

**Wound MKP capacitors  
Small dimensions**
**Construction**

- Dielectric: polypropylene
- Wound capacitor technology with internal series connection for  $V_R \geq 1250$  Vdc
- Plastic case (UL 94 V-0)
- Epoxy resin sealing

**Features**

- High pulse strength
- High contact reliability
- Small dimensions

**Typical applications**

- TV S-correction
- TV flyback
- Electronic ballast circuits

**Terminals**

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

**Marking**

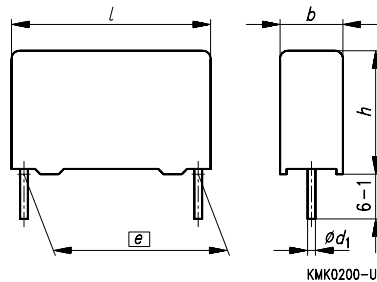
Manufacturer's logo,  
lot number, style and type (P6xx),  
rated capacitance (coded),  
capacitance tolerance (code letter),  
rated dc voltage  
(ac voltage for 1600 Vdc/700 Vac and  
2000 Vdc/1000 Vac),  
date of manufacture (coded)

**Delivery mode**

Bulk

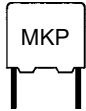
Taped (Ammo pack or reel)

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



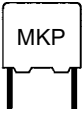
Dimensions in mm

Lead spacing	Diameter $d_1$	Type
$e \pm 0,4$		
10,0	0,6	B 32 651
15,0	0,8	B 32 652
22,5	0,8	B 32 653
27,5	0,8	B 32 654
37,5	1,0	B 32 656


**Overview of available types**

Lead spacing	10 mm <sup>1)</sup>	15 mm								
Type	B 32 651	B 32 652								
Page	<a href="#">136</a>	<a href="#">137</a>								
1,0 nF										
1,5 nF										
2,2 nF	1250 Vdc 450 Vac									2000 Vdc 700 Vac
3,3 nF										
4,7 nF										
6,8 nF										
10 nF						1000 Vdc 250 Vac	1250 Vdc 500 Vac	1600 Vdc 500 Vac	1600 Vdc 700 Vac	
15 nF										
22 nF										
33 nF										
47 nF										
68 nF										
0,10 µF										
0,15 µF										
0,22 µF		250 Vdc 160 Vac	400 Vdc 200 Vac	630 Vdc 250 Vac						
0,33 µF										
0,47 µF										
0,68 µF										
1,0 µF										

1) Additional values on request



B 32 651 ...

B 32 656

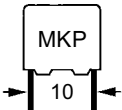
**Overview of available types**

Lead spacing	22,5 mm							
Type	B 32 653							
Page	<a href="#">139</a>							
1,0 nF								
1,5 nF								
2,2 nF								
3,3 nF								
4,7 nF							2000 Vdc 700 Vac	2000 Vdc 1000 Vac
6,8 nF								
10 nF						1600 Vdc 500 Vac		
15 nF								
22 nF						1250 Vdc 500 Vac		
33 nF								
47 nF						1000 Vdc 250 Vac		
68 nF								
0,10 µF								
0,15 µF		400 Vdc 200 Vac	630 Vdc 250 Vac					
0,22 µF								
0,33 µF	250 Vdc 160 Vac							
0,47 µF								
0,68 µF								
1,0 µF								

1) Additional values on request

**Overview of available types**

Lead spacing	27,5 mm						37,5 mm					
Type	B 32 654						B 32 656					
Page	<a href="#">141</a>						<a href="#">142</a>					
22 nF												
33 nF												
47 nF												
68 nF												
0,10 µF												
0,15 µF												
0,22 µF												
0,33 µF												
0,47 µF												
0,68 µF												
1,0 µF												
1,5 µF												
2,2 µF												
3,3 µF												
4,7 µF												


**B 32 651**
**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
1250 Vdc <sup>2)</sup> (450 Vac)	2,2 nF	4,0 × 9,0 × 13,0	B32651-A7222-+***	1000	1700	1000
	3,3 nF	5,0 × 11,0 × 13,0	B32651-A7332-+***	830	1300	1000
	4,7 nF	5,0 × 11,0 × 13,0	B32651-A7472-+***	830	1300	1000
	6,8 nF	6,0 × 12,0 × 13,0	B32651-A7682-+***	680	1100	1000

 Capacitance tolerance:  $\pm 10\% \hat{=} K, \pm 5\% \hat{=} J, (\pm 3,5\% \text{ upon request})$ 

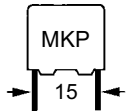
1) + Code letter for capacitance tolerance

\*\*\* 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: B32651-A7222-K3

 2) For pulse loads (pulse width  $\leq 1000 \mu s$ ), a peak voltage of 1400  $V_p$  can be permitted.


**Ordering codes and packing units, lead spacing 15 mm**

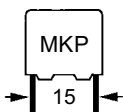
$V_R$ ( $V_{rms}$ $f \leq 1$ kHz)	$C_R$	Maximum dimensions $b \times h \times l$ (mm)	Ordering code <sup>1)</sup>	Packing units (pcs)		
				Ammo pack	Reel	Untaped
250 Vdc (160 Vac)	0,15 $\mu$ F	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A3154-****	1170	1300	1000
	0,22 $\mu$ F	6,0 $\times$ 11,0 $\times$ 18,0	B32652-A3224-****	960	1100	1000
	0,33 $\mu$ F	7,0 $\times$ 12,5 $\times$ 18,0	B32652-A3334-****	830	900	1000
	0,47 $\mu$ F	8,5 $\times$ 14,5 $\times$ 18,0	B32652-A3474-****	680	700	500
	0,68 $\mu$ F	9,0 $\times$ 17,5 $\times$ 18,0	B32652-A3684-****	640	700	500
400 Vdc (200 Vac)	68 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A4683-****	1170	1300	1000
	0,10 $\mu$ F	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A4104-****	1170	1300	1000
	0,15 $\mu$ F	6,0 $\times$ 11,0 $\times$ 18,0	B32652-A4154-****	960	1100	1000
	0,22 $\mu$ F	7,0 $\times$ 12,5 $\times$ 18,0	B32652-A4224-****	830	900	1000
	0,33 $\mu$ F	8,5 $\times$ 14,5 $\times$ 18,0	B32652-A4334-****	680	700	500
630 Vdc (250 Vac)	0,47 $\mu$ F	9,0 $\times$ 17,5 $\times$ 18,0	B32652-A4474-****	640	700	500
	33 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A6333-****	1170	1300	1000
	47 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A6473-****	1170	1300	1000
	68 nF	6,0 $\times$ 11,0 $\times$ 18,0	B32652-A6683-****	960	1100	1000
	0,10 $\mu$ F	7,0 $\times$ 12,5 $\times$ 18,0	B32652-A6104-****	830	900	1000
1000 Vdc (250 Vac)	0,15 $\mu$ F	8,5 $\times$ 14,5 $\times$ 18,0	B32652-A6154-****	680	700	500
	0,22 $\mu$ F	9,0 $\times$ 17,5 $\times$ 18,0	B32652-A6224-****	640	700	500
	10 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A0103-****	1170	1300	1000
	15 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A0153-****	1170	1300	1000
	22 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A0223-****	1170	1300	1000
1250 Vdc (500 Vac)	33 nF	6,0 $\times$ 11,0 $\times$ 18,0	B32652-A0333-****	960	1100	1000
	47 nF	7,0 $\times$ 12,5 $\times$ 18,0	B32652-A0473-****	830	900	1000
	68 nF	8,5 $\times$ 14,5 $\times$ 18,0	B32652-A0683-****	680	700	500
	0,10 $\mu$ F	9,0 $\times$ 17,5 $\times$ 18,0	B32652-A0104-****	640	700	500
	1600 Vdc (500 Vac)	6,8 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A7682-****	1170	1300
10 nF		6,0 $\times$ 11,0 $\times$ 18,0	B32652-A7103-****	960	1100	1000
15 nF		7,0 $\times$ 12,5 $\times$ 18,0	B32652-A7153-****	830	900	1000
22 nF		8,5 $\times$ 14,5 $\times$ 18,0	B32652-A7223-****	680	700	500
33 nF		9,0 $\times$ 17,5 $\times$ 18,0	B32652-A7333-****	640	700	500
1600 Vdc (500 Vac)	6,8 nF	7,0 $\times$ 12,5 $\times$ 18,0	B32652-A1682-****	830	900	1000
	10 nF	8,5 $\times$ 14,5 $\times$ 18,0	B32652-A1103-****	680	700	500
	15 nF	9,0 $\times$ 17,5 $\times$ 18,0	B32652-A1153-****	640	700	500
	3,3 nF	5,0 $\times$ 10,5 $\times$ 18,0	B32652-A1332-****	1170	1300	1000
	4,7 nF	6,0 $\times$ 11,0 $\times$ 18,0	B32652-A1472-****	960	1100	1000

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: B32652-A3154-K3


**B 32 652**
**Ordering codes and packing units, lead spacing 15 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
1600 Vdc <sup>2)</sup> (700Vac)	2,2 nF	5,0 × 10,5 × 18,0	B32652-J1222-+***	1170	1300	1000
	3,3 nF	6,0 × 11,0 × 18,0	B32652-J1332-+***	960	1100	1000
	4,7 nF	7,0 × 12,5 × 18,0	B32652-J1472-+***	830	900	1000
	6,8 nF	8,5 × 14,5 × 18,0	B32652-J1682-+***	680	700	500
	10 nF	9,0 × 17,5 × 18,0	B32652-J1103-+***	640	700	500
2000 Vdc (700 Vac)	1,0 nF	5,0 × 10,5 × 18,0	B32652-A2102-+***	1170	1300	1000
	1,5 nF	6,0 × 11,0 × 18,0	B32652-A2152-+***	960	1100	1000
	2,2 nF	7,0 × 12,5 × 18,0	B32652-A2222-+***	830	900	1000
	3,3 nF	8,5 × 14,5 × 18,0	B32652-A2332-+***	680	700	500
	4,7 nF	9,0 × 17,5 × 18,0	B32652-A2472-+***	640	700	500

 Capacitance tolerance:  $\pm 10\% \hat{=} K, \pm 5\% \hat{=} J, (\pm 3,5\% \text{ upon request})$ 

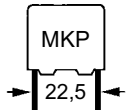
1) + Code letter for capacitance tolerance

\*\*\* 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: B32652-J1222-K3

2) Additional capacitance ratings upon request


**Ordering codes and packing units, lead spacing 22,5 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
250 Vdc (160 Vac)	0,22 $\mu$ F	6,0 × 15,0 × 26,5	B32653-A3224-+***	680	700	720
	0,33 $\mu$ F	6,0 × 15,0 × 26,5	B32653-A3334-+***	680	700	720
	0,47 $\mu$ F	7,0 × 16,0 × 26,5	B32653-A3474-+***	580	600	630
	0,68 $\mu$ F	8,5 × 16,5 × 26,5	B32653-A3684-+***	480	500	510
	1,0 $\mu$ F	10,5 × 16,5 × 26,5	B32653-A3105-+***	390	400	540
400 Vdc (200 Vac)	0,15 $\mu$ F	6,0 × 15,0 × 26,5	B32653-A4154-+***	680	700	720
	0,22 $\mu$ F	6,0 × 15,0 × 26,5	B32653-A4224-+***	680	700	720
	0,33 $\mu$ F	7,0 × 16,0 × 26,5	B32653-A4334-+***	580	600	630
	0,47 $\mu$ F	8,5 × 16,5 × 26,5	B32653-A4474-+***	480	500	510
	0,68 $\mu$ F	10,5 × 16,5 × 26,5	B32653-A4684-+***	390	400	540
	1,0 $\mu$ F	11,0 × 20,5 × 26,5	B32653-A4105-+***	370	350	510
630 Vdc (250 Vac)	0,10 $\mu$ F	6,0 × 15,0 × 26,5	B32653-A6104-+***	680	700	720
	0,15 $\mu$ F	6,0 × 15,0 × 26,5	B32653-A6154-+***	680	700	720
	0,22 $\mu$ F	8,5 × 16,5 × 26,5	B32653-A6224-+***	480	500	510
	0,33 $\mu$ F	10,5 × 16,5 × 26,5	B32653-A6334-+***	390	400	540
	0,47 $\mu$ F	11,0 × 20,5 × 26,5	B32653-A6474-+***	370	350	510
1000 Vdc (250 Vac)	33 nF	6,0 × 15,0 × 26,5	B32653-A0333-+***	680	700	720
	47 nF	6,0 × 15,0 × 26,5	B32653-A0473-+***	680	700	720
	68 nF	6,0 × 15,0 × 26,5	B32653-A0683-+***	680	700	720
	0,10 $\mu$ F	8,5 × 16,5 × 26,5	B32653-A0104-+***	480	500	510
	0,15 $\mu$ F	10,5 × 16,5 × 26,5	B32653-A0154-+***	390	400	540
	0,22 $\mu$ F	11,0 × 20,5 × 26,5	B32653-A0224-+***	370	350	510
	1250 Vdc (500 Vac)	22 nF	6,0 × 15,0 × 26,5	B32653-A7223-+***	680	700
33 nF		6,0 × 15,0 × 26,5	B32653-A7333-+***	680	700	720
47 nF		8,5 × 16,5 × 26,5	B32653-A7473-+***	480	500	510
68 nF		10,5 × 16,5 × 26,5	B32653-A7683-+***	390	400	540
0,10 $\mu$ F		11,0 × 20,5 × 26,5	B32653-A7104-+***	370	350	510
1600 Vdc (500 Vac)		6,8 nF	6,0 × 15,0 × 26,5	B32653-A1682-+***	680	700
	10 nF	6,0 × 15,0 × 26,5	B32653-A1103-+***	680	700	720
	15 nF	7,0 × 16,0 × 26,5	B32653-A1153-+***	580	600	630
	22 nF	8,5 × 16,5 × 26,5	B32653-A1223-+***	480	500	510
	33 nF	10,5 × 16,5 × 26,5	B32653-A1333-+***	390	400	540
	47 nF	11,0 × 20,5 × 26,5	B32653-A1473-+***	370	350	510

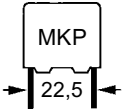
1) + Code letter for capacitance tolerance

\*\*\* 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.: B32653-A3224-K3





B 32 653

**Ordering codes and packing units, lead spacing 22,5 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
2000 Vdc (700 Vac)	3,3 nF	6,0 × 15,0 × 26,5	B32653-A2332-****	680	700	720
	4,7 nF	6,0 × 15,0 × 26,5	B32653-A2472-****	680	700	720
	6,8 nF	8,5 × 16,5 × 26,5	B32653-A2682-****	480	500	510
	10 nF	10,5 × 16,5 × 26,5	B32653-A2103-****	390	400	540
	15 nF	11,0 × 20,5 × 26,5	B32653-A2153-****	370	350	510
2000 Vdc (1000 Vac)	2,2 nF	6,0 × 15,0 × 26,5	B32653-A8222-****	680	700	720
	3,3 nF	6,0 × 15,0 × 26,5	B32653-A8332-****	680	700	720
	4,7 nF	8,5 × 16,5 × 26,5	B32653-A8472-****	480	500	510
	6,8 nF	10,5 × 16,5 × 26,5	B32653-A8682-****	390	400	540
	10 nF	10,5 × 20,5 × 26,5	B32653-A8103-****	390	400	540

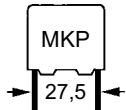
Capacitance tolerance:  $\pm 10\% \hat{=} K$ ,  $\pm 5\% \hat{=} J$ , ( $\pm 3,5\%$  upon request)

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.: B32653-A2332-K3


**Ordering codes and packing units, lead spacing 27,5 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
250 Vdc (160 Vac)	1,5 $\mu$ F	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A3155-****	–	350	320
	2,2 $\mu$ F	12,5 $\times$ 21,5 $\times$ 31,5	B32654-A3225-****	–	300	280
	3,3 $\mu$ F	15,0 $\times$ 24,5 $\times$ 31,5	B32654-A3335-****	–	–	240
	4,7 $\mu$ F	18,0 $\times$ 27,5 $\times$ 31,5	B32654-A3475-****	–	–	200
400 Vdc (200 Vac)	1,0 $\mu$ F	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A4105-****	–	350	320
	1,5 $\mu$ F	12,5 $\times$ 21,5 $\times$ 31,5	B32654-A4155-****	–	300	280
	2,2 $\mu$ F	14,0 $\times$ 24,5 $\times$ 31,5	B32654-A4225-****	–	–	260
	3,3 $\mu$ F	19,0 $\times$ 30,0 $\times$ 31,5	B32654-A4335-****	–	–	180
630 Vdc (250 Vac)	0,68 $\mu$ F	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A6684-****	–	350	320
	1,0 $\mu$ F	13,5 $\times$ 23,0 $\times$ 31,5	B32654-A6105-****	–	250	260
	1,5 $\mu$ F	18,0 $\times$ 27,5 $\times$ 31,5	B32654-A6155-****	–	–	200
1000 Vdc (250 Vac)	0,22 $\mu$ F	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A0224-****	–	350	320
	0,33 $\mu$ F	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A0334-****	–	350	320
	0,47 $\mu$ F	14,0 $\times$ 24,5 $\times$ 31,5	B32654-A0474-****	–	–	260
	0,68 $\mu$ F	18,0 $\times$ 27,5 $\times$ 31,5	B32654-A0684-****	–	–	200
1250 Vdc (500 Vac)	0,10 $\mu$ F	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A7104-****	–	350	320
	0,15 $\mu$ F	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A7154-****	–	350	320
	0,22 $\mu$ F	14,0 $\times$ 24,5 $\times$ 31,5	B32654-A7224-****	–	–	260
	0,33 $\mu$ F	18,0 $\times$ 27,5 $\times$ 31,5	B32654-A7334-****	–	–	200
1600 Vdc (500 Vac)	47 nF	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A1473-****	–	350	320
	68 nF	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A1683-****	–	350	320
	0,10 $\mu$ F	14,0 $\times$ 24,5 $\times$ 31,5	B32654-A1104-****	–	–	260
	0,15 $\mu$ F	18,0 $\times$ 27,5 $\times$ 31,5	B32654-A1154-****	–	–	200
2000 Vdc (700 Vac)	22 nF	11,0 $\times$ 21,0 $\times$ 31,5	B32654-A2223-****	–	350	320
	33 nF	13,5 $\times$ 23,0 $\times$ 31,5	B32654-A2333-****	–	250	260
	47 nF	18,0 $\times$ 27,5 $\times$ 31,5	B32654-A2473-****	–	–	200
	68 nF	19,0 $\times$ 30,0 $\times$ 31,5	B32654-A2683-****	–	–	180

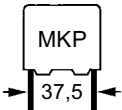
Capacitance tolerance:  $\pm 10\% \hat{=}$  K,  $\pm 5\% \hat{=}$  J, ( $\pm 3,5\%$  upon request)

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.: B32654-A3155-K3

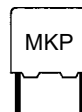

**B 32 656**
**Ordering codes and packing units, lead spacing 37,5 mm**

$V_R$ ( $V_{rms}$ $f \leq 1$ kHz)	$C_R$	Maximum dimensions $b \times h \times l$ (mm)	Ordering code <sup>1)</sup>	Packing units (pcs)
				Untaped
1000 Vdc (500 Vac)	0,47 $\mu$ F	14,0 $\times$ 25,0 $\times$ 42,0	B32656-A474-+***	56
	0,68 $\mu$ F	16,0 $\times$ 28,5 $\times$ 42,0	B32656-A684-+***	48
	1,0 $\mu$ F	20,0 $\times$ 39,5 $\times$ 42,0	B32656-A105-+***	32
1250 Vdc (500 Vac)	0,22 $\mu$ F	14,0 $\times$ 25,0 $\times$ 42,0	B32656-A7224-+***	56
	0,33 $\mu$ F	16,0 $\times$ 28,5 $\times$ 42,0	B32656-A7334-+***	48
	0,47 $\mu$ F	18,0 $\times$ 32,5 $\times$ 42,0	B32656-A7474-+***	48
	0,68 $\mu$ F	20,0 $\times$ 39,5 $\times$ 42,0	B32656-A7684-+***	32
1600 Vdc (600 Vac)	0,10 $\mu$ F	12,0 $\times$ 22,0 $\times$ 42,0	B32656-J1104-+***	72
	0,15 $\mu$ F	14,0 $\times$ 25,0 $\times$ 42,0	B32656-J1154-+***	56
	0,22 $\mu$ F	16,0 $\times$ 28,5 $\times$ 42,0	B32656-J1224-+***	48
2000 Vdc (700 Vac)	0,10 $\mu$ F	14,0 $\times$ 25,0 $\times$ 42,0	B32656-J2104-+***	56
	0,15 $\mu$ F	18,0 $\times$ 32,5 $\times$ 42,0	B32656-J2154-+***	48
	0,22 $\mu$ F	20,0 $\times$ 39,5 $\times$ 42,0	B32656-J2224-+***	32

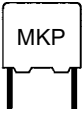
 Capacitance tolerance:  $\pm 10\% \hat{=} K, \pm 5\% \hat{=} J, (\pm 3,5\% \text{ upon request})$ 

1) + Code letter for capacitance tolerance

For capacitors with 3.2 mm lead length, append code number "3" to the tolerance code, e.g.: B32656-A474-K3


**Technical data**

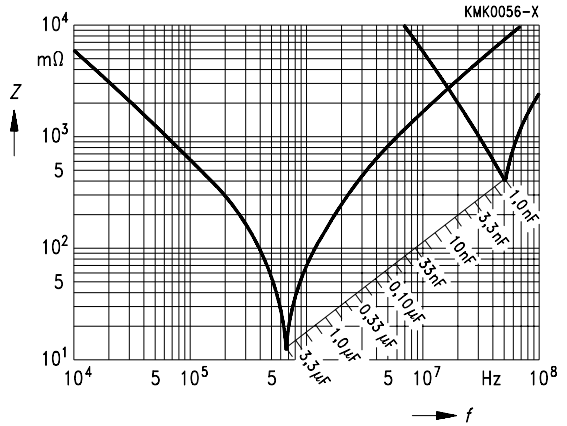
Climatic category in accordance with IEC 60068-1	55/100/56			
Lower category temperature $T_{\min}$	– 55 °C			
Upper category temperature $T_{\max}$	+ 100 °C			
Damp heat test	56 days/40 °C/93 % relative humidity			
Limit values after damp heat test	Capacitance change $ \Delta C/C $	≤ 3 %		
	Dissipation 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 $R_{\text{is}}$ or time constant $\tau = C_{\text{R}} \cdot R_{\text{is}}$	≥ 50 % of minimum as-delivered values		
Reliability:				
Reference conditions	0,5 · $V_{\text{R}}$ ; 40 °C			
Failure rate	1 · 10 <sup>-9</sup> /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 $R_{\text{is}}$	< 1500 MΩ ( $C_{\text{R}} \leq 0,33 \mu\text{F}$ )		
	or time constant $\tau = C_{\text{R}} \cdot R_{\text{is}}$	< 500 s ( $C_{\text{R}} > 0,33 \mu\text{F}$ )		
DC test voltage	1,6 · $V_{\text{R}}$ , 2 s			
Category voltage $V_{\text{C}}$	$T \leq 85 \text{ °C}$	$V_{\text{C}} = 1,0 \cdot V_{\text{R}}$	$V_{\text{C,rms}} = 1,0 \cdot V_{\text{rms}}$	
Operation with dc voltage or ac voltage $V_{\text{rms}}$ up to 1 kHz	$T \leq 100 \text{ °C}$	$V_{\text{C}} = 0,8 \cdot V_{\text{R}}$	$V_{\text{C,rms}} = 0,8 \cdot V_{\text{rms}}$	
Operating voltage for short operating periods	$T \leq 85 \text{ °C}$	$V = 1,25 \cdot V_{\text{C}}$ , max. 2000 h	$V = 1,0 \cdot V_{\text{C,rms}}$ , max. 2000 h	
	$T \leq 100 \text{ °C}$	$V = 1,25 \cdot V_{\text{C}}$ , max. 2000 h	$V = 1,0 \cdot V_{\text{C,rms}}$ , max. 2000 h	
Dissipation factor $\tan \delta$ (in 10 <sup>-3</sup> ) at 20 °C (upper limit values)		$C_{\text{R}} \leq 0,1 \mu\text{F}$	$0,1 \mu\text{F} < C_{\text{R}} \leq 1 \mu\text{F}$	$C_{\text{R}} > 1 \mu\text{F}$
	at 1 kHz	–	0,5	0,5
	10 kHz	–	0,8	1,5
	100 kHz	5,0	–	–
Insulation resistance $R_{\text{is}}$ or time constant $\tau = C_{\text{R}} \cdot R_{\text{is}}$ at 20 °C, rel. humidity ≤ 65 % (minimum as-delivered values)	$C_{\text{R}} \leq 0,33 \mu\text{F}$	$C_{\text{R}} > 0,33 \mu\text{F}$		
	100 GΩ	30 000 s		



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



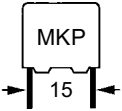
### Pulse handling capability

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				
	10 mm	15 mm	22,5 mm	27,5 mm	37,5 mm
250 Vdc	–	200	120	50	–
400 Vdc	–	300	150	70	–
630 Vdc	–	350	210	100	–
1000 Vdc	–	400	350	225	90
1250 Vdc	2000	800	750	500	140
1600 Vdc (500 Vac)	–	1500	1000	700	–
1600 Vdc (600 Vac)	–	–	–	–	210
1600 Vdc (700 Vac)	–	1900	–	–	–
2000 Vdc (700 Vac)	–	2200	1400	900	200
2000 Vdc (1000 Vac)	–	–	2000	–	–

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				
	10 mm	15 mm	22,5 mm	27,5 mm	37,5 mm
250 Vdc	–	100 000	60 000	25 000	–
400 Vdc	–	240 000	120 000	55 000	–
630 Vdc	–	340 000	255 000	120 000	–
1000 Vdc	–	800 000	675 000	450 000	180 000
1250 Vdc	6 400 000	2 000 000	1 875 000	1 250 000	350 000
1600 Vdc (500 Vac)	–	4 800 000	3 200 000	2 200 000	–
1600 Vdc (600 Vac)	–	–	–	–	672 000
1600 Vdc (700 Vac)	–	6 100 000	–	–	–
2000 Vdc (700 Vac)	–	8 800 000	5 600 000	3 600 000	800 000
2000 Vdc (1000 Vac)	–	–	10 000 000	–	–

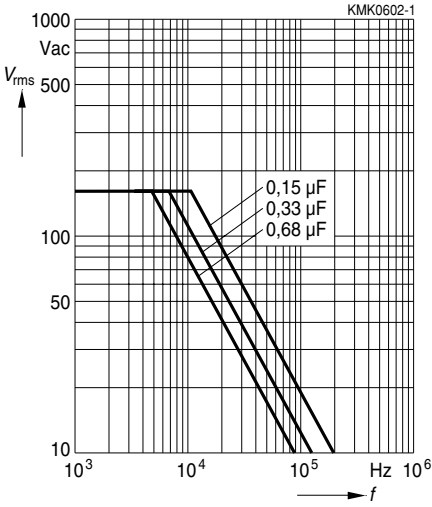


B 32 652

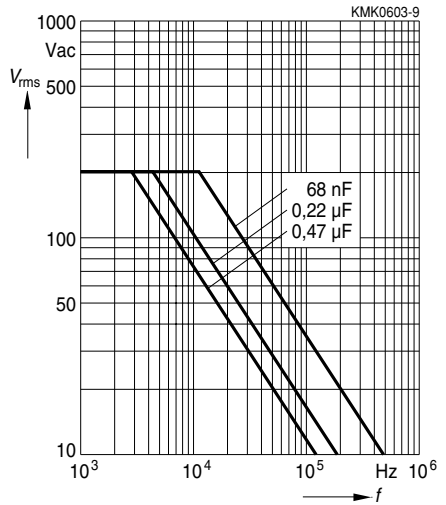
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 15 mm

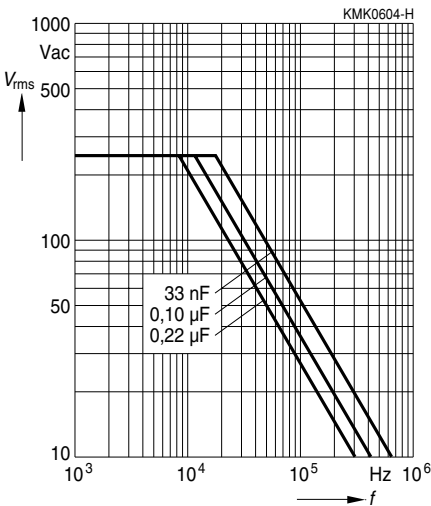
250 Vdc/ 160 Vac



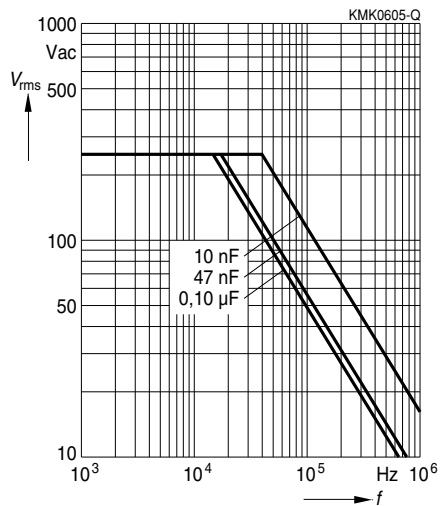
400 Vdc/ 200 Vac

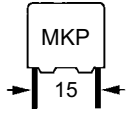


630 Vdc/ 250 Vac



1000 Vdc/ 250 Vac

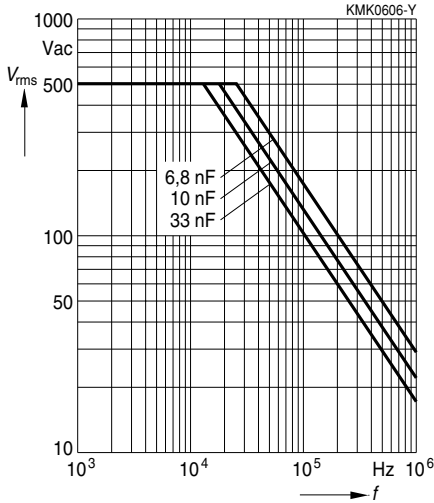




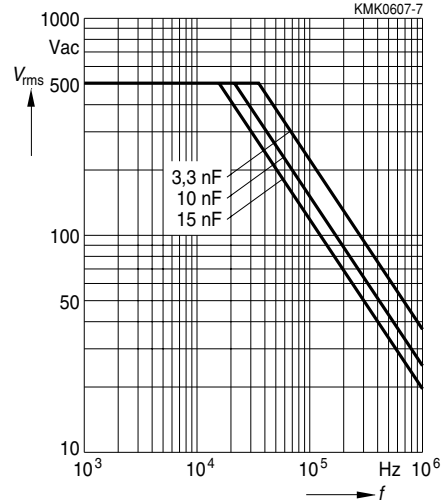
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 15 mm

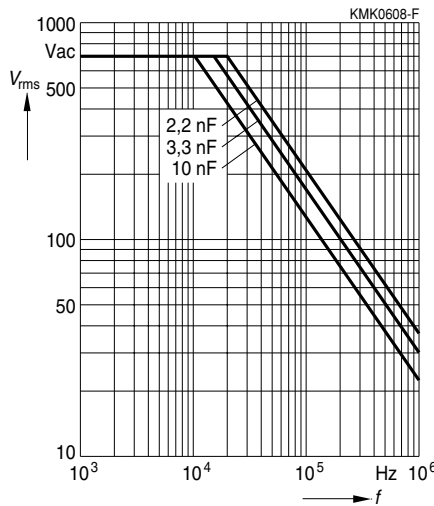
1250 Vdc/ 500 Vac



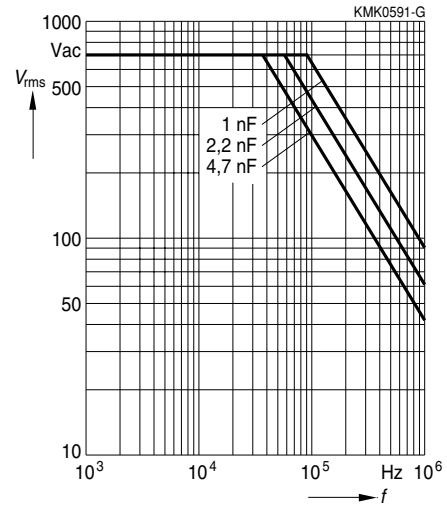
1600 Vdc/ 500 Vac



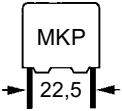
1600 Vdc/ 700 Vac



2000 Vdc/ 700 Vac





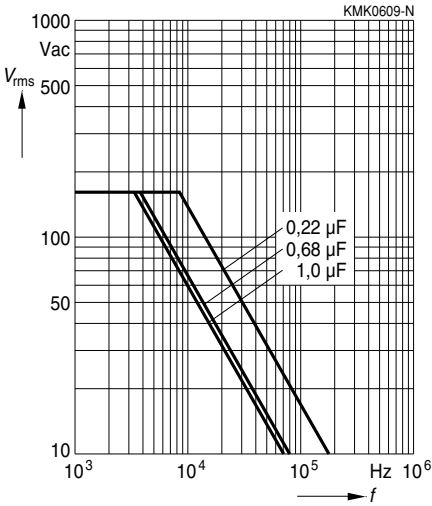


B 32 653

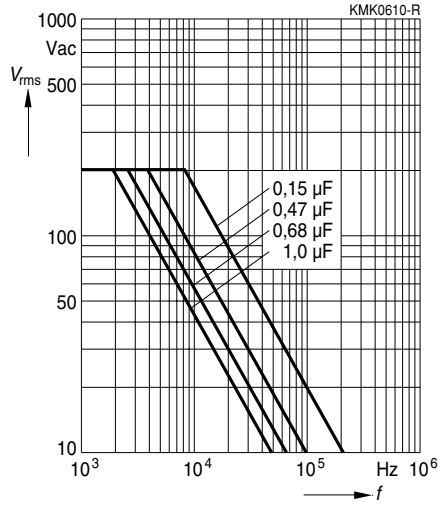
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 22,5 mm

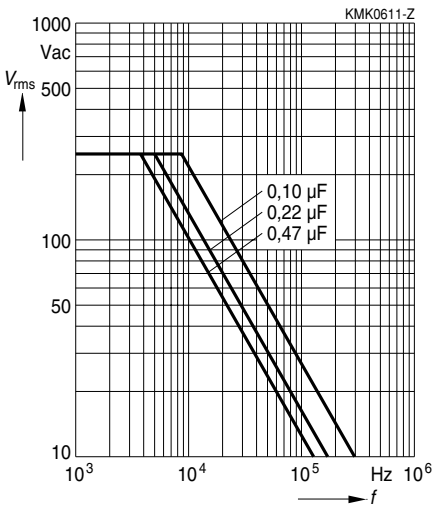
250 Vdc/ 160 Vac



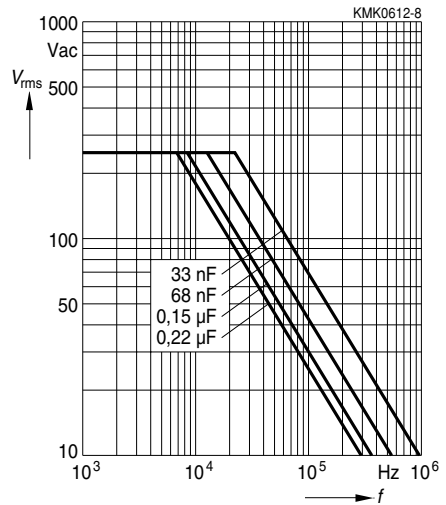
400 Vdc/ 200 Vac

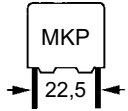


630 Vdc/ 250 Vac



1000 Vdc/ 250 Vac

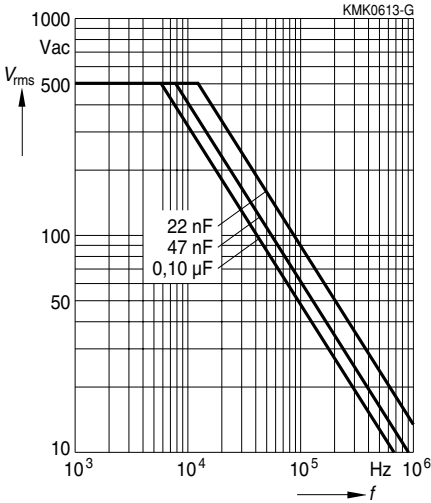




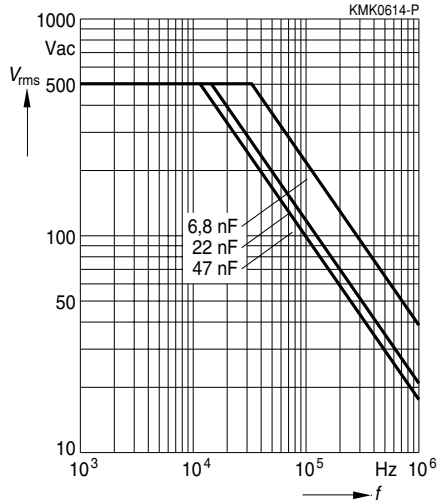
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 22,5 mm

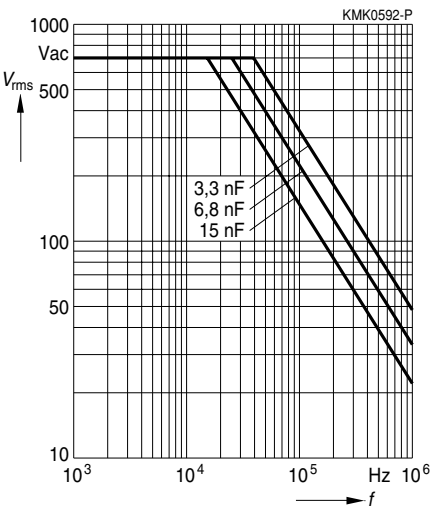
1250 Vdc/ 500 Vac



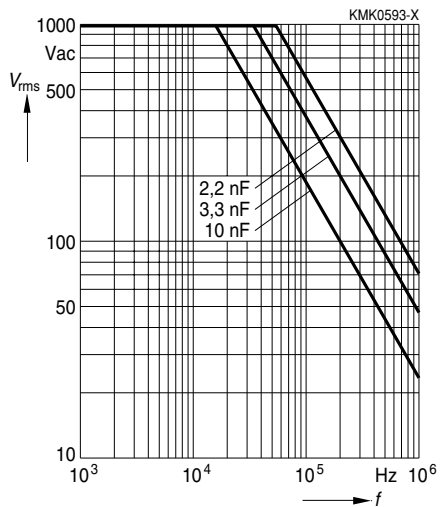
1600 Vdc/ 500 Vac

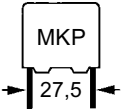


2000 Vdc/ 700 Vac



2000 Vdc/ 1000 Vac



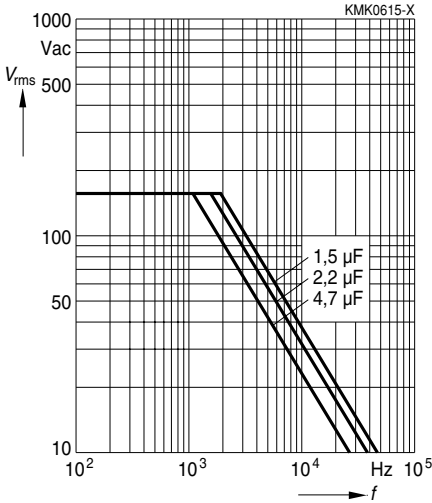


B 32 654

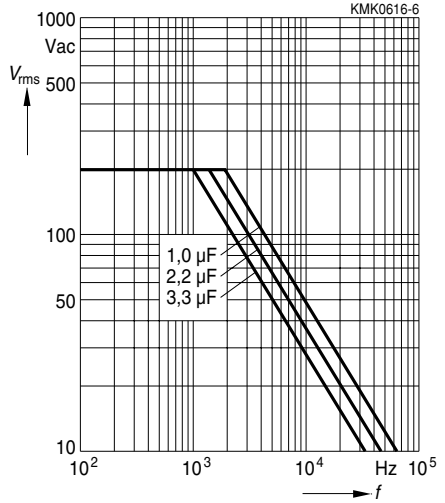
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 27,5 mm

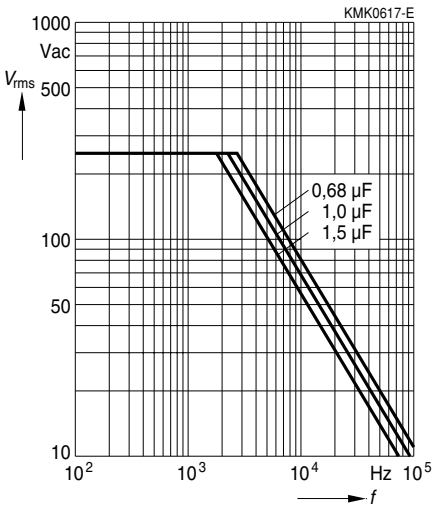
250 Vdc/ 160 Vac



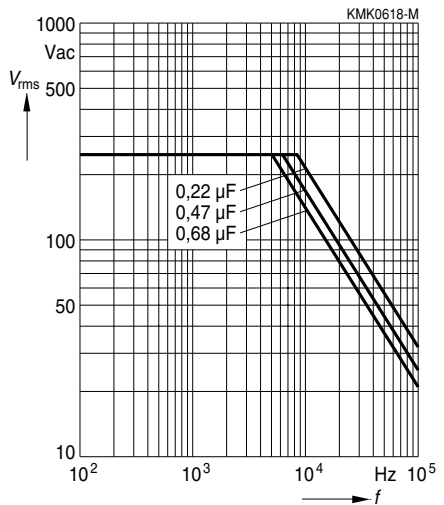
400 Vdc/ 200 Vac

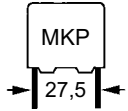


630 Vdc/ 250 Vac



1000 Vdc/ 250 Vac

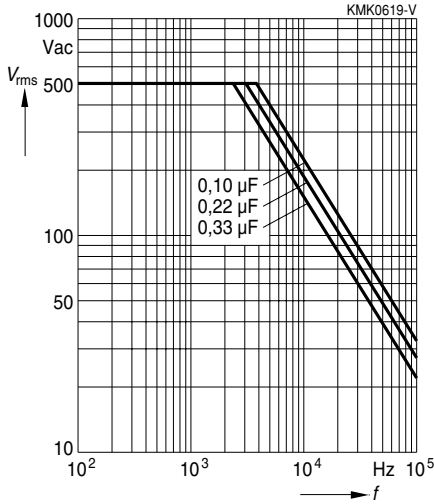




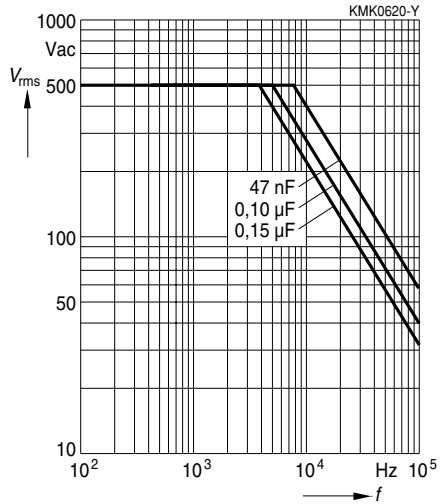
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 27,5 mm

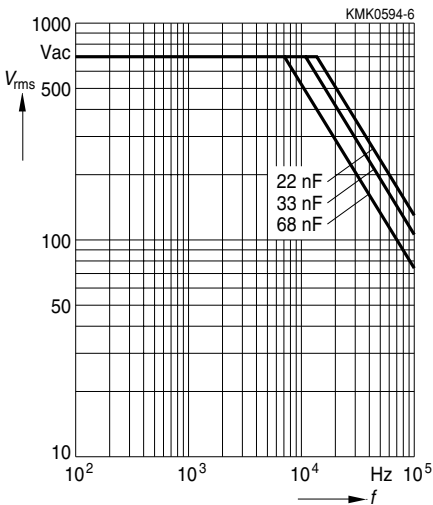
1250 Vdc/ 500 Vac

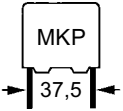


1600 Vdc/ 500 Vac



2000 Vdc/ 700 Vac



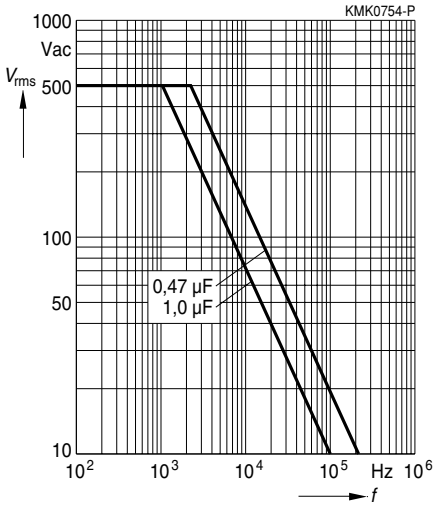


B 32 656

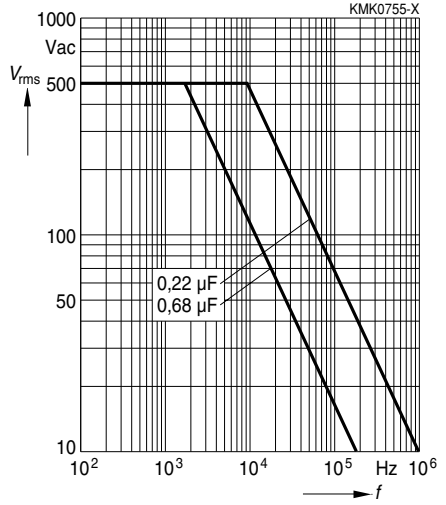
Permissible ac voltage  $V_{rms}$  versus frequency  $f$

Lead spacing 37,5 mm

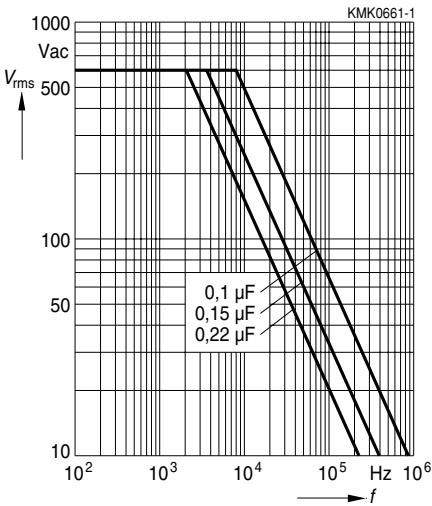
1000 Vdc/ 500 Vac



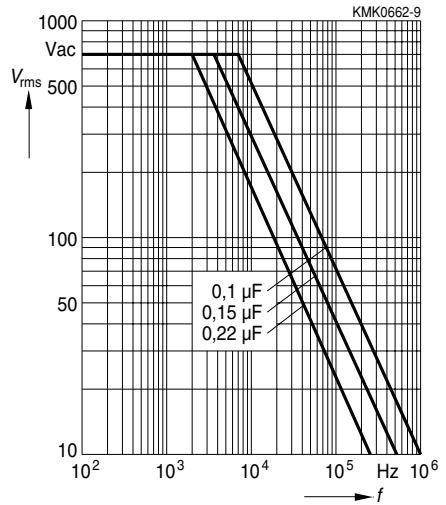
1250 Vdc/ 500 Vac

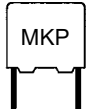


1600 Vdc/ 600 Vac



2000 Vdc/700 Vac

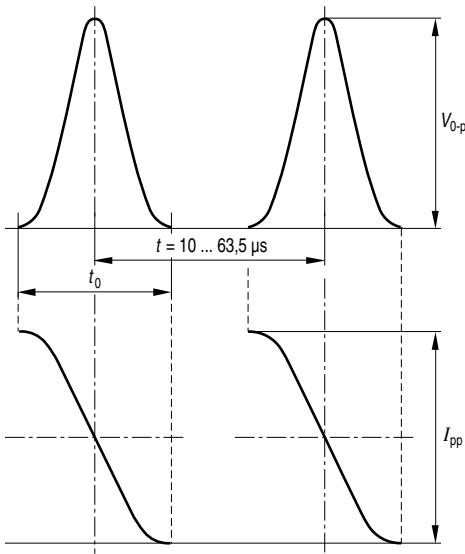




**Flyback application**

**Permissible voltage and current / waveform**

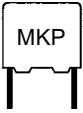
Permissible current  $I_{pp}$  versus frequency for a duty cycle of 20 % ( $t_0/t = 0,2$ ):



KMK0720-5

Approximation formular for duty cycle higher than 20 %:

$$I'_{pp} = I_{pp} \sqrt{\frac{t_0^3}{t_0^3}}$$



B 32 651 ...

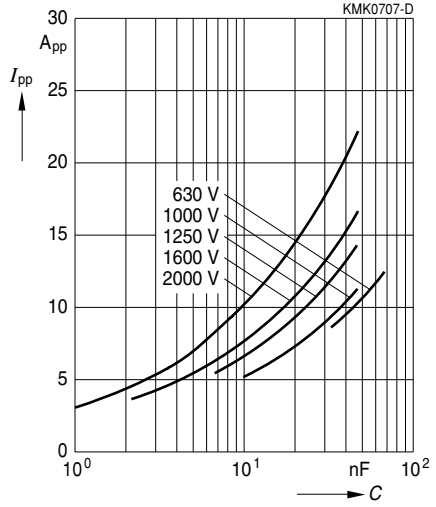
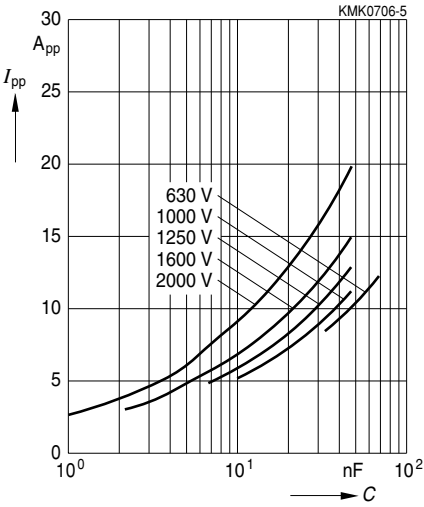
B 32 656

**Flyback application**

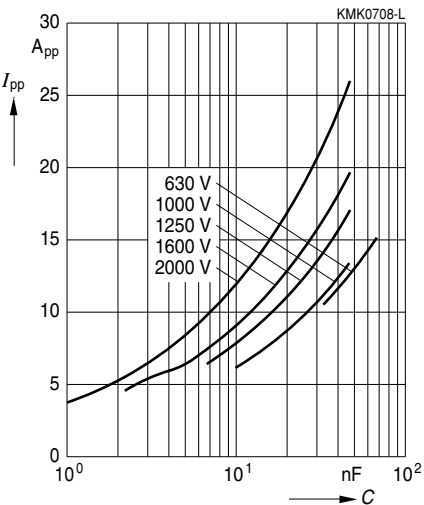
**Permissible current  $I_{pp}$  versus rated capacitance  $C_R$**

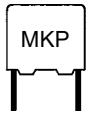
Frequency = 15,75 kHz

Frequency = 31,5 kHz

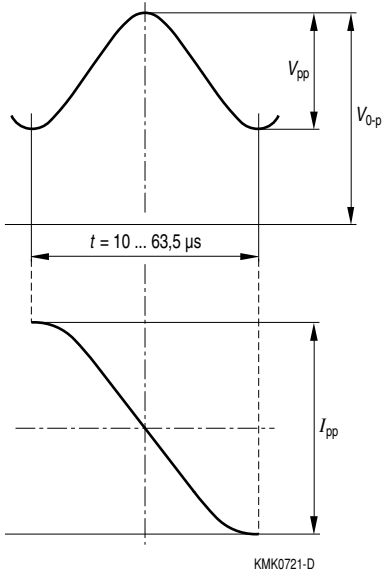


Frequency = 95 kHz

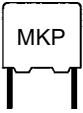




**S-correction application**  
**Permissible voltage and current / waveform**







B 32 651 ...

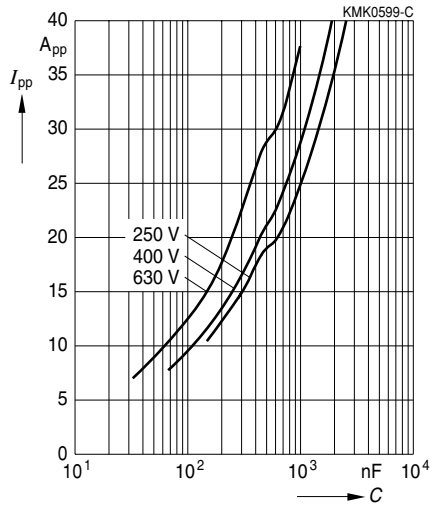
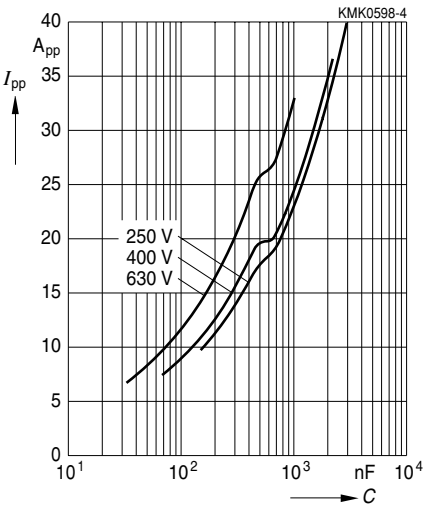
B 32 656

### S-correction application

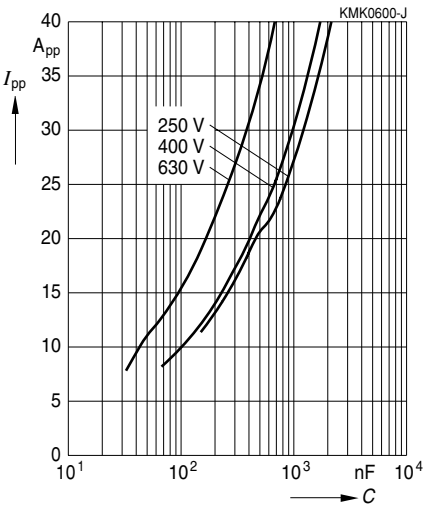
Permissible current  $I_{pp}$  versus rated capacitance  $C_R$

Frequency = 15,75 kHz

Frequency = 31,75 kHz



Frequency = 95 kHz



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