



**Metallized Polypropylene Film Capacitors (MKP)**

**B 32 620**

**Plastic Case**

**B 32 621**

**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**

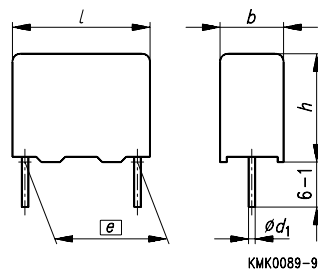
- Parallel wire leads, tinned
- Also available with  $(3,2 \pm 0,3)$  mm lead length

**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**

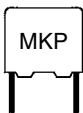
Bulk (untaped)  
Taped (Ammo pack or reel)  
For notes on taping, refer to chapter "Taping and packing", page 274.



Dimensions in mm

Lead spacing $[e] \pm 0,4$	Diameter $d_1$	Type
7,5	0,5	B 32 620
10	0,5 <sup>1)</sup> /0,6	B 32 621

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



**B 32 620**

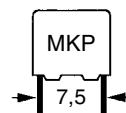
**B 32 621**

**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										



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 <sup>1)</sup>	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

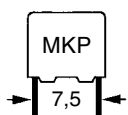
Capacitance tolerance: ±20 % ≙ M, ±10 % ≙ K, ±5 % ≙ J

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 <sup>1)</sup>	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

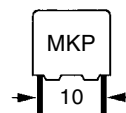
\*\*\* Code number for packing: Ammo pack = 289, reel = 189

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



B 32 621



**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 <sup>1)</sup>	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

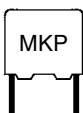
Capacitance tolerance: ±20 % ≙ M, ±10 % ≙ K, ±5 % ≙ J

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.: B32621-A5473-K3



**B 32 620**

**B 32 621**

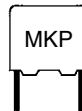
**Technical data**

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 <sup>-3</sup> (at 1 kHz) ≤ 1,0 · 10 <sup>-3</sup> (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 <sup>-9</sup> /h = 1 fit		
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 <sup>-3</sup> ) 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		

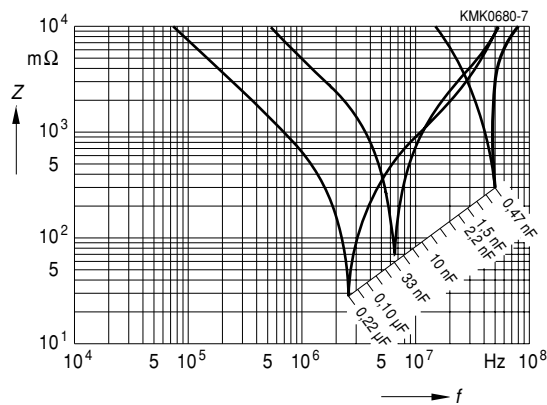


B 32 620

B 32 621



Impedance  $Z$   
versus  
frequency  $f$   
(typical values)



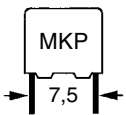
**Pulse handling capability**

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

$V_R$	Max. rate of voltage rise $V_{pp}/\tau$ 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  $V_{pp}/\tau$  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	—

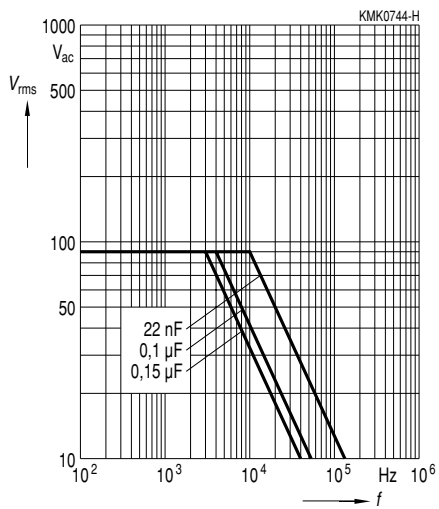


B 32 620

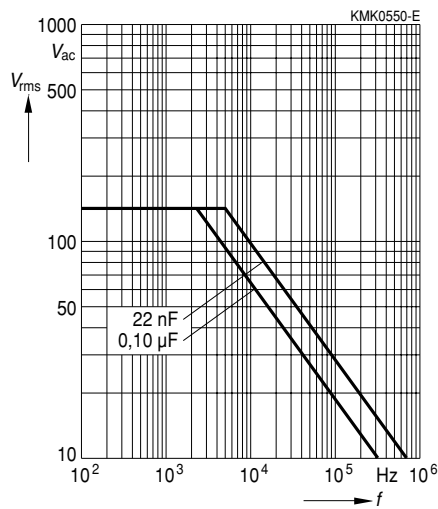
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 7,5 mm

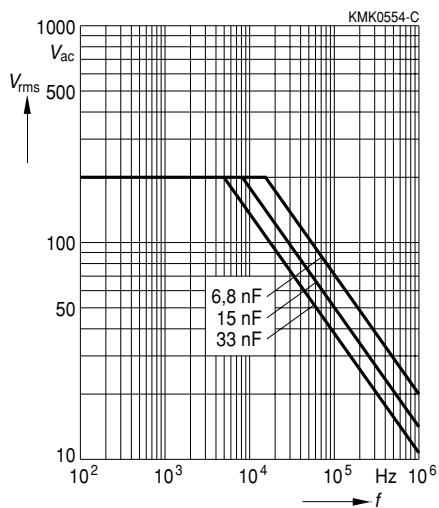
160 Vdc / 90 Vac



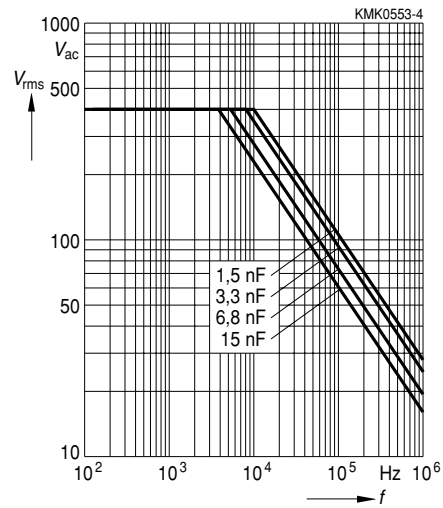
250 Vdc / 140 Vac



400 Vdc / 200 Vac



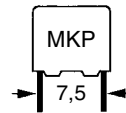
630 Vdc / 400 Vac







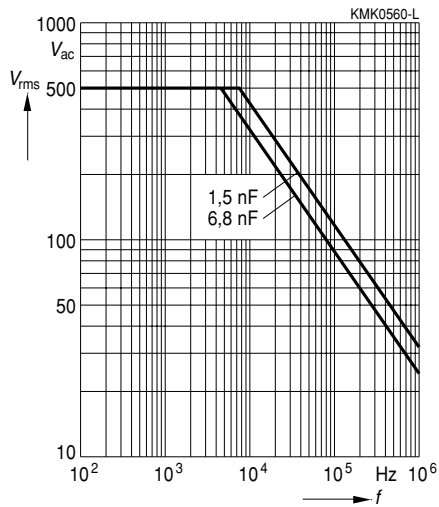
B 32 620



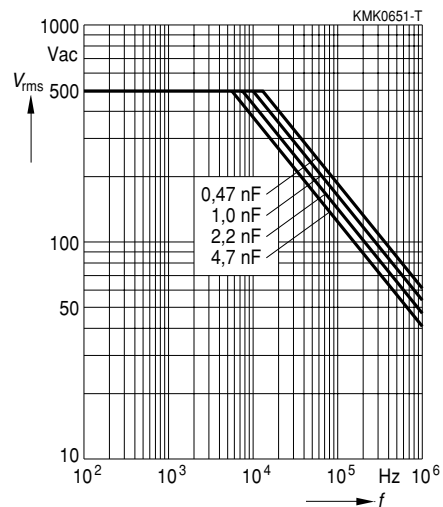
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

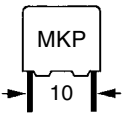
Lead spacing 7,5 mm

1000 Vdc/ 500 Vac



1000 Vdc/ 600 Vac



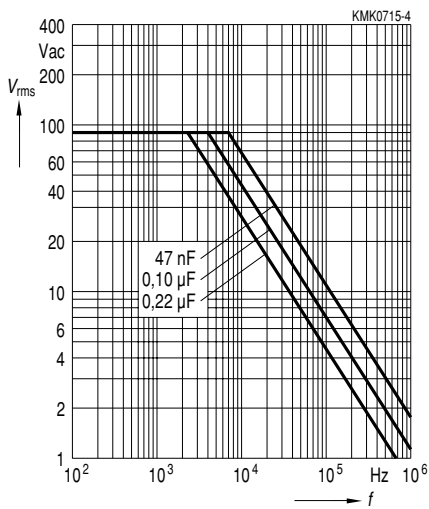


B 32 621

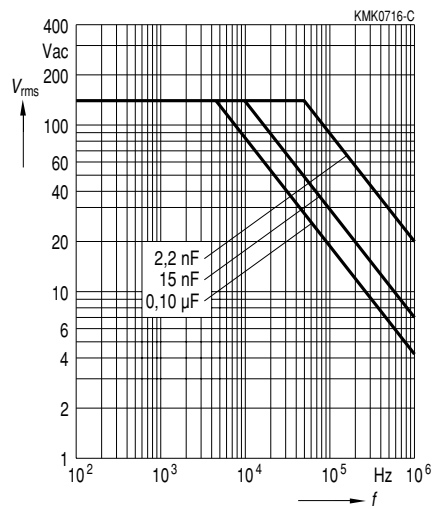
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 10 mm

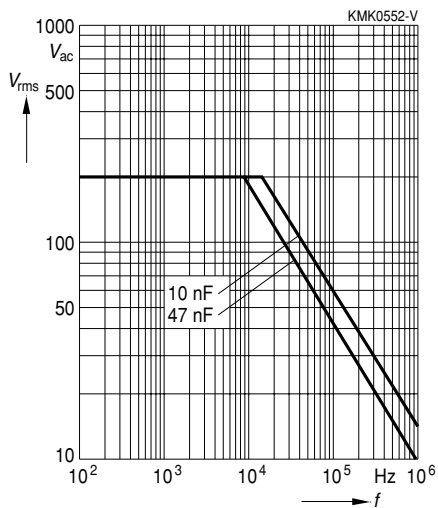
160 Vdc / 90 Vac



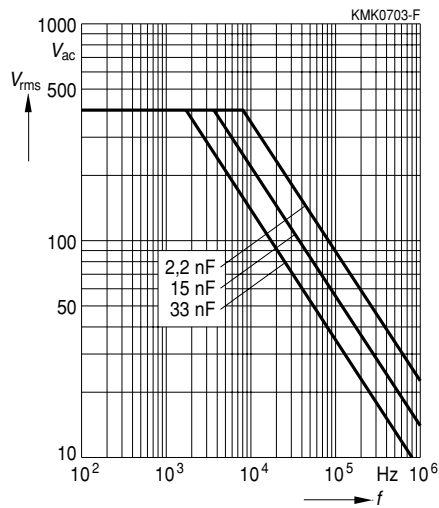
250 Vdc / 140 Vac



400 Vdc / 200 Vac

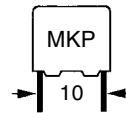


630 Vdc / 400 Vac





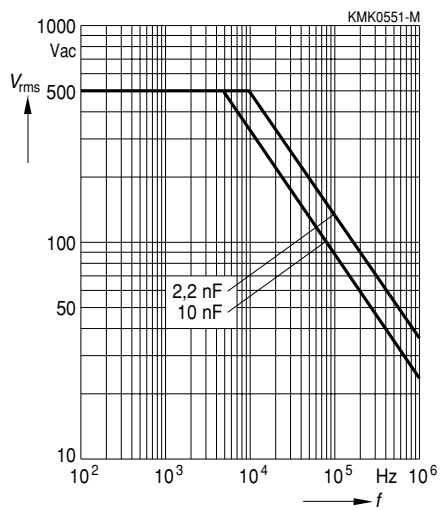
B 32 621

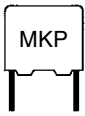


Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 10 mm

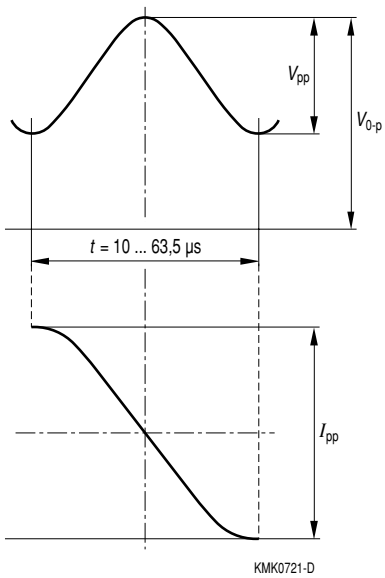
1000 Vdc / 500 Vac





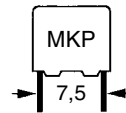
B 32 620  
B 32 621

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





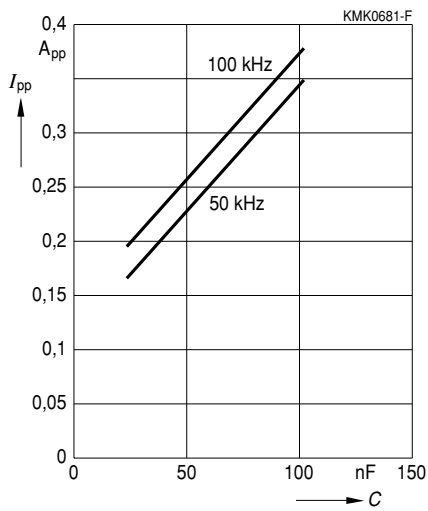
B 32 620



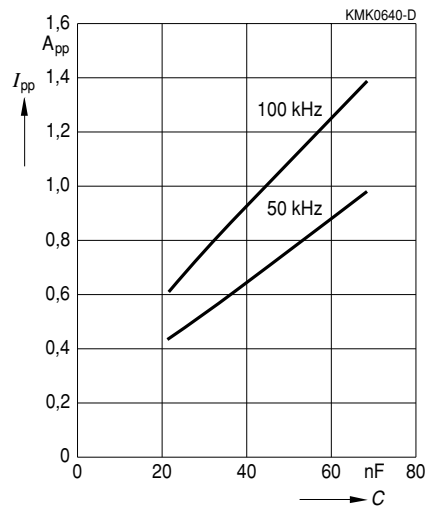
**Sinus-wave application, lighting**  
**Permissible current  $I_{pp}$  versus rated capacitance  $C_R$**

**Lead spacing 7,5 mm**

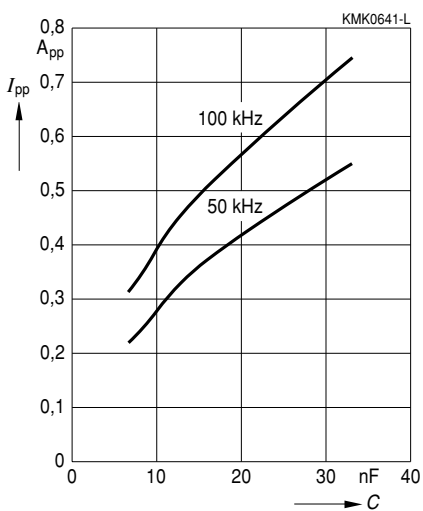
160 Vdc/90 Vac



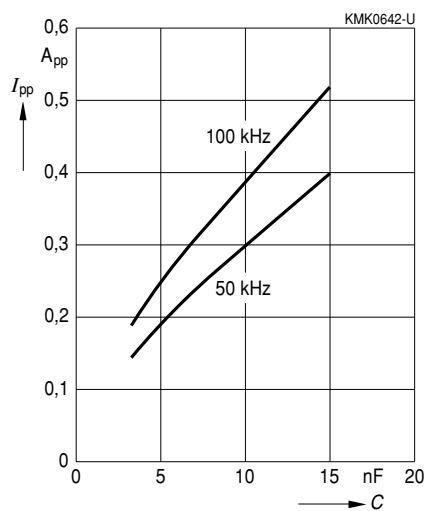
250 Vdc/140 Vac

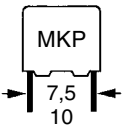


400 Vdc/200 Vac



630 Vdc/400 Vac





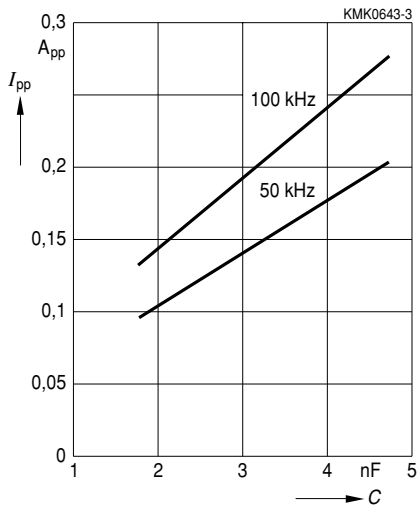
B 32 620

B 32 621

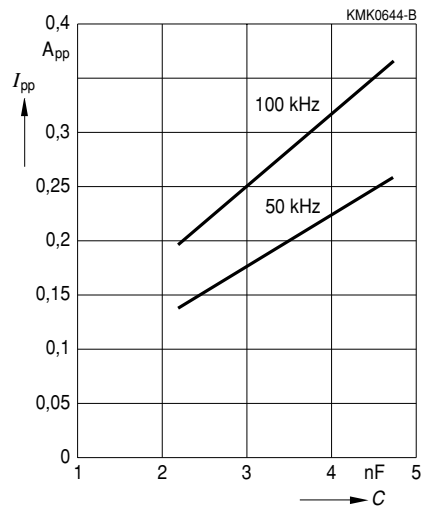
Sinus-wave application, lighting  
Permissible current  $I_{pp}$  versus rated capacitance  $C_R$

Lead spacing 7,5 mm

1000 Vdc/500 Vac

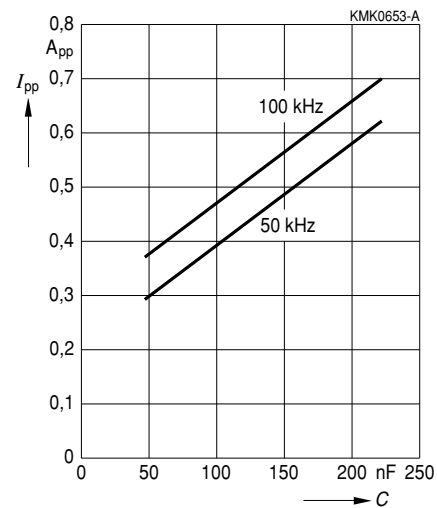


1000 Vdc/600 Vac

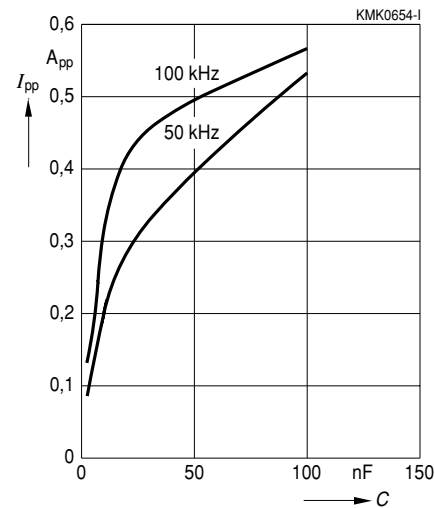


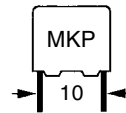
Lead spacing 10 mm

160 Vdc/90 Vac



250 Vdc/140 Vac

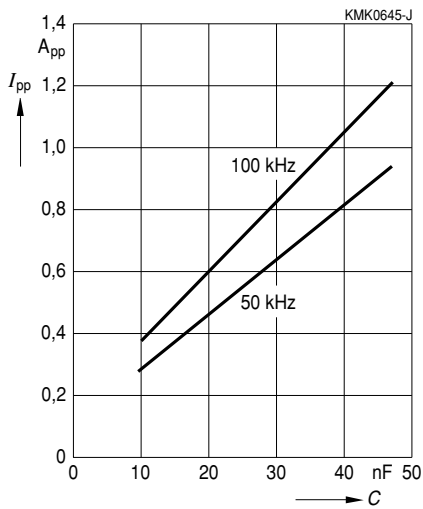




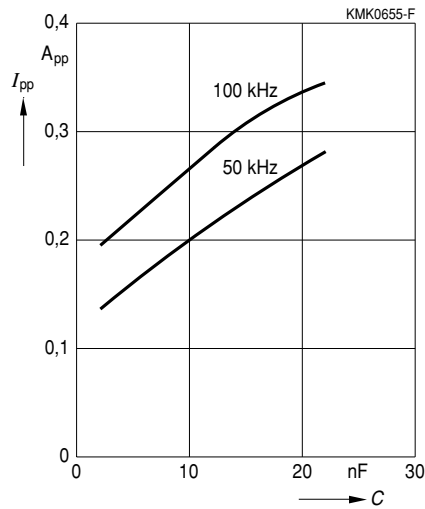
**Sinus-wave application, lighting**  
**Permissible current  $I_{pp}$  versus rated capacitance  $C_R$**

**Lead spacing 10 mm**

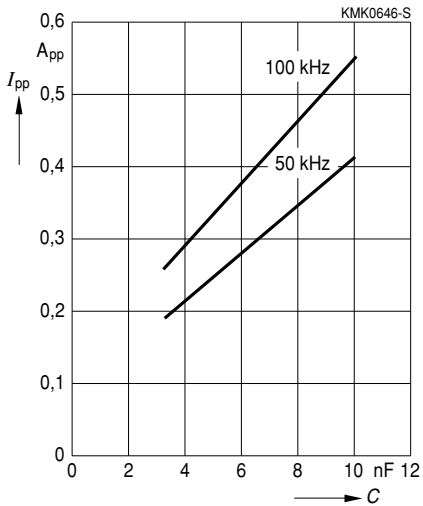
400 Vdc/200 Vac



630 Vdc/400 Vac



1000 Vdc/500 Vac



**Herausgegeben von EPCOS AG**

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

© EPCOS AG 2000. Alle Rechte vorbehalten. Vervielfältigung, Veröffentlichung, Verbreitung und Verwertung dieser Broschüre und ihres Inhalts ohne ausdrückliche Genehmigung der EPCOS AG nicht gestattet.

Mit den Angaben in dieser Broschüre werden die Bauelemente spezifiziert, keine Eigenschaften zugesichert. Bestellungen unterliegen den vom ZVEI empfohlenen Allgemeinen Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie, soweit nichts anderes vereinbart wird.

Diese Broschüre ersetzt die vorige Ausgabe.

Fragen über Technik, Preise und Liefermöglichkeiten richten Sie bitte an den Ihnen nächstgelegenen Vertrieb der EPCOS AG oder an unsere Vertriebsgesellschaften im Ausland.

Bauelemente können aufgrund technischer Erfordernisse Gefahrstoffe enthalten. Auskünfte darüber bitten wir unter Angabe des betreffenden Typs ebenfalls über die zuständige Vertriebsgesellschaft einzuholen.

**Published by EPCOS AG**

**Marketing Communications, P.O. Box 80 17 09, 81617 Munich, GERMANY**

© EPCOS AG 2000. All Rights Reserved. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

The information contained in this brochure describes the type of component and shall not be considered as guaranteed characteristics. Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.