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

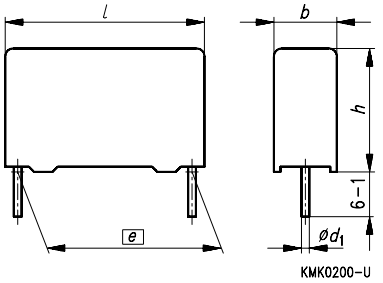
- Parallel wire leads, tinned
- Also available with (3,2 ± 0,3) mm lead length

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

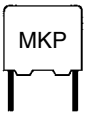
Lead spacing e ± 0,4	Diameter d_1	Type
10,0	0,6	B 32 651
15,0	0,8	B 32 652
22,5	0,8	B 32 653
27,5	0,8	B 32 654
37,5	1,0	B 32 656

Overview of available types

Lead spacing	10 mm[1)]	15 mm
Type	B 32 651	B 32 652
Page	136	137

1,0 nF										2000 Vdc 700 Vac
1,5 nF										
2,2 nF	1250 Vdc 450 Vac								1600 Vdc 700 Vac	
3,3 nF								1600 Vdc 500 Vac		
4,7 nF										
6,8 nF							1250 Vdc 500 Vac			
10 nF						1000 Vdc 250 Vac				
15 nF										
22 nF										
33 nF					630 Vdc 250 Vac					
47 nF										
68 nF				400 Vdc 200 Vac						
0,10 µF										
0,15 µF			250 Vdc 160 Vac							
0,22 µF										
0,33 µF										
0,47 µF										
0,68 µF										
1,0 µF										

1) Additional values on request



B 32 651 …
B 32 656

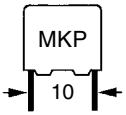
Overview of available types

Lead spacing	22,5 mm							
Type	B 32 653							
Page	139							
1,0 nF								
1,5 nF								
2,2 nF								2000 Vdc 1000 Vac
3,3 nF							2000 Vdc 700 Vac	
4,7 nF								
6,8 nF						1600 Vdc 500 Vac		
10 nF								
15 nF								
22 nF					1250 Vdc 500 Vac			
33 nF				1000 Vdc 250 Vac				
47 nF								
68 nF								
0,10 µF			630 Vdc 250 Vac					
0,15 µF		400 Vdc 200 Vac						
0,22 µF	250 Vdc 160 Vac							
0,33 µF								
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	141							142			
22 nF							2000 Vdc 700 Vac				
33 nF											
47 nF						1600 Vdc 500 Vac					
68 nF											
0,10 µF					1250 Vdc 500 Vac					1600 Vdc 600 Vac	2000 Vdc 700 Vac
0,15 µF											
0,22 µF				1000 Vdc 250 Vac					1250 Vdc 500 Vac		
0,33 µF											
0,47 µF								1000 Vdc 500 Vac			
0,68 µF			630 Vdc 250 Vac								
1,0 µF		400 Vdc 200 Vac									
1,5 µF	250 Vdc 160 Vac										
2,2 µF											
3,3 µF											
4,7 µF											



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
1250 Vdc[2]	2,2 nF	4,0 × 9,0 × 13,0	B32651-A7222-+***	1000	1700	1000
(450 Vac)	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: ±10 % ≙ K, ±5 % ≙ J, (±3,5 % upon request)

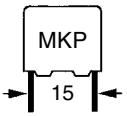
1) + Code letter for capacitance tolerance
*** Code number for packing: Ammo pack = 289, reel = 189
The ordering code for untaped components ends after the tolerance code letter.
For capacitors with 3,2 mm lead length, append code number "3" to the tolerance code, e.g: B32651-A7222-K3

2) For pulse loads (pulse width ≤ 1000 µs), 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[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
250 Vdc	0,15 µF	5,0 × 10,5 × 18,0	B32652-A3154-+***	1170	1300	1000
(160 Vac)	0,22 µF	6,0 × 11,0 × 18,0	B32652-A3224-+***	960	1100	1000
	0,33 µF	7,0 × 12,5 × 18,0	B32652-A3334-+***	830	900	1000
	0,47 µF	8,5 × 14,5 × 18,0	B32652-A3474-+***	680	700	500
	0,68 µF	9,0 × 17,5 × 18,0	B32652-A3684-+***	640	700	500
400 Vdc	68 nF	5,0 × 10,5 × 18,0	B32652-A4683-+***	1170	1300	1000
(200 Vac)	0,10 µF	5,0 × 10,5 × 18,0	B32652-A4104-+***	1170	1300	1000
	0,15 µF	6,0 × 11,0 × 18,0	B32652-A4154-+***	960	1100	1000
	0,22 µF	7,0 × 12,5 × 18,0	B32652-A4224-+***	830	900	1000
	0,33 µF	8,5 × 14,5 × 18,0	B32652-A4334-+***	680	700	500
	0,47 µF	9,0 × 17,5 × 18,0	B32652-A4474-+***	640	700	500
630 Vdc	33 nF	5,0 × 10,5 × 18,0	B32652-A6333-+***	1170	1300	1000
(250 Vac)	47 nF	5,0 × 10,5 × 18,0	B32652-A6473-+***	1170	1300	1000
	68 nF	6,0 × 11,0 × 18,0	B32652-A6683-+***	960	1100	1000
	0,10 µF	7,0 × 12,5 × 18,0	B32652-A6104-+***	830	900	1000
	0,15 µF	8,5 × 14,5 × 18,0	B32652-A6154-+***	680	700	500
	0,22 µF	9,0 × 17,5 × 18,0	B32652-A6224-+***	640	700	500
1000 Vdc	10 nF	5,0 × 10,5 × 18,0	B32652-A0103-+***	1170	1300	1000
(250 Vac)	15 nF	5,0 × 10,5 × 18,0	B32652-A0153-+***	1170	1300	1000
	22 nF	5,0 × 10,5 × 18,0	B32652-A0223-+***	1170	1300	1000
	33 nF	6,0 × 11,0 × 18,0	B32652-A0333-+***	960	1100	1000
	47 nF	7,0 × 12,5 × 18,0	B32652-A0473-+***	830	900	1000
	68 nF	8,5 × 14,5 × 18,0	B32652-A0683-+***	680	700	500
	0,10 µF	9,0 × 17,5 × 18,0	B32652-A0104-+***	640	700	500
1250 Vdc	6,8 nF	5,0 × 10,5 × 18,0	B32652-A7682-+***	1170	1300	1000
(500 Vac)	10 nF	6,0 × 11,0 × 18,0	B32652-A7103-+***	960	1100	1000
	15 nF	7,0 × 12,5 × 18,0	B32652-A7153-+***	830	900	1000
	22 nF	8,5 × 14,5 × 18,0	B32652-A7223-+***	680	700	500
	33 nF	9,0 × 17,5 × 18,0	B32652-A7333-+***	640	700	500
1600 Vdc	3,3 nF	5,0 × 10,5 × 18,0	B32652-A1332-+***	1170	1300	1000
(500 Vac)	4,7 nF	6,0 × 11,0 × 18,0	B32652-A1472-+***	960	1100	1000
	6,8 nF	7,0 × 12,5 × 18,0	B32652-A1682-+***	830	900	1000
	10 nF	8,5 × 14,5 × 18,0	B32652-A1103-+***	680	700	500
	15 nF	9,0 × 17,5 × 18,0	B32652-A1153-+***	640	700	500

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

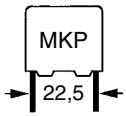


Ordering codes and packing units, lead spacing 15 mm

V_R (V_{rms} $f \leq 1$ kHz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
1600 Vdc[2] (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: ±10 % ≙ K, ±5 % ≙ J, (±3,5 % upon request)

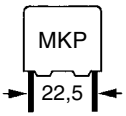
1) + Code letter for capacitance tolerance
*** Code number for packing: Ammo pack = 289, reel = 189
The ordering code for untaped components ends after the tolerance code letter.
For capacitors with 3,2 mm lead length, append code number "3" to the tolerance code, e.g: B32652-J1222-K3
2) Additional capacitance 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[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
250 Vdc (160 Vac)	0,22 µF	6,0 × 15,0 × 26,5	B32653-A3224-+***	680	700	720
	0,33 µF	6,0 × 15,0 × 26,5	B32653-A3334-+***	680	700	720
	0,47 µF	7,0 × 16,0 × 26,5	B32653-A3474-+***	580	600	630
	0,68 µF	8,5 × 16,5 × 26,5	B32653-A3684-+***	480	500	510
	1,0 µF	10,5 × 16,5 × 26,5	B32653-A3105-+***	390	400	540
400 Vdc (200 Vac)	0,15 µF	6,0 × 15,0 × 26,5	B32653-A4154-+***	680	700	720
	0,22 µF	6,0 × 15,0 × 26,5	B32653-A4224-+***	680	700	720
	0,33 µF	7,0 × 16,0 × 26,5	B32653-A4334-+***	580	600	630
	0,47 µF	8,5 × 16,5 × 26,5	B32653-A4474-+***	480	500	510
	0,68 µF	10,5 × 16,5 × 26,5	B32653-A4684-+***	390	400	540
	1,0 µF	11,0 × 20,5 × 26,5	B32653-A4105-+***	370	350	510
630 Vdc (250 Vac)	0,10 µF	6,0 × 15,0 × 26,5	B32653-A6104-+***	680	700	720
	0,15 µF	6,0 × 15,0 × 26,5	B32653-A6154-+***	680	700	720
	0,22 µF	8,5 × 16,5 × 26,5	B32653-A6224-+***	480	500	510
	0,33 µF	10,5 × 16,5 × 26,5	B32653-A6334-+***	390	400	540
	0,47 µF	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 µF	8,5 × 16,5 × 26,5	B32653-A0104-+***	480	500	510
	0,15 µF	10,5 × 16,5 × 26,5	B32653-A0154-+***	390	400	540
	0,22 µF	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	720
	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 µF	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	720
	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

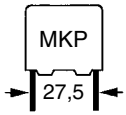


Ordering codes and packing units, lead spacing 22,5 mm

V_R (V_{rms} $f \leq 1$ kHz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	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: ±10 % ≙ K, ±5 % ≙ J, (±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

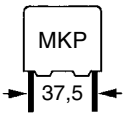


Ordering codes and packing units, lead spacing 27,5 mm

V_R (V_{rms} $f \leq 1$ kHz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
250 Vdc (160 Vac)	1,5 µF	11,0 × 21,0 × 31,5	B32654-A3155-+***	–	350	320
	2,2 µF	12,5 × 21,5 × 31,5	B32654-A3225-+***	–	300	280
	3,3 µF	15,0 × 24,5 × 31,5	B32654-A3335-+***	–	–	240
	4,7 µF	18,0 × 27,5 × 31,5	B32654-A3475-+***	–	–	200
400 Vdc (200 Vac)	1,0 µF	11,0 × 21,0 × 31,5	B32654-A4105-+***	–	350	320
	1,5 µF	12,5 × 21,5 × 31,5	B32654-A4155-+***	–	300	280
	2,2 µF	14,0 × 24,5 × 31,5	B32654-A4225-+***	–	–	260
	3,3 µF	19,0 × 30,0 × 31,5	B32654-A4335-+***	–	–	180
630 Vdc (250 Vac)	0,68 µF	11,0 × 21,0 × 31,5	B32654-A6684-+***	–	350	320
	1,0 µF	13,5 × 23,0 × 31,5	B32654-A6105-+***	–	250	260
	1,5 µF	18,0 × 27,5 × 31,5	B32654-A6155-+***	–	–	200
1000 Vdc (250 Vac)	0,22 µF	11,0 × 21,0 × 31,5	B32654-A0224-+***	–	350	320
	0,33 µF	11,0 × 21,0 × 31,5	B32654-A0334-+***	–	350	320
	0,47 µF	14,0 × 24,5 × 31,5	B32654-A0474-+***	–	–	260
	0,68 µF	18,0 × 27,5 × 31,5	B32654-A0684-+***	–	–	200
1250 Vdc (500 Vac)	0,10 µF	11,0 × 21,0 × 31,5	B32654-A7104-+***	–	350	320
	0,15 µF	11,0 × 21,0 × 31,5	B32654-A7154-+***	–	350	320
	0,22 µF	14,0 × 24,5 × 31,5	B32654-A7224-+***	–	–	260
	0,33 µF	18,0 × 27,5 × 31,5	B32654-A7334-+***	–	–	200
1600 Vdc (500 Vac)	47 nF	11,0 × 21,0 × 31,5	B32654-A1473-+***	–	350	320
	68 nF	11,0 × 21,0 × 31,5	B32654-A1683-+***	–	350	320
	0,10 µF	14,0 × 24,5 × 31,5	B32654-A1104-+***	–	–	260
	0,15 µF	18,0 × 27,5 × 31,5	B32654-A1154-+***	–	–	200
2000 Vdc (700 Vac)	22 nF	11,0 × 21,0 × 31,5	B32654-A2223-+***	–	350	320
	33 nF	13,5 × 23,0 × 31,5	B32654-A2333-+***	–	250	260
	47 nF	18,0 × 27,5 × 31,5	B32654-A2473-+***	–	–	200
	68 nF	19,0 × 30,0 × 31,5	B32654-A2683-+***	–	–	180

Capacitance tolerance: ±10 % ≙ K, ±5 % ≙ J, (±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



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[1)]	Packing units (pcs) Untaped
1000 Vdc (500 Vac)	0,47 µF	14,0 × 25,0 × 42,0	B32656-A474-+***	56
	0,68 µF	16,0 × 28,5 × 42,0	B32656-A684-+***	48
	1,0 µF	20,0 × 39,5 × 42,0	B32656-A105-+***	32
1250 Vdc (500 Vac)	0,22 µF	14,0 × 25,0 × 42,0	B32656-A7224-+***	56
	0,33 µF	16,0 × 28,5 × 42,0	B32656-A7334-+***	48
	0,47 µF	18,0 × 32,5 × 42,0	B32656-A7474-+***	48
	0,68 µF	20,0 × 39,5 × 42,0	B32656-A7684-+***	32
1600 Vdc (600 Vac)	0,10 µF	12,0 × 22,0 × 42,0	B32656-J1104-+***	72
	0,15 µF	14,0 × 25,0 × 42,0	B32656-J1154-+***	56
	0,22 µF	16,0 × 28,5 × 42,0	B32656-J1224-+***	48
2000 Vdc (700 Vac)	0,10 µF	14,0 × 25,0 × 42,0	B32656-J2104-+***	56
	0,15 µF	18,0 × 32,5 × 42,0	B32656-J2154-+***	48
	0,22 µF	20,0 × 39,5 × 42,0	B32656-J2224-+***	32

Capacitance tolerance: ±10 % ≙ K, ±5 % ≙ J, (±3,5 % 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} Upper category temperature T_{max}	– 55 °C + 100 °C
Damp heat test	56 days/40 °C/93 % relative humidity
Limit values after damp heat test	Capacitance change $\lvert\Delta C/C\rvert$ ≤ 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 or time constant $\tau = C_R \cdot R_{is}$ as-delivered values
Reliability:	
Reference conditions Failure rate	0,5 · V_R; 40 °C 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 Failure due to variation of parameters	Short circuit or open circuit Capacitance change $\lvert\Delta C/C\rvert$ > 10 % Dissipation factor tan δ > 4 · upper limit values Insulation resistance R_{is} < 1500 MΩ ($C_R \le 0{,}33$ µF) or time constant $\tau = C_R \cdot R_{is}$ < 500 s ($C_R > 0{,}33$ µF)
DC test voltage	1,6 · V_R, 2 s

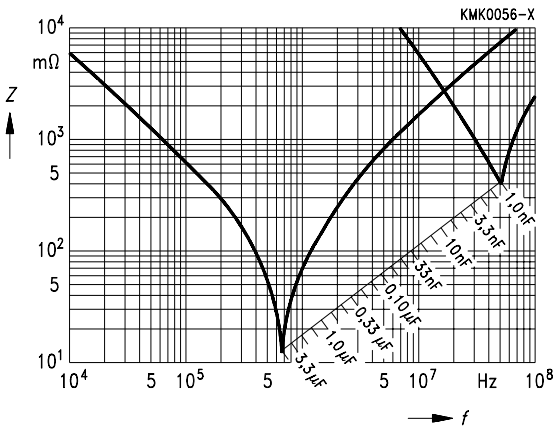
Category voltage V_C Operation with dc voltage or ac voltage V_{rms} up to 1 kHz		
$T \le$ 85 °C	$V_C = 1{,}0 \cdot V_R$	$V_{C,rms} = 1{,}0 \cdot V_{rms}$
$T \le$ 100 °C	$V_C = 0{,}8 \cdot V_R$	$V_{C,rms} = 0{,}8 \cdot V_{rms}$

Operating voltage for short operating periods		
$T \le$ 85 °C	$V = 1{,}25 \cdot V_C$, max. 2000 h	$V = 1{,}0 \cdot V_{C,rms}$, max. 2000 h
$T \le$ 100 °C	$V = 1{,}25 \cdot V_C$, max. 2000 h	$V = 1{,}0 \cdot V_{C,rms}$, max. 2000 h

Dissipation factor tan δ (in 10^{-3}) at 20 °C (upper limit values)	$C_R \le 0{,}1$ µF	0,1 µF < $C_R \le 1$ µF	$C_R > 1$ µF
at 1 kHz	–	0,5	0,5
10 kHz	–	0,8	1,5
100 kHz	5,0	–	–

Insulation resistance R_{is} or time constant $\tau = C_R \cdot R_{is}$ at 20 °C, rel. humidity ≤ 65 % (minimum as-delivered values)	$C_R \le 0{,}33$ µF	$C_R > 0{,}33$ µF
	100 GΩ	30 000 s

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/µs (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	–	–

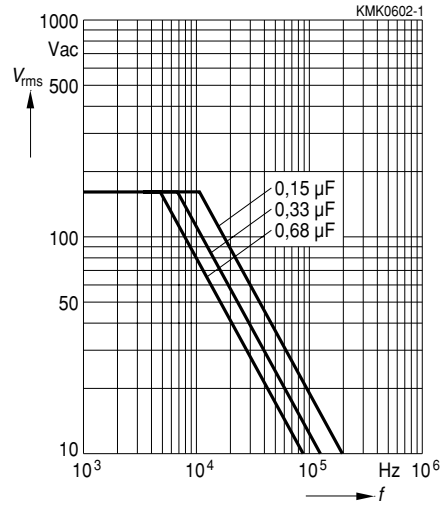
For $V_{pp} < V_R$, the permissible voltage rise rate value V_{pp}/τ may be multiplied by the factor V_R/V_{pp}. Also refer to the calculation example in chapter “General technical information”, page 302.

V_R	Pulse characteristic k_0 in $V^2/\mu s$ (for $V_{pp} \leq V_R$)				
	Lead spacing				
	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	–	–

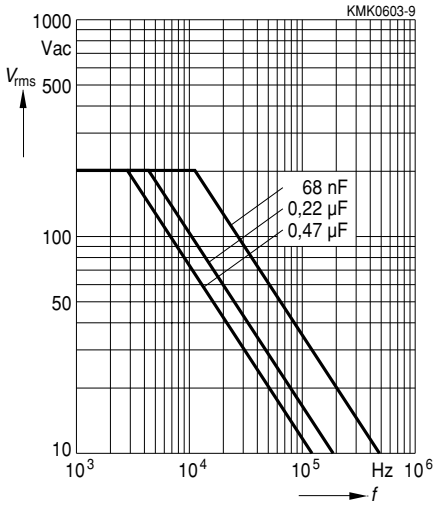
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 15 mm

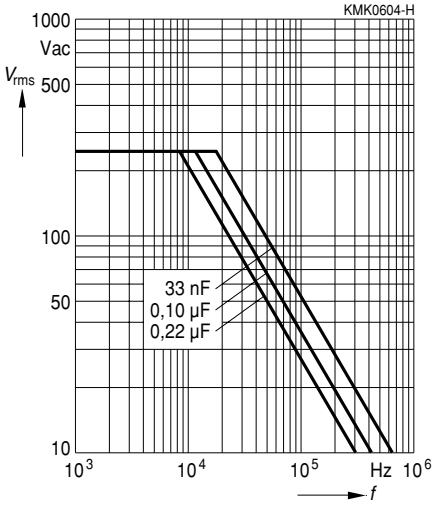
250 Vdc/ 160 Vac



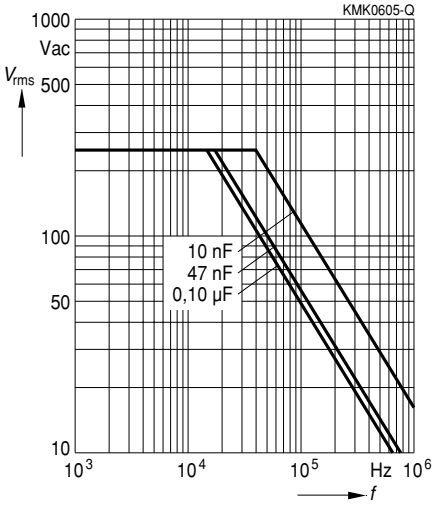
400 Vdc/ 200 Vac



630 Vdc/ 250 Vac



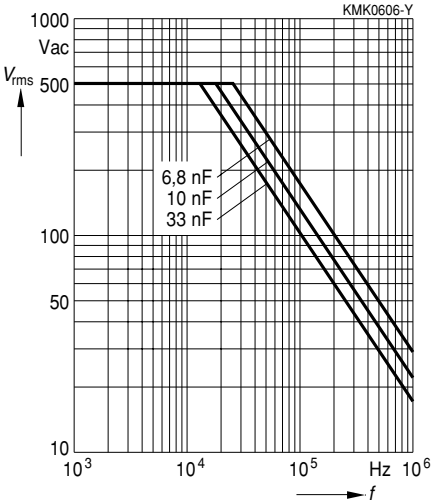
1000 Vdc/ 250 Vac



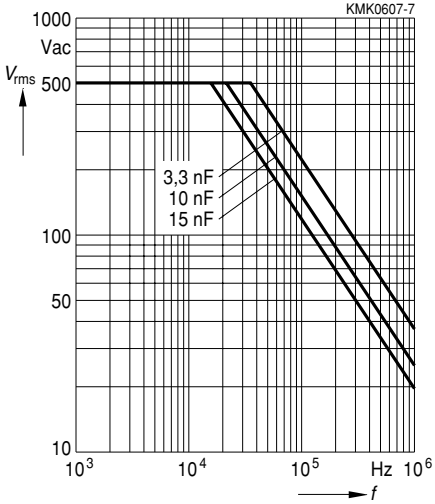
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 15 mm

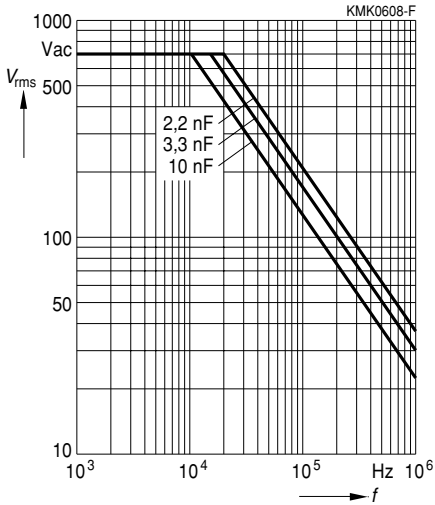
1250 Vdc/ 500 Vac



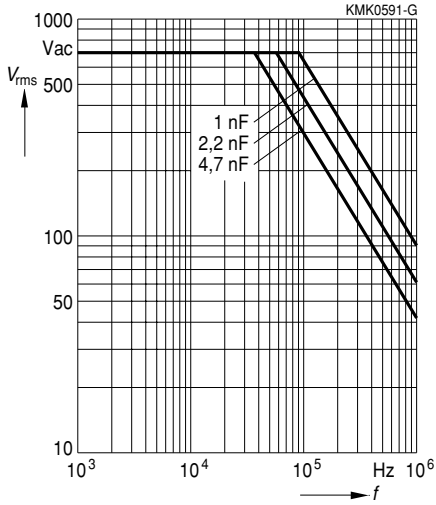
1600 Vdc/ 500 Vac



1600 Vdc/ 700 Vac



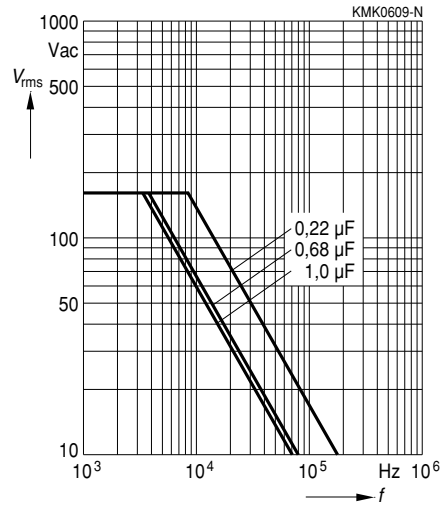
2000 Vdc/ 700 Vac



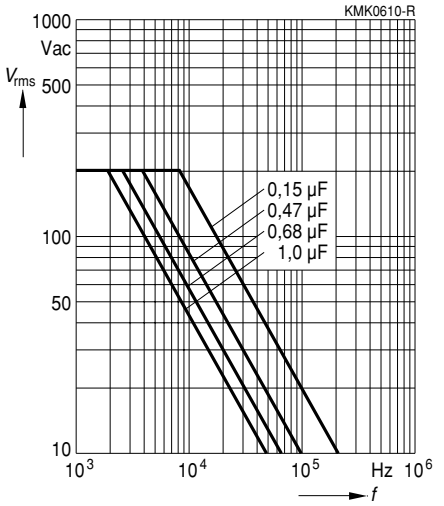
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 22,5 mm

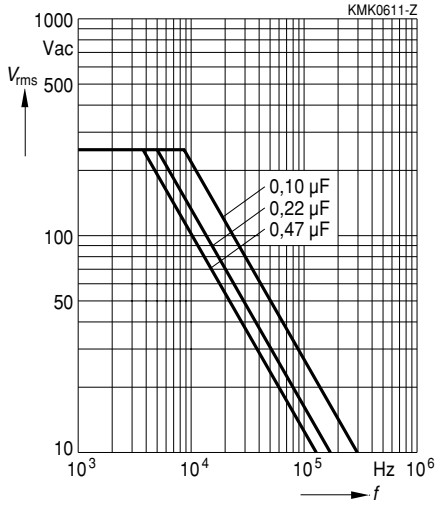
250 Vdc/ 160 Vac



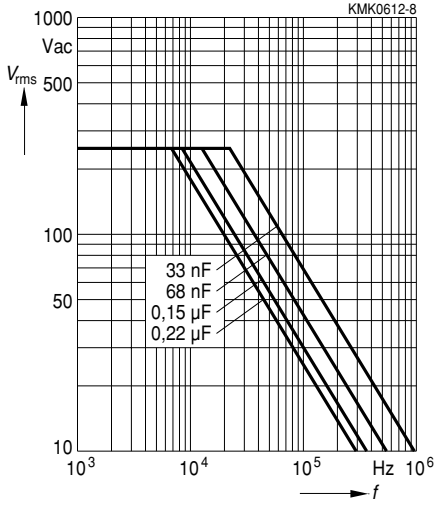
400 Vdc/ 200 Vac



630 Vdc/ 250 Vac



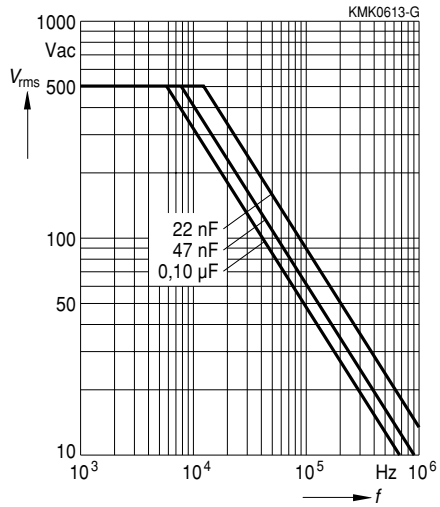
1000 Vdc/ 250 Vac



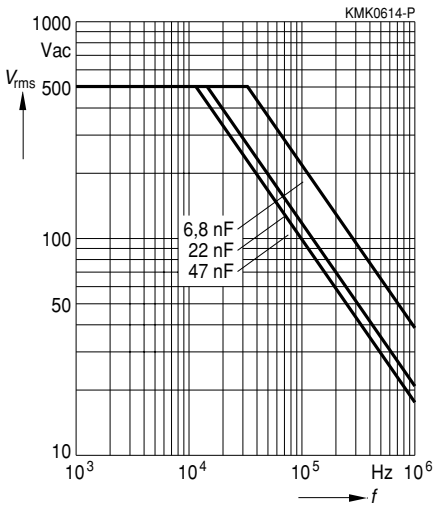
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 22,5 mm

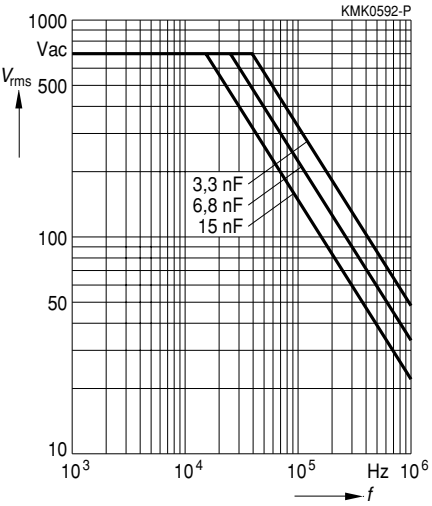
1250 Vdc/ 500 Vac



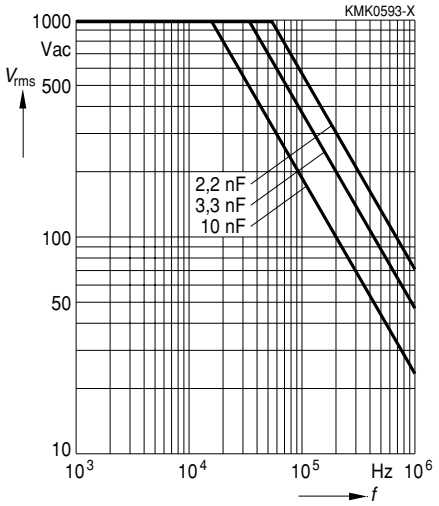
1600 Vdc/ 500 Vac



2000 Vdc/ 700 Vac



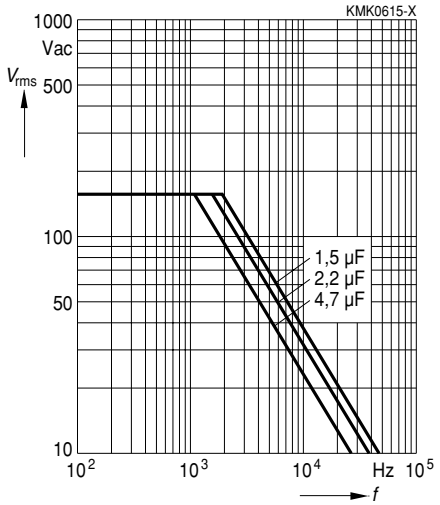
2000 Vdc/ 1000 Vac



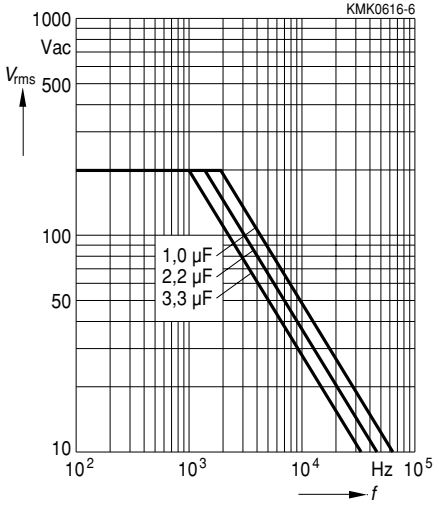
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 27,5 mm

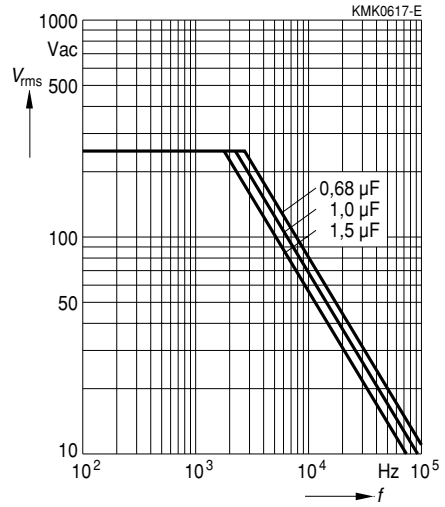
250 Vdc/ 160 Vac



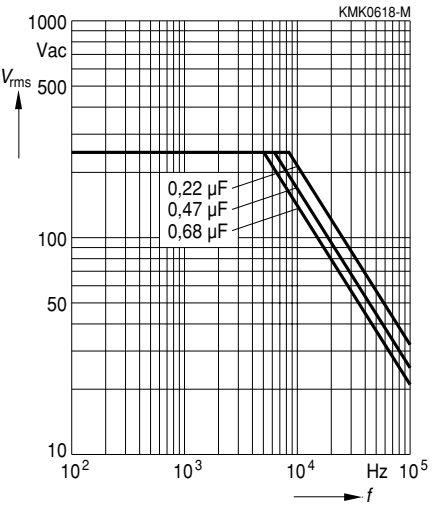
400 Vdc/ 200 Vac



630 Vdc/ 250 Vac



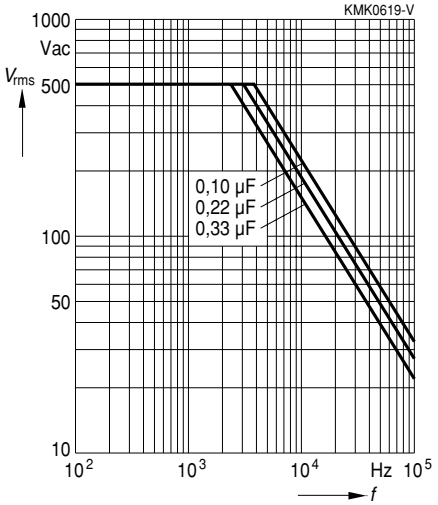
1000 Vdc/ 250 Vac



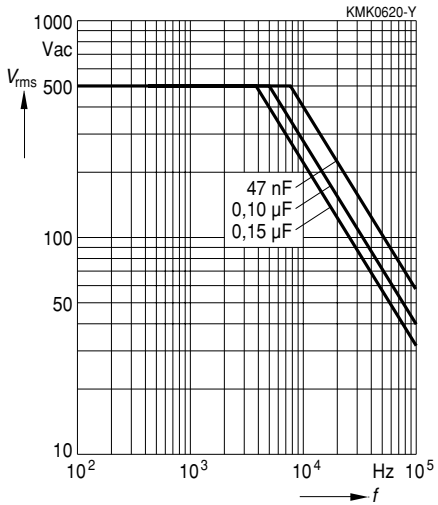
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 27,5 mm

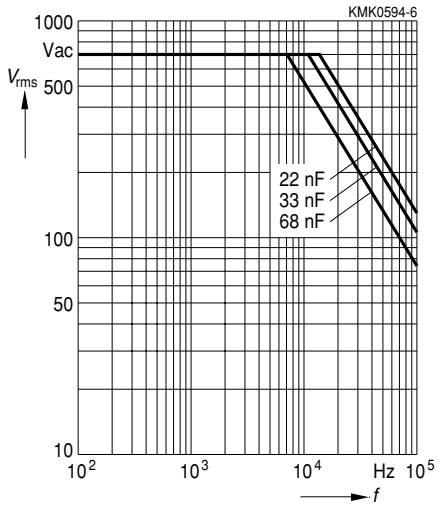
1250 Vdc/ 500 Vac



1600 Vdc/ 500 Vac



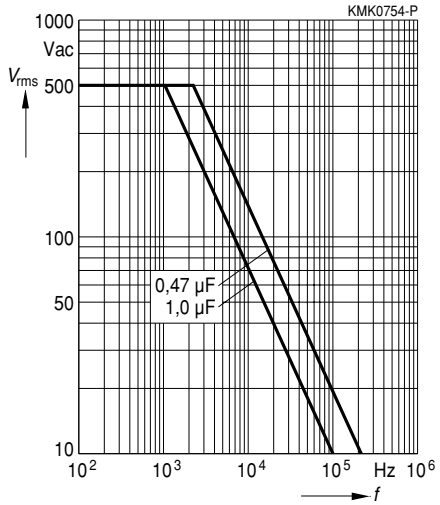
2000 Vdc/ 700 Vac



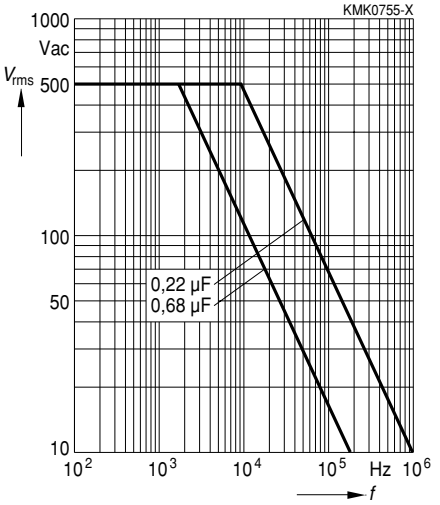
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 37,5 mm

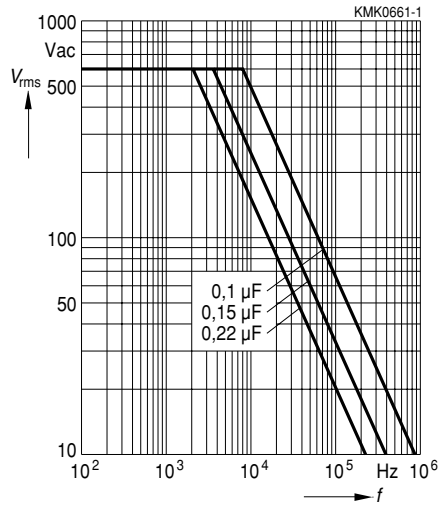
1000 Vdc/ 500 Vac



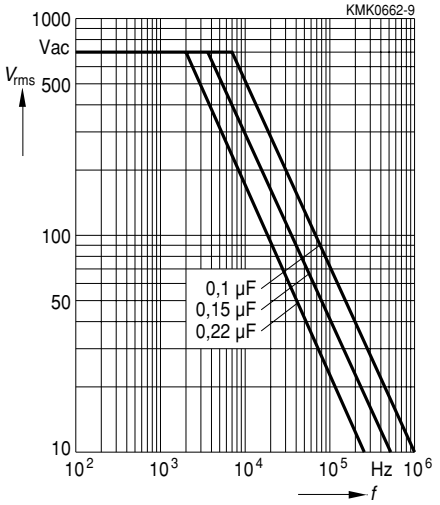
1250 Vdc/ 500 Vac



1600 Vdc/ 600 Vac

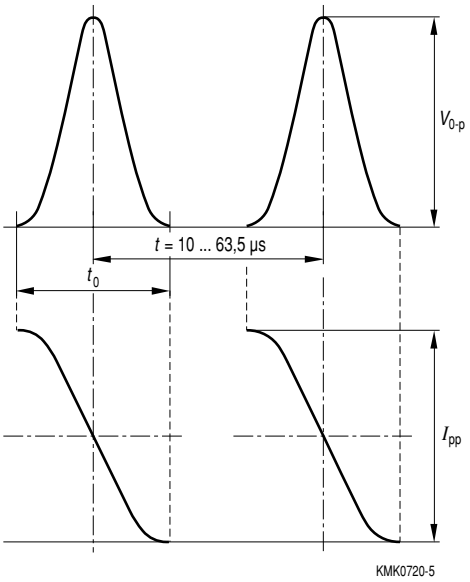


2000 Vdc/700 Vac



Flyback application
Permissible voltage and current / waveform

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

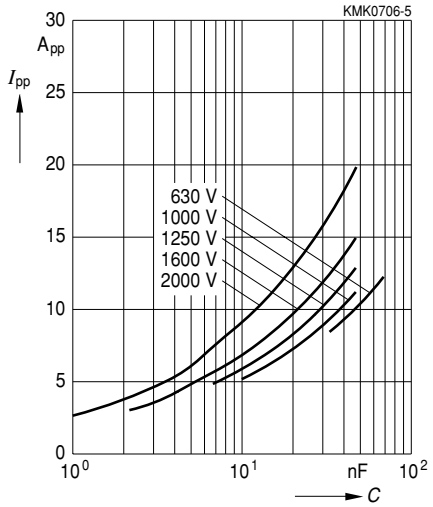


Approximation formular for duty cycle higher than 20 %:

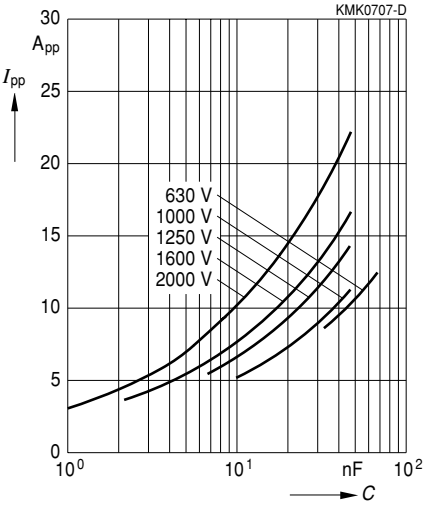
$$I'_{pp} = I_{pp}\sqrt{\frac{t_0^3}{t_0'^3}}$$

Flyback application
Permissible current I_{pp} versus rated capacitance C_R

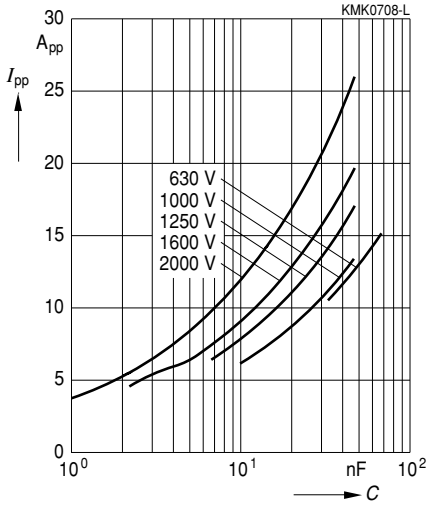
Frequency = 15,75 kHz



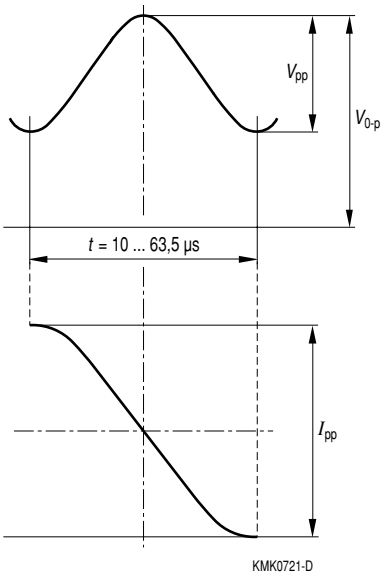
Frequency = 31,5 kHz



Frequency = 95 kHz

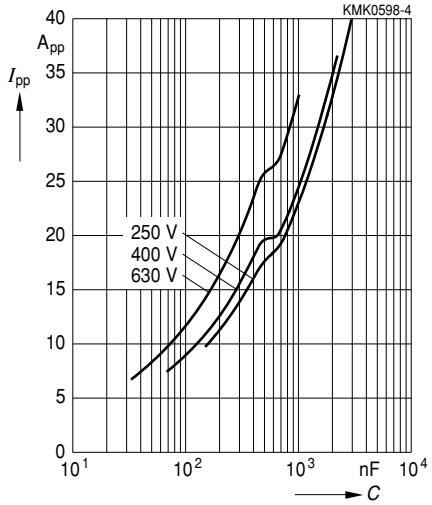


S-correction application
Permissible voltage and current / waveform

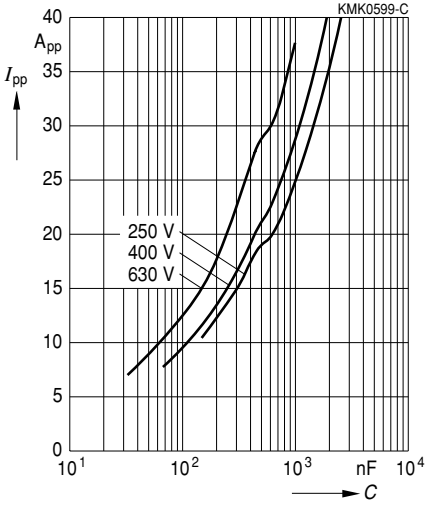


S-correction application
Permissible current I_{pp} versus rated capacitance C_R

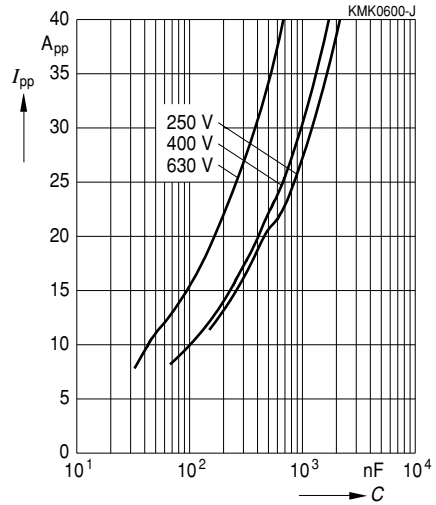
Frequency = 15,75 kHz



Frequency = 31,75 kHz



Frequency = 95 kHz



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