

**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

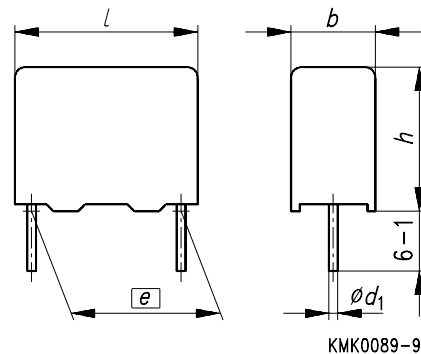
Manufacturer's logo,
lot number, style and type (P621) for lead spacing 10 mm,
style (MKP) for lead spacing 7,5 mm,
rated capacitance (coded),
capacitance tolerance (code letter),
rated dc voltage,
date of manufacture (coded)

Delivery mode

Bulk (untaped)

Taped (Ammo pack or reel)

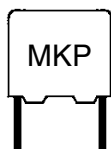
For notes on taping, refer to chapter "Taping and packing", page 274.



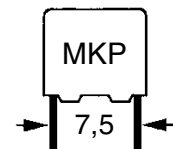
Dimensions in mm

Lead spacing $e \pm 0,4$	Diameter d_1	Type
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	1500
	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	1500
	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

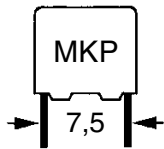
Capacitance tolerance: $\pm 20\% \hat{=} M, \pm 10\% \hat{=} K, \pm 5\% \hat{=} J$

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-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

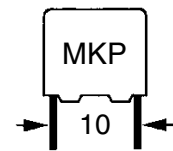
Capacitance tolerance: $\pm 20\% \hat{=} M$, $\pm 10\% \hat{=} K$, $\pm 5\% \hat{=} J$

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 µF	5,0 × 11,0 × 13,0	B32621-A5104-+***	830	1300	1000
	0,15 µF	5,0 × 11,0 × 13,0	B32621-A5154-+***	830	1300	1000
	0,22 µF	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 µF	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	1000
	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

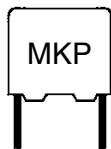
 Capacitance tolerance: $\pm 20\% \hat{=} M, \pm 10\% \hat{=} K, \pm 5\% \hat{=} J$

1) + Code letter for capacitance tolerance

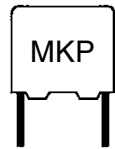
*** Code number for packing: Ammo pack = 289, reel = 189

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

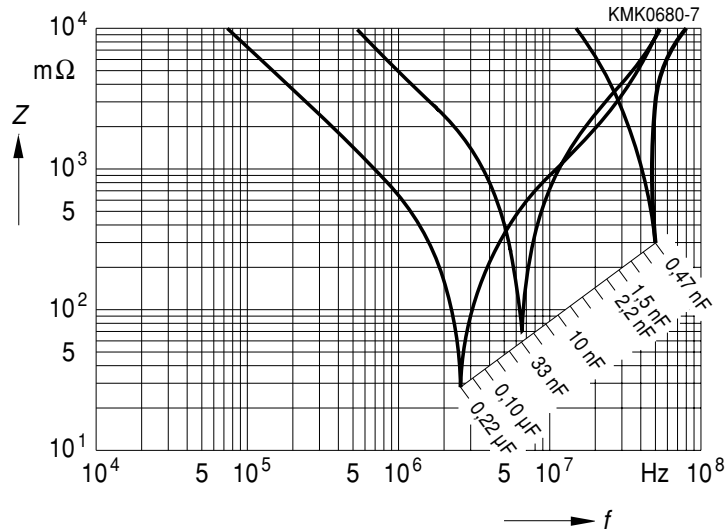
For capacitors with 3,2 mm lead length, append code number "3" to the tolerance code, e.g.: B32621-A5473-K3


B 32 620
B 32 621
Technical data

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



Impedance Z
versus
frequency f
(typical values)



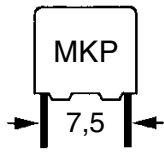
Pulse handling capability

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	–

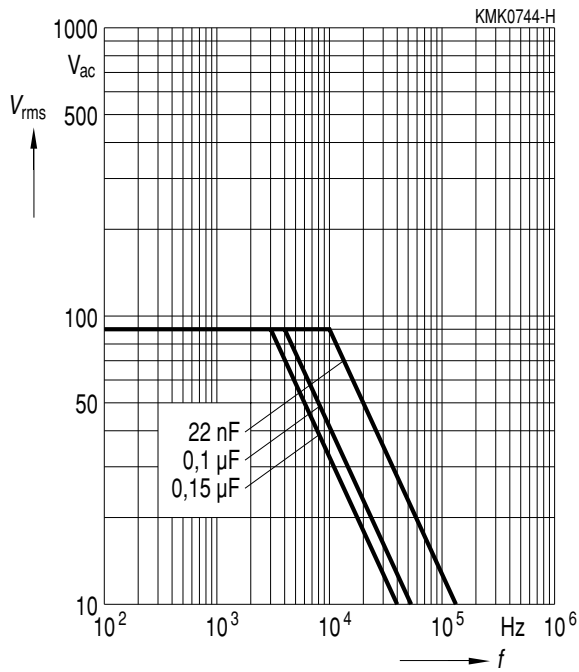


B 32 620

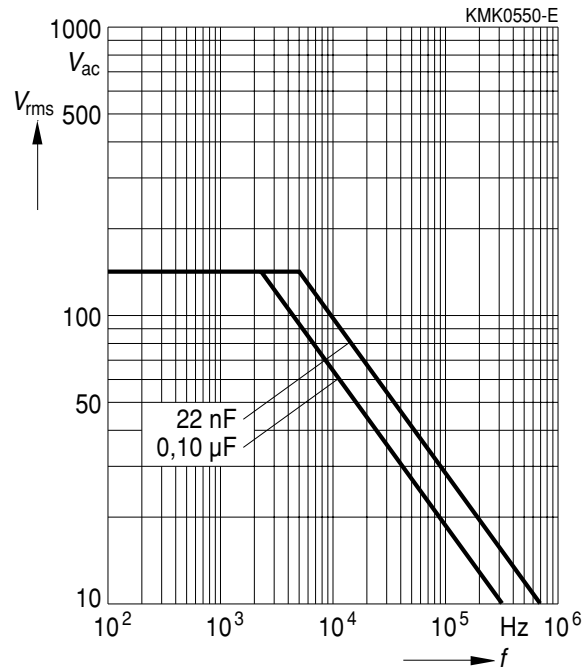
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 7,5 mm

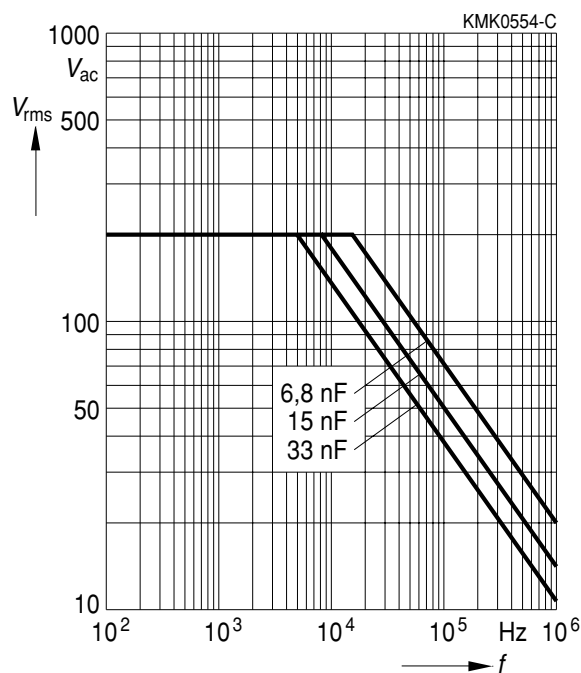
160 Vdc / 90 Vac



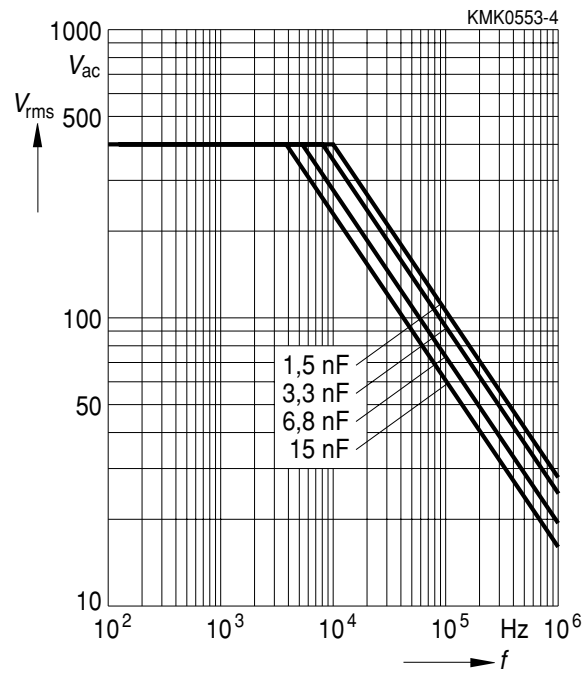
250 Vdc / 140 Vac

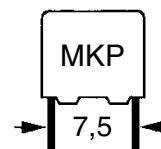


400 Vdc / 200 Vac



630 Vdc / 400 Vac

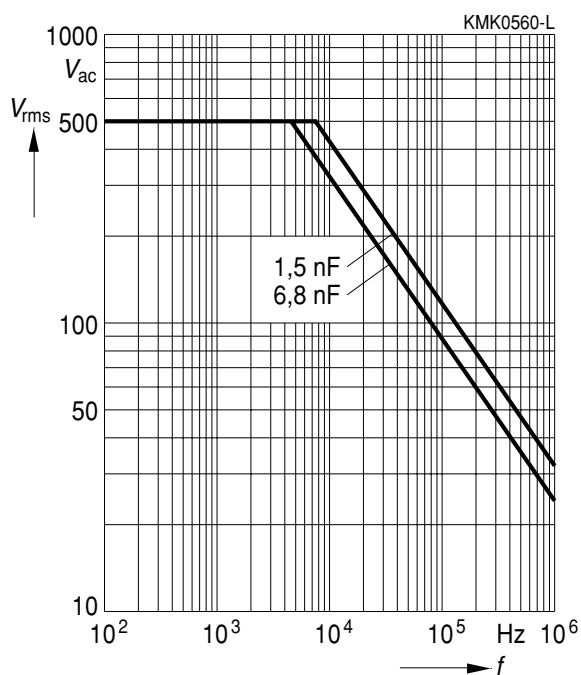




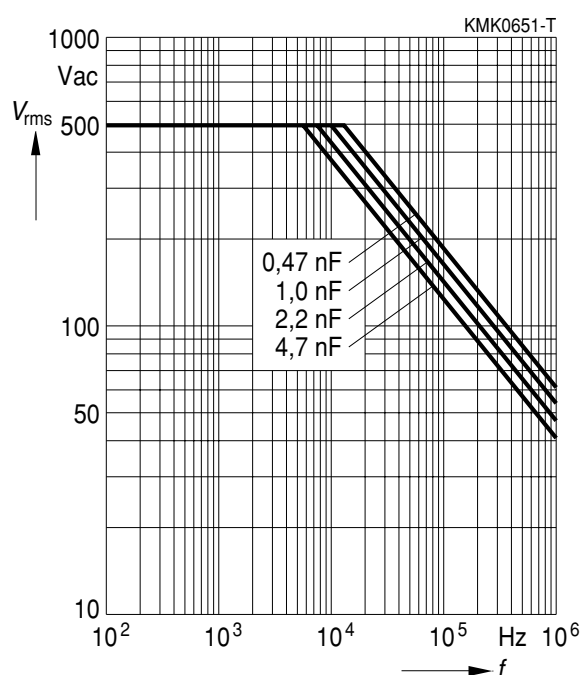
Permissible ac voltage V_{rms} versus frequency f

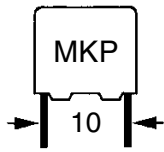
Lead spacing 7,5 mm

1000 Vdc/ 500 Vac



1000 Vdc/ 600 Vac



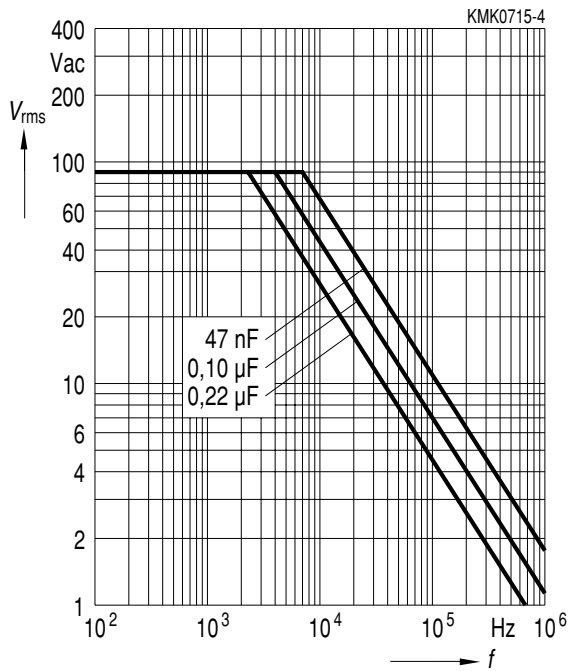


B 32 621

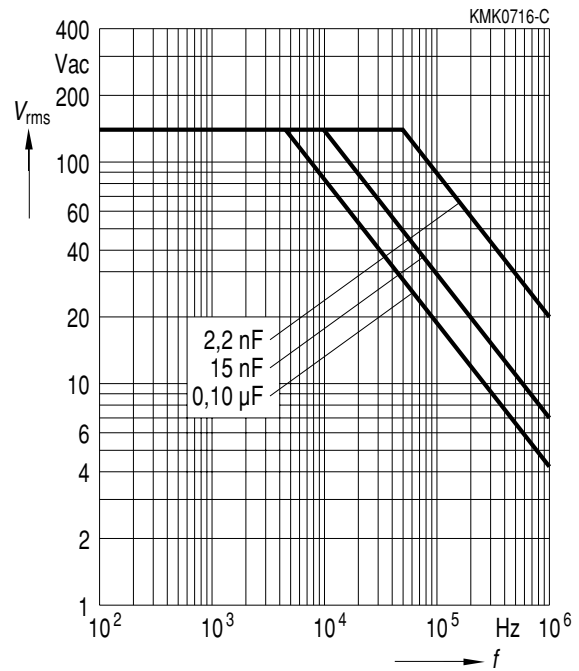
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 10 mm

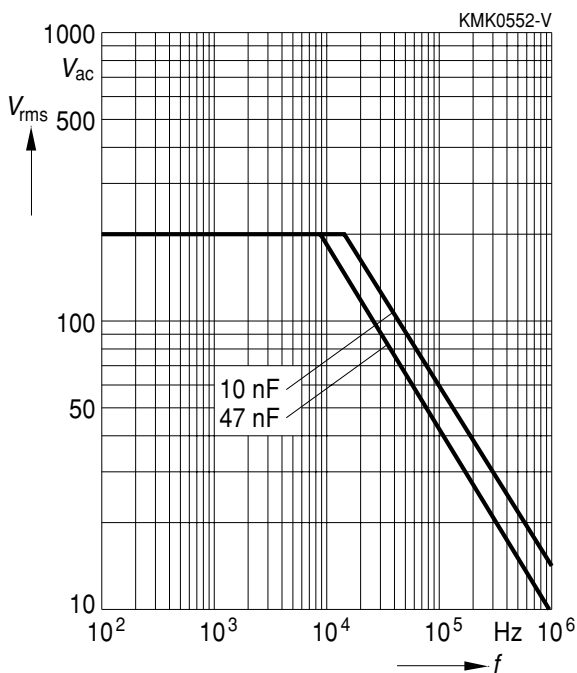
160 Vdc / 90 Vac



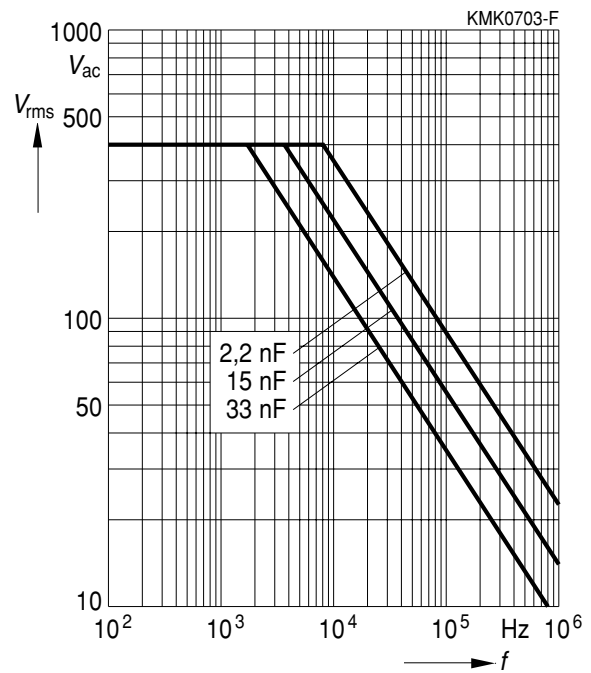
250 Vdc / 140 Vac

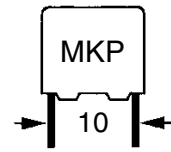


400 Vdc / 200 Vac



630 Vdc / 400 Vac

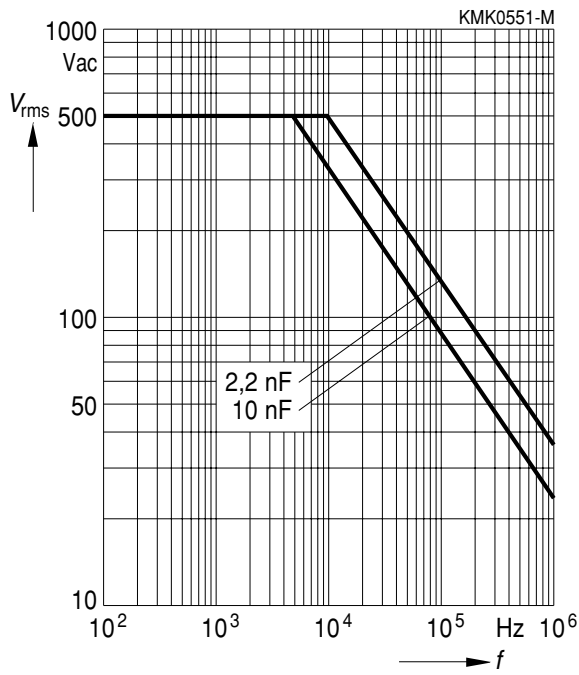


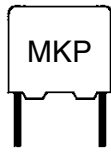


Permissible ac voltage V_{rms} versus frequency f

Lead spacing 10 mm

1000 Vdc / 500 Vac

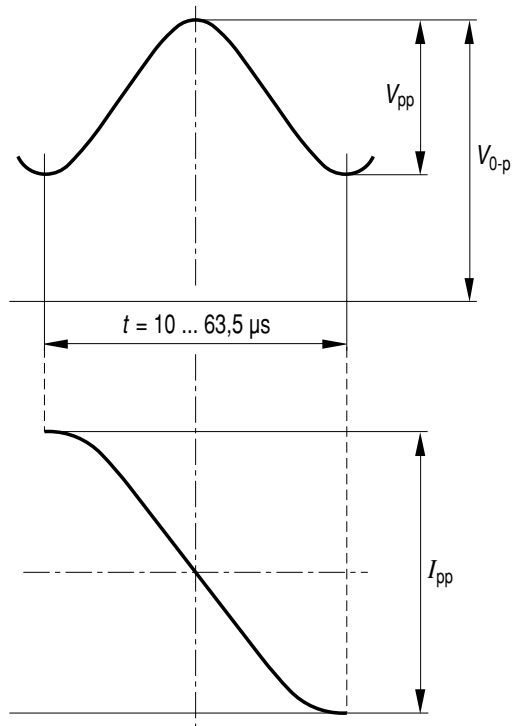




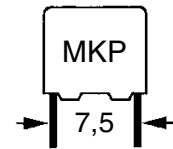
B 32 620

B 32 621

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



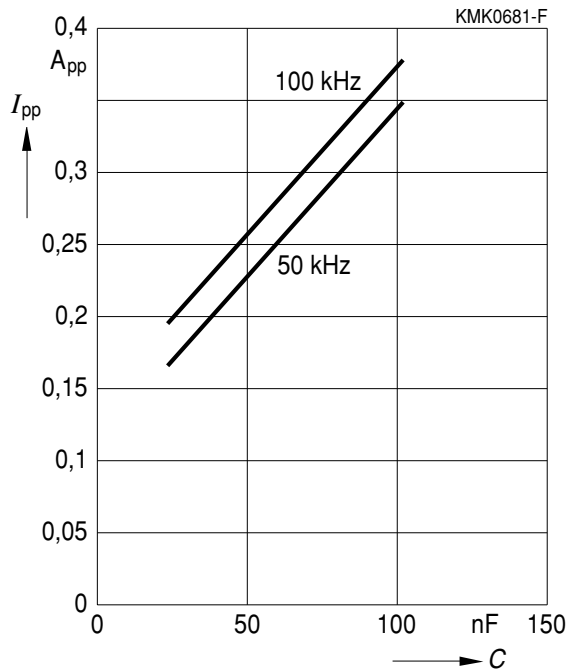
KMK0721-D



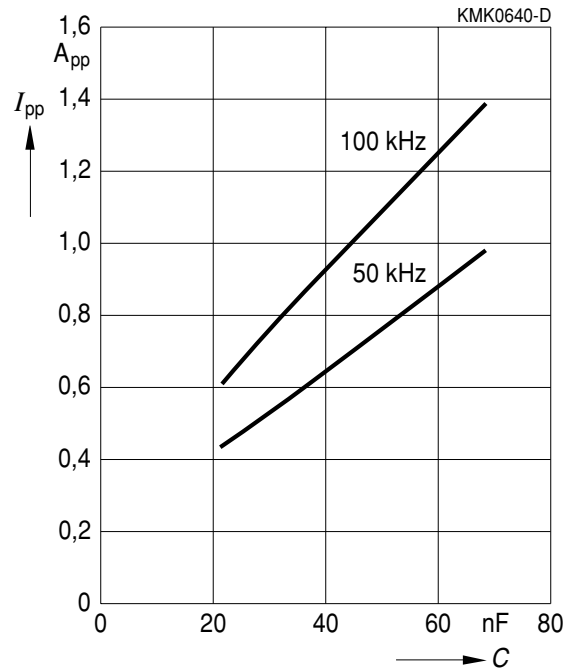
Sinus-wave application, lighting
Permissible current I_{pp} versus rated capacitance C_R

Lead spacing 7,5 mm

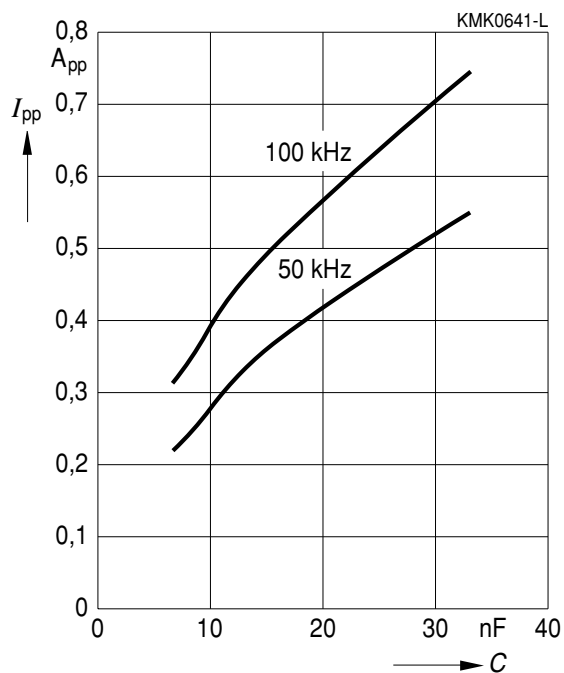
160 Vdc/90 Vac



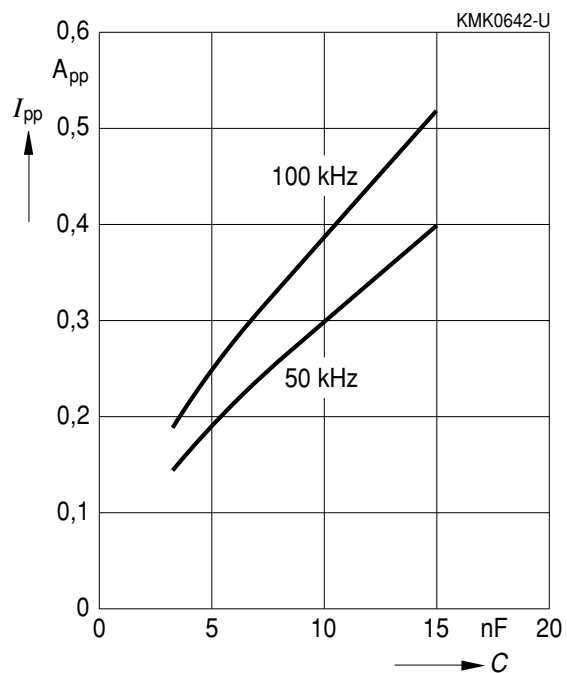
250 Vdc/140 Vac

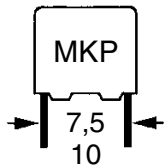


400 Vdc/200 Vac



630 Vdc/400 Vac





B 32 620

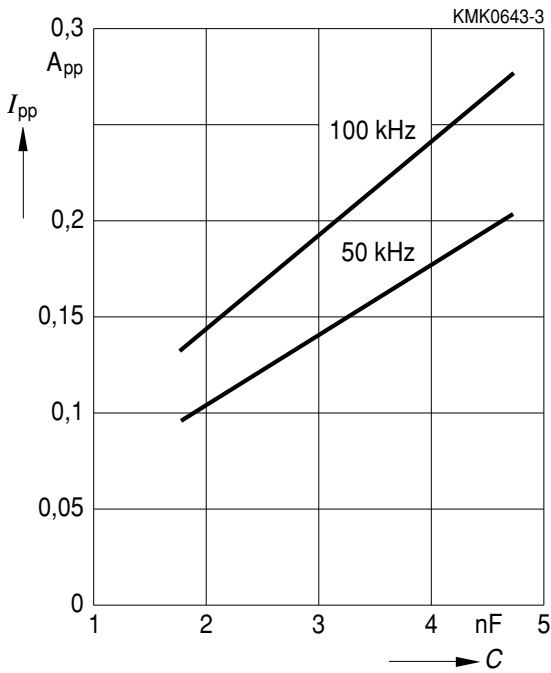
B 32 621

Sinus-wave application, lighting

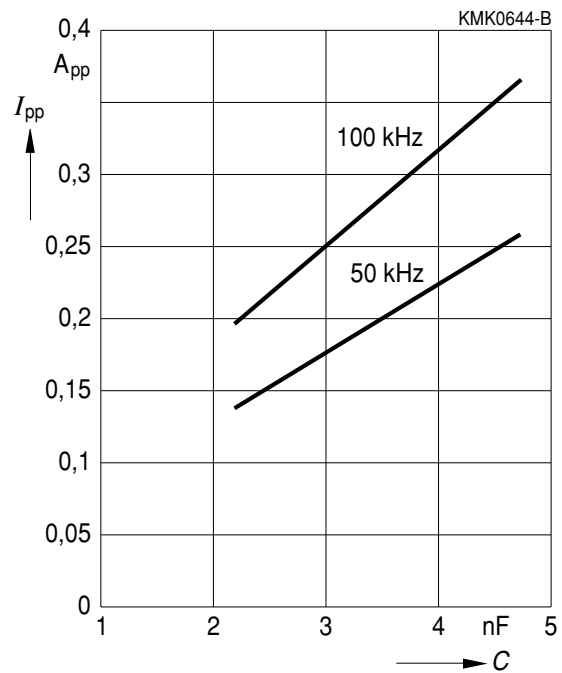
Permissible current I_{pp} versus rated capacitance C_R

Lead spacing 7,5 mm

1000 Vdc/500 Vac

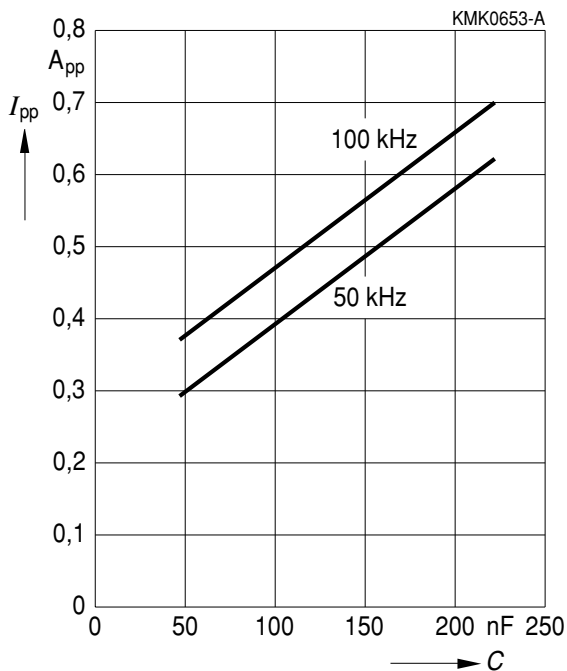


1000 Vdc/600 Vac

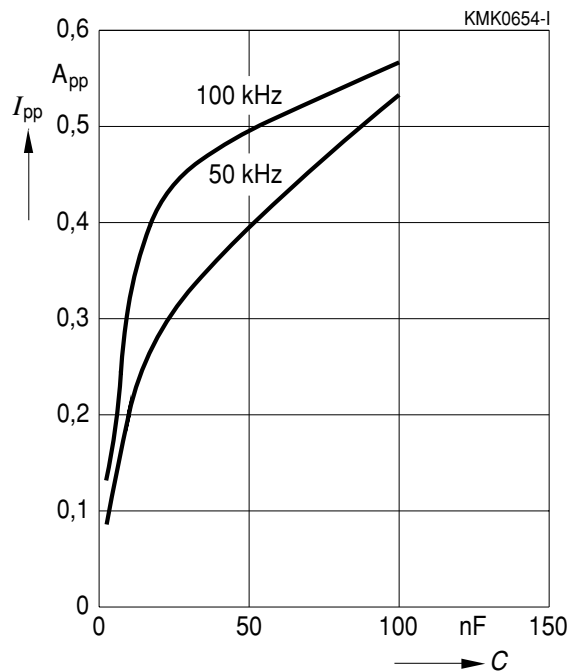


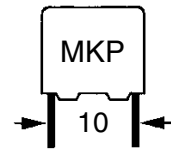
Lead spacing 10 mm

160 Vdc/90 Vac



250 Vdc/140 Vac

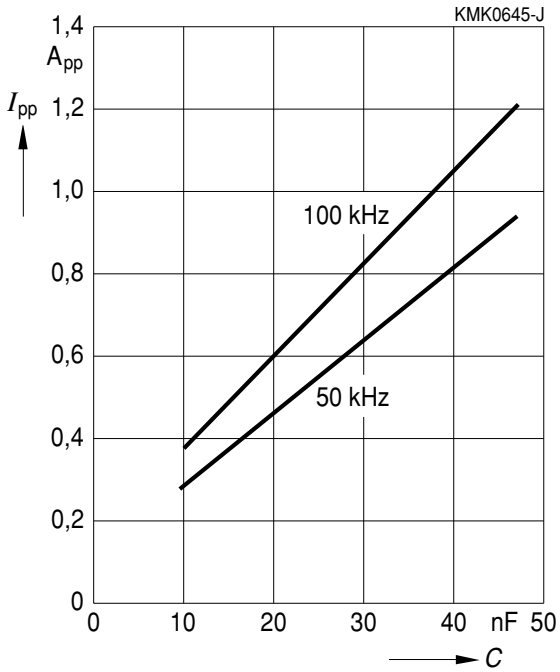




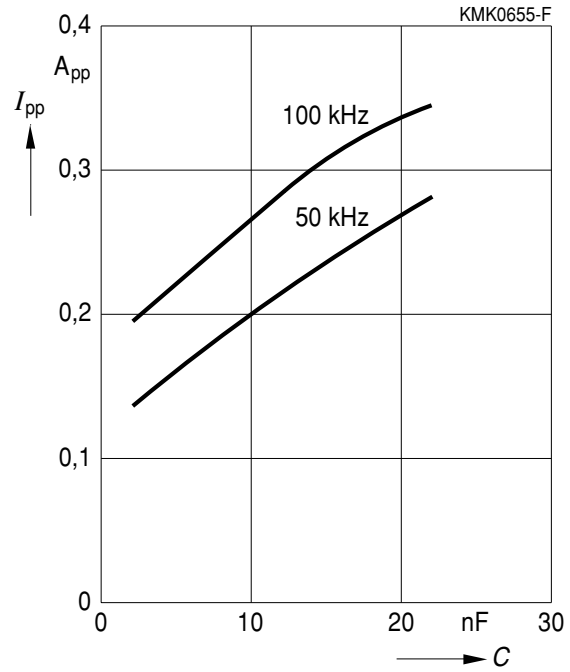
Sinus-wave application, lighting
Permissible current I_{pp} versus rated capacitance C_R

Lead spacing 10 mm

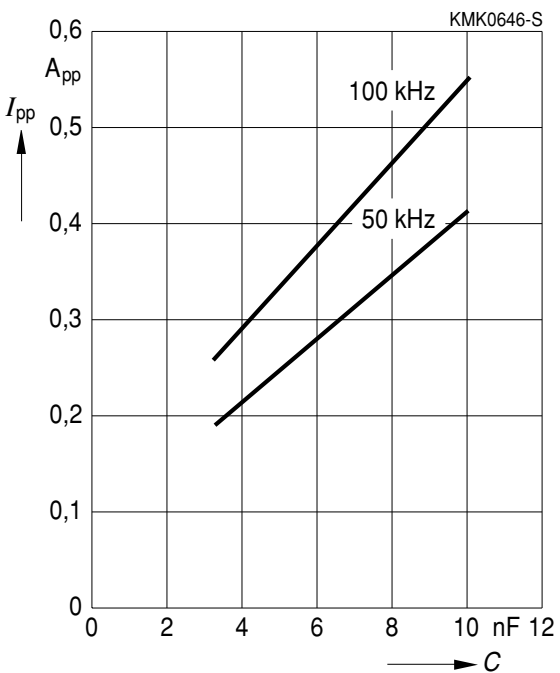
400 Vdc/200 Vac



630 Vdc/400 Vac



1000 Vdc/500 Vac



Herausgegeben von EPCOS AG

Marketing Kommunikation, Postfach 80 17 09, 81617 München, DEUTSCHLAND

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Published by EPCOS AG

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