacitance tolerance

*** Code number for packing: Ammo pack = 289, reel = 189

The ordering code for untaped components ends after the tolerance code letter.

For capacitors with 3,2 mm lead length, append code number "3" to the tolerance code, e.g.: B32620-A5104-K3


B 32 620
Ordering codes and packing units, lead spacing 7,5 mm

| V_R (V_{rms} $f \leq 1$ kHz) | C_R | Maximum dimensions $b \times h \times l$ (mm) | Ordering code ¹⁾ | Packing units (pcs) | | |
|---|--------|---|-----------------------------|---------------------|------|---------|
| | | | | Ammo pack | Reel | Untaped |
| 1000 Vdc (500 Vac) | 1,5 nF | 4,0 × 8,5 × 10,0 | B32620-A152-+*** | 2000 | 1800 | 1500 |
| | 2,2 nF | 4,0 × 8,5 × 10,0 | B32620-A222-+*** | 2000 | 1800 | 1500 |
| | 3,3 nF | 5,0 × 10,5 × 10,0 | B32620-A332-+*** | 1600 | 1400 | 1000 |
| | 4,7 nF | 5,0 × 10,5 × 10,0 | B32620-A472-+*** | 1600 | 1400 | 1000 |
| | 6,8 nF | 6,0 × 12,0 × 10,3 | B32620-A682-+*** | 1300 | 1100 | 750 |
| 1000 Vdc (600 Vac) | 470 pF | 4,0 × 8,5 × 10,0 | B32620-J471-+*** | 2000 | 1800 | 1500 |
| | 680 pF | 5,0 × 10,5 × 10,0 | B32620-J681-+*** | 1600 | 1400 | 1000 |
| | 1,0 nF | 5,0 × 10,5 × 10,0 | B32620-J102-+*** | 1600 | 1400 | 1000 |
| | 1,5 nF | 5,0 × 10,5 × 10,0 | B32620-J152-+*** | 1600 | 1400 | 1000 |
| | 2,2 nF | 5,0 × 10,5 × 10,0 | B32620-J222-+*** | 1600 | 1400 | 1000 |
| | 3,3 nF | 5,0 × 10,5 × 10,0 | B32620-J332-+*** | 1600 | 1400 | 1000 |
| | 4,7 nF | 6,0 × 12,0 × 10,3 | B32620-J472-+*** | 1300 | 1100 | 750 |

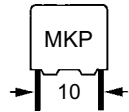
 Capacitance tolerance: $\pm 20\% \hat{=} M, \pm 10\% \hat{=} K, \pm 5\% \hat{=} J$

1) + Code letter for capacitance tolerance

*** Code number for packing: Ammo pack = 289, reel = 189

The ordering code for untaped components ends after the tolerance code letter.

For capacitors with 3,2 mm lead length, append code number "3" to the tolerance code, e.g.: B32620-A152-K3


Ordering codes and packing units, lead spacing 10 mm

| V_R (V_{rms} $f \leq 1$ kHz) | C_R | Maximum dimensions $b \times h \times l$ (mm) | Ordering code ¹⁾ | Packing units (pcs) | | |
|---|----------------------|---|-----------------------------|---------------------|------|---------|
| | | | | Ammo pack | Reel | Untaped |
| 160 Vdc (90 Vac) | 47 nF | 4,0 × 7,0 × 13,0 | B32621-A5473-+*** | 1000 | 1700 | 1000 |
| | 68 nF | 4,0 × 9,0 × 13,0 | B32621-A5683-+*** | 1000 | 1700 | 1000 |
| | 0,10 μ F | 5,0 × 11,0 × 13,0 | B32621-A5104-+*** | 830 | 1300 | 1000 |
| | 0,15 μ F | 5,0 × 11,0 × 13,0 | B32621-A5154-+*** | 830 | 1300 | 1000 |
| | 0,22 μ F | 6,0 × 12,0 × 13,0 | B32621-A5224-+*** | 680 | 1100 | 1000 |
| 250 Vdc (140 Vac) | 2,2 nF | 4,0 × 7,0 × 13,0 | B32621-A3222-+*** | 1000 | 1700 | 1000 |
| | 3,3 nF | 4,0 × 9,0 × 13,0 | B32621-A3332-+*** | 1000 | 1700 | 1000 |
| | 4,7 nF | 4,0 × 9,0 × 13,0 | B32621-A3472-+*** | 1000 | 1700 | 1000 |
| | 6,8 nF | 4,0 × 9,0 × 13,0 | B32621-A3682-+*** | 1000 | 1700 | 1000 |
| | 10 nF | 4,0 × 9,0 × 13,0 | B32621-A3103-+*** | 1000 | 1700 | 1000 |
| | 15 nF | 4,0 × 9,0 × 13,0 | B32621-A3153-+*** | 1000 | 1700 | 1000 |
| | 22 nF | 4,0 × 9,0 × 13,0 | B32621-A3223-+*** | 1000 | 1700 | 1000 |
| | 33 nF | 4,0 × 9,0 × 13,0 | B32621-A3333-+*** | 1000 | 1700 | 1000 |
| | 47 nF | 4,0 × 9,0 × 13,0 | B32621-A3473-+*** | 1000 | 1700 | 1000 |
| | 68 nF | 5,0 × 11,0 × 13,0 | B32621-A3683-+*** | 830 | 1300 | 1000 |
| | 0,10 μ F | 6,0 × 12,0 × 13,0 | B32621-A3104-+*** | 680 | 1100 | 1000 |
| | 400 Vdc (200 Vac) | 10 nF | 4,0 × 9,0 × 13,0 | B32621-A4103-+*** | 1000 | 1700 |
| 15 nF | | 4,0 × 9,0 × 13,0 | B32621-A4153-+*** | 1000 | 1700 | 1000 |
| 22 nF | | 5,0 × 11,0 × 13,0 | B32621-A4223-+*** | 830 | 1300 | 1000 |
| 33 nF | | 5,0 × 11,0 × 13,0 | B32621-A4333-+*** | 830 | 1300 | 1000 |
| 47 nF | | 6,0 × 12,0 × 13,0 | B32621-A4473-+*** | 680 | 1100 | 1000 |
| 630 Vdc (400 Vac) | 2,2 nF | 4,0 × 7,0 × 13,0 | B32621-A6222-+*** | 1000 | 1700 | 1000 |
| | 3,3 nF | 4,0 × 9,0 × 13,0 | B32621-A6332-+*** | 1000 | 1700 | 1000 |
| | 4,7 nF | 4,0 × 9,0 × 13,0 | B32621-A6472-+*** | 1000 | 1700 | 1000 |
| | 6,8 nF | 4,0 × 9,0 × 13,0 | B32621-A6682-+*** | 1000 | 1700 | 1000 |
| | 10 nF | 4,0 × 9,0 × 13,0 | B32621-A6103-+*** | 1000 | 1700 | 1000 |
| | 15 nF | 5,0 × 11,0 × 13,0 | B32621-A6153-+*** | 830 | 1300 | 1000 |
| | 22 nF | 6,0 × 12,0 × 13,0 | B32621-A6223-+*** | 680 | 1100 | 1000 |
| | 33 nF | 6,0 × 12,0 × 13,0 | B32621-A6333-+*** | 680 | 1100 | 1000 |
| 1000 Vdc (500 Vac) | 2,2 nF | 4,0 × 7,0 × 13,0 | B32621-A222-+*** | 1000 | 1700 | 1000 |
| | 3,3 nF | 4,0 × 9,0 × 13,0 | B32621-A332-+*** | 1000 | 1700 | 1000 |
| | 4,7 nF | 4,0 × 9,0 × 13,0 | B32621-A472-+*** | 1000 | 1700 | 1000 |
| | 6,8 nF | 5,0 × 11,0 × 13,0 | B32621-A682-+*** | 830 | 1300 | 1000 |
| | 10 nF | 6,0 × 12,0 × 13,0 | B32621-A103-+*** | 680 | 1100 | 1000 |

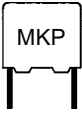
 Capacitance tolerance: $\pm 20\% \hat{=}$ M, $\pm 10\% \hat{=}$ K, $\pm 5\% \hat{=}$ J

1) + Code letter for capacitance tolerance

*** Code number for packing: Ammo pack = 289, reel = 189

The ordering code for untaped components ends after the tolerance code letter.

For capacitors with 3,2 mm lead length, append code number "3" to the tolerance code, e.g.: B32621-A5473-K3



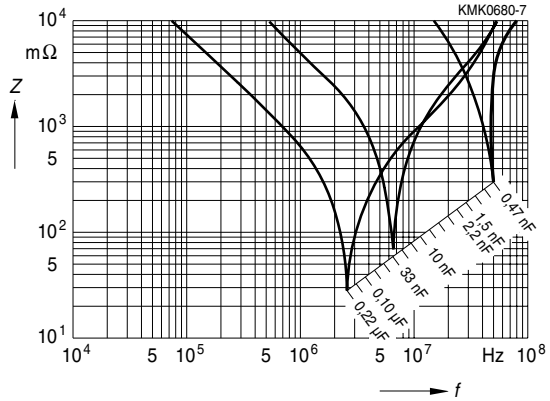
B 32 620

B 32 621

Technical data

| | | | |
|---|---|---|-----------------------------------|
| Climatic category in accordance with IEC 60068-1 | 55/100/56 | | |
| Lower category temperature T_{\min} | – 55 °C | | |
| Upper category temperature T_{\max} | + 100 °C | | |
| Damp heat test | 56 days/40 °C/93 % relative humidity | | |
| Limit values after damp heat test | Capacitance change $ \Delta C/C $ | ≤ 3 % | |
| | Dissipation factor change $\Delta \tan \delta$ | ≤ 0,5 · 10 ⁻³ (at 1 kHz) ≤ 1,0 · 10 ⁻³ (at 10 kHz) | |
| | Insulation resistance R_{is} | ≥ 50 % of minimum as-delivered values | |
| Reliability: | | | |
| Reference conditions | 0,5 · V_R ; 40 °C | | |
| Failure rate | 1 · 10 ⁻⁹ /h = 1 fit | | |
| | For a conversion table for other operating conditions and temperatures, refer to chapter "Quality assurance", page 327. | | |
| Service life | 200 000 h | | |
| Failure criteria: | | | |
| Total failure | Short circuit or open circuit | | |
| Failure due to variation of parameters | Capacitance change $ \Delta C/C $ | > ±10 % | |
| | Dissipation factor $\tan \delta$ | 4 · upper limit values | |
| | Insulation resistance R_{is} | < 1500 MΩ | |
| DC test voltage | 1,6 · V_R , 2 s | | |
| Category voltage V_C | $T \leq 85$ °C: $V_C = 1,0 \cdot V_R$ or $1,0 \cdot V_{rms}$ | | |
| Operation with dc voltage or ac voltage V_{rms} up to 1 kHz | $T = 100$ °C: $V_C = 0,7 \cdot V_R$ or $0,7 \cdot V_{rms}$ | | |
| Dissipation factor $\tan \delta$ (in 10 ⁻³) at 20 °C (upper limit values) | | $C_R \leq 0,1 \mu F$ | $0,1 \mu F < C_R \leq 0,22 \mu F$ |
| | at 1 kHz | – | 1,0 |
| | 10 kHz | – | 1,5 |
| | 100 kHz | 4,0 | – |
| Insulation resistance R_{is} or time constant $\tau = C_R \cdot R_{is}$ at 20 °C, rel. humidity ≤ 65 % (minimum as-delivered values) | 100 GΩ | | |

Impedance Z
versus
frequency f
(typical values)



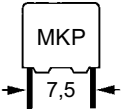
Pulse handling capability

Maximum permissible voltage change per unit of time for non-sinusoidal voltages (pulse, sawtooth)

| V_R | Max. rate of voltage rise V_{pp}/τ in $V/\mu s$ (for $V_{pp} = V_R$) | |
|--------------------|--|-------|
| | Lead spacing | |
| | 7,5 mm | 10 mm |
| 160 Vdc | 750 | 600 |
| 250 Vdc | 1200 | 900 |
| 400 Vdc | 1500 | 1050 |
| 630 Vdc | 2700 | 1800 |
| 1000 Vdc (500 Vac) | 3200 | 2400 |
| 1000 Vdc (600 Vac) | 4000 | – |

For $V_{pp} < V_R$, the permissible voltage rise rate value V_{pp}/τ may be multiplied by the factor V_R/V_{pp} . Also refer to the calculation example in chapter "General technical information", page 302.

| V_R | Pulse characteristic k_0 in $V^2/\mu s$ (for $V_{pp} \leq V_R$) | |
|--------------------|--|-----------|
| | Lead spacing | |
| | 7,5 mm | 10 mm |
| 160 Vdc | 240 000 | 190 000 |
| 250 Vdc | 600 000 | 450 000 |
| 400 Vdc | 1 200 000 | 840 000 |
| 630 Vdc | 3 400 000 | 2 250 000 |
| 1000 Vdc (500 Vac) | 6 400 000 | 4 800 000 |
| 1000 Vdc (600 Vac) | 8 000 000 | – |

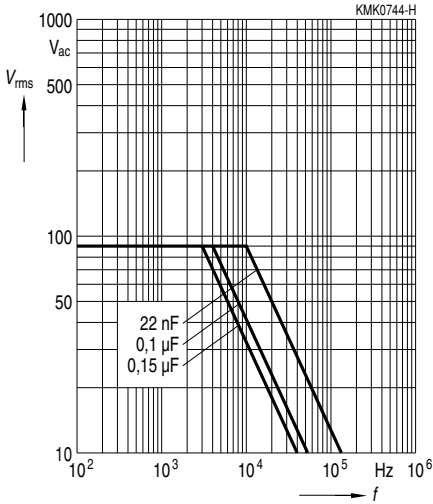


B 32 620

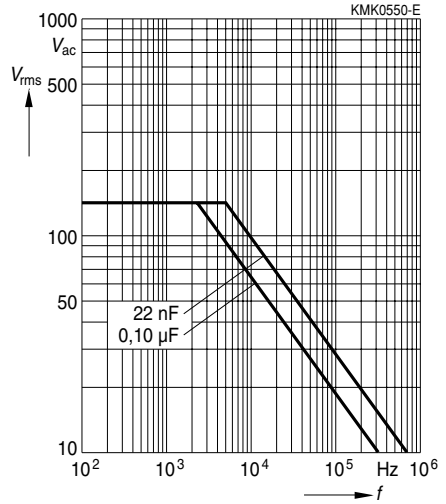
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 7,5 mm

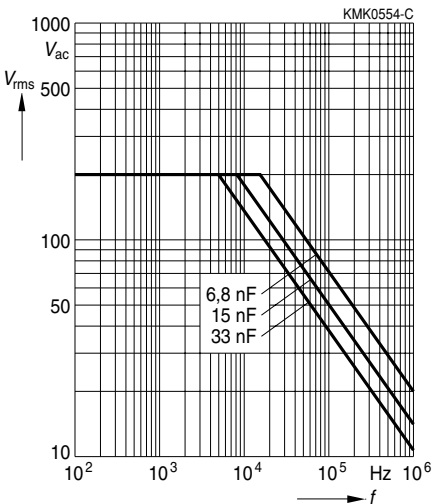
160 Vdc / 90 Vac



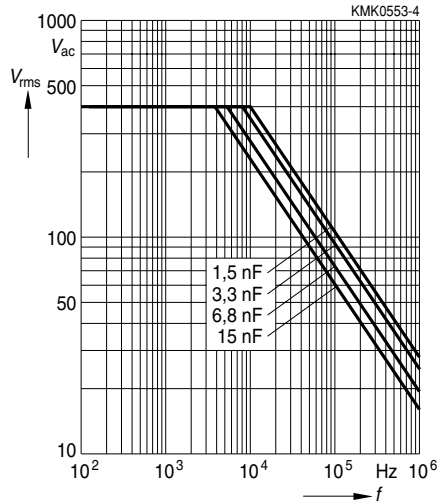
250 Vdc / 140 Vac

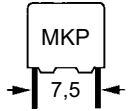


400 Vdc / 200 Vac



630 Vdc / 400 Vac

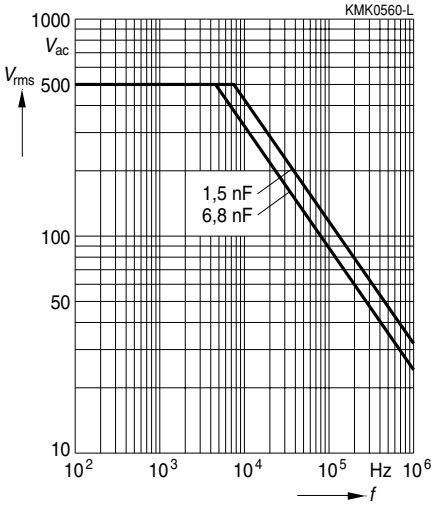




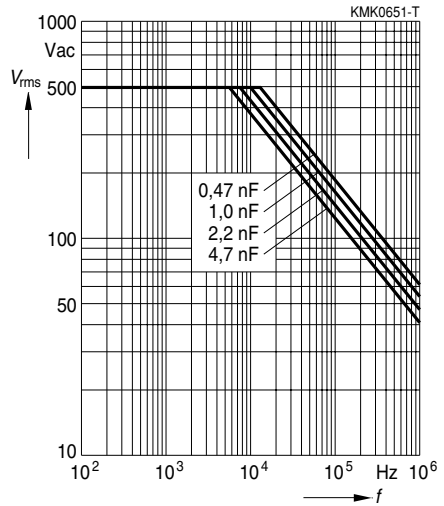
Permissible ac voltage V_{rms} versus frequency f

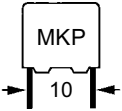
Lead spacing 7,5 mm

1000 Vdc/ 500 Vac



1000 Vdc/ 600 Vac



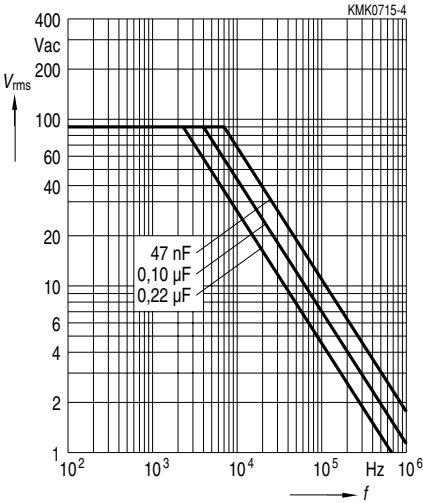


B 32 621

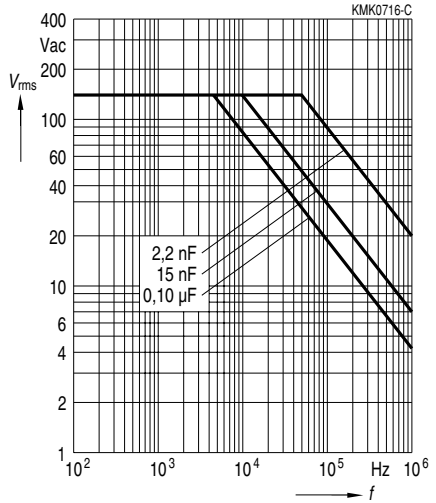
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 10 mm

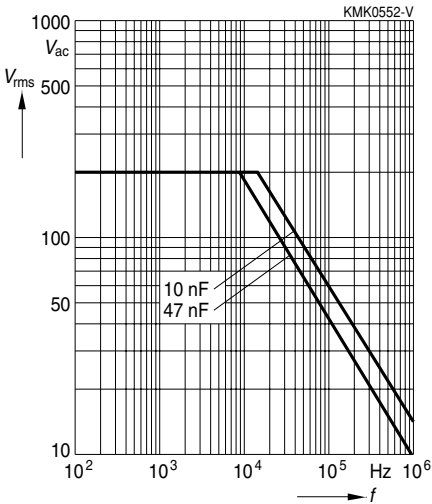
160 Vdc / 90 Vac



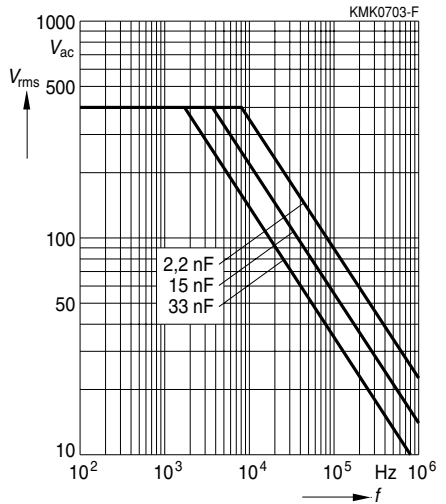
250 Vdc / 140 Vac

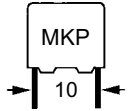


400 Vdc / 200 Vac



630 Vdc / 400 Vac

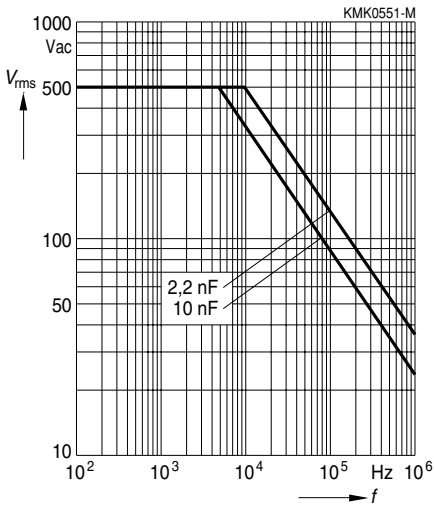


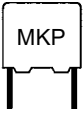


Permissible ac voltage V_{rms} versus frequency f

Lead spacing 10 mm

1000 Vdc / 500 Vac

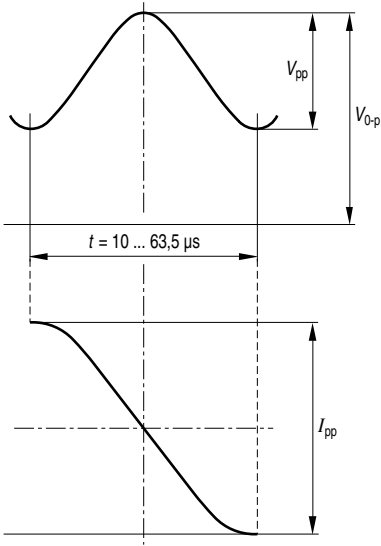




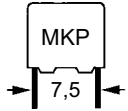
B 32 620

B 32 621

Sinus-wave application, lighting
Permissible voltage and current / waveform



KMK0721-D

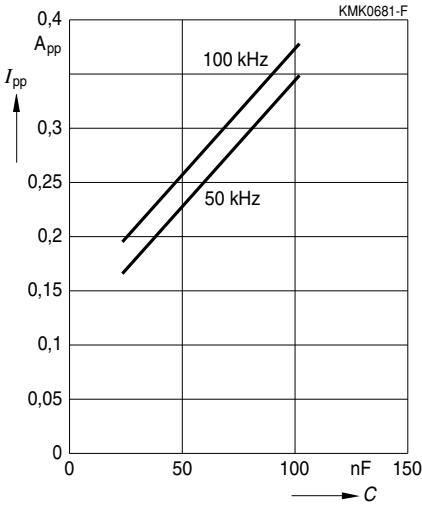


Sinus-wave application, lighting

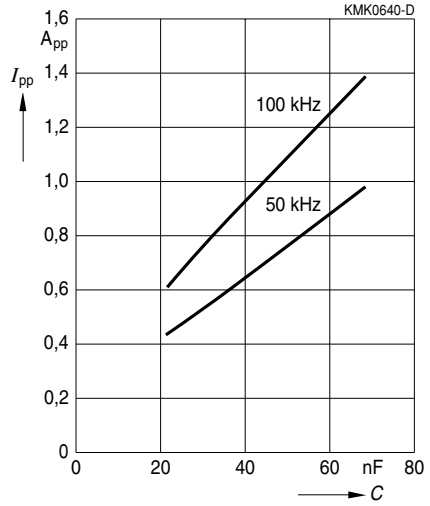
Permissible current I_{pp} versus rated capacitance C_R

Lead spacing 7,5 mm

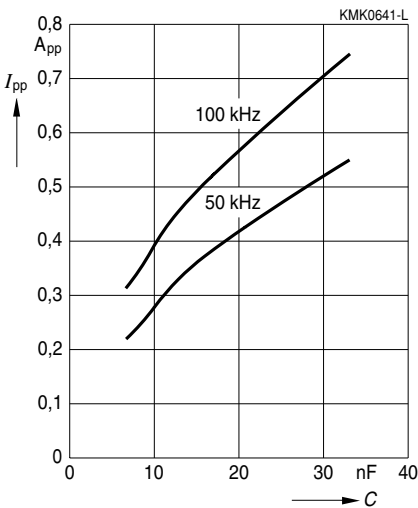
160 Vdc/90 Vac



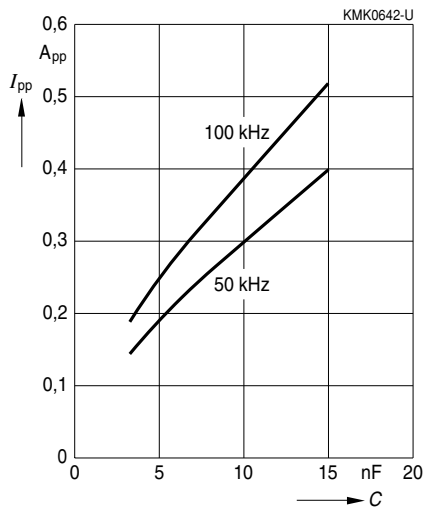
250 Vdc/140 Vac

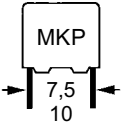


400 Vdc/200 Vac



630 Vdc/400 Vac





B 32 620

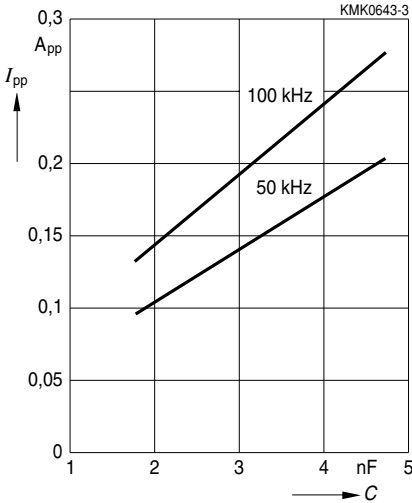
B 32 621

Sinus-wave application, lighting

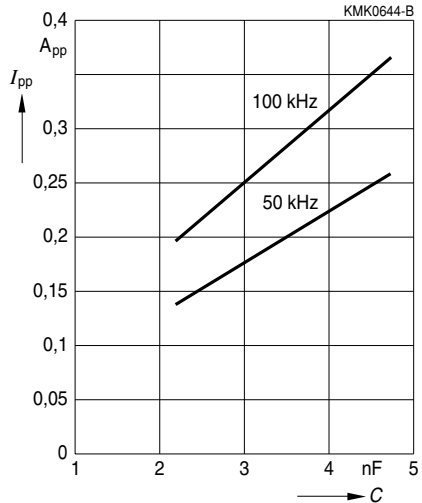
Permissible current I_{pp} versus rated capacitance C_R

Lead spacing 7,5 mm

1000 Vdc/500 Vac

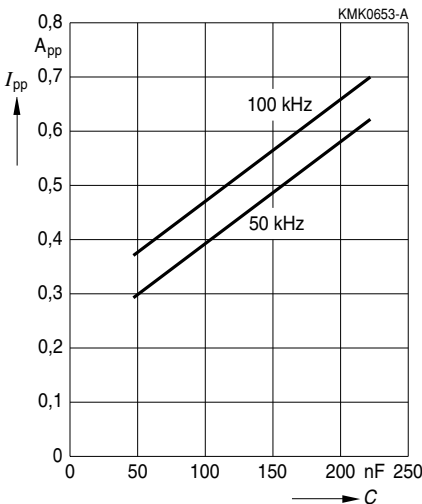


1000 Vdc/600 Vac

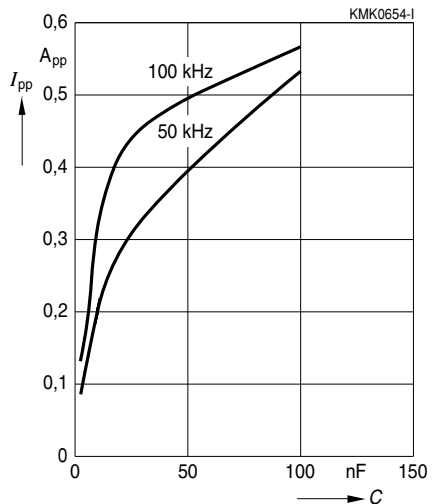


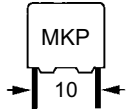
Lead spacing 10 mm

160 Vdc/90 Vac



250 Vdc/140 Vac

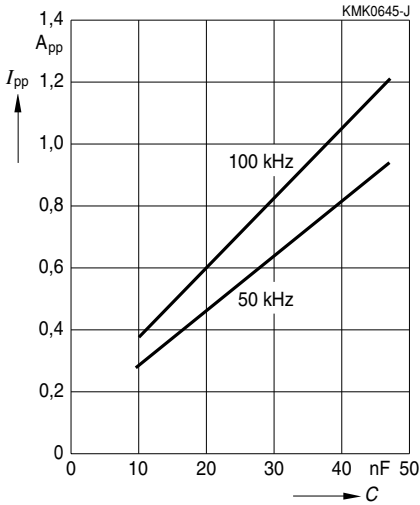




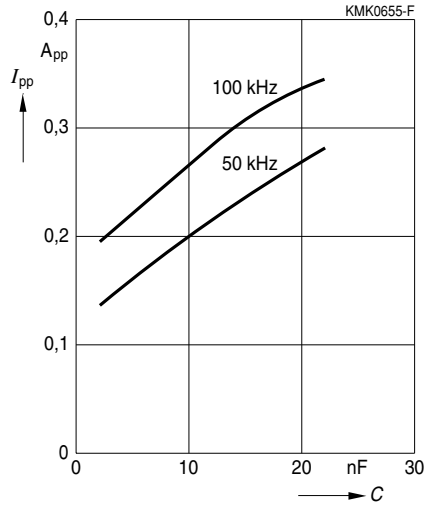
Sinus-wave application, lighting
Permissible current I_{pp} versus rated capacitance C_R

Lead spacing 10 mm

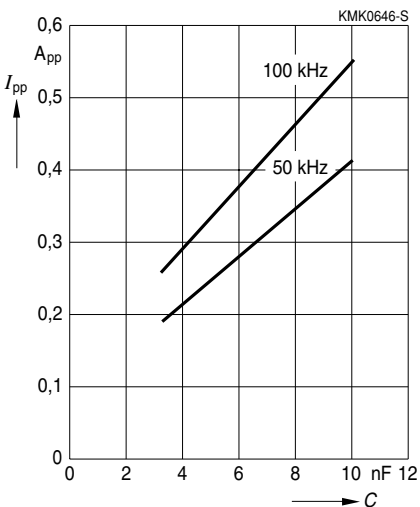
400 Vdc/200 Vac



630 Vdc/400 Vac



1000 Vdc/500 Vac



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