Standard applications

Construction

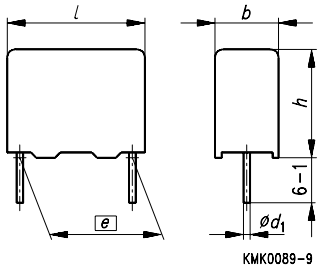
- Dielectric: polyethylene terephthalate (polyester)
- Stacked-film technology for lead spacing 5 and 7,5 mm as well as for 10 and 15 mm (63 … 400 Vdc)
- Wound capacitor technology for lead spacing 10 mm (630 Vdc), for lead spacing 15 mm (250 ... 630 Vdc), for lead spacing 22,5 and 27,5 mm
- Plastic case (UL 94 V-0)
- Epoxy resin sealing

Features

- High pulse strength
- High contact reliability

Terminals

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



Dimensions in mm

Lead spacing e ± 0,4	Diameter d_1	Type
5,0	0,5	B 32 529
7,5	0,5	B 32 520
10,0	0,5[1)] /0,6	B 32 521
15,0	0,8	B 32 522
22,5	0,8	B 32 523
27,5	0,8	B 32 524

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

Marking

Manufacturer's logo,
lot number, style and type (T5xx) for lead spacing ≥ 10 mm,
type (coded) for lead spacing 5 mm (B32529 ≙ 1),
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.

Overview of available types

Lead spacing	5 mm	7,5 mm	10 mm	15 mm	22,5 mm	27,5 mm
Type	B 32 529	B 32 520	B 32 521	B 32 522	B 32 523	B 32 524
Page	17	21	23	25	27	28
1,0 nF	63 Vdc, 100 Vdc, 250 Vdc, 400 Vdc, 630 Vdc	400 Vdc	630 Vdc			
1,5 nF						
2,2 nF						
3,3 nF						
4,7 nF						
6,8 nF			400 Vdc			
10 nF						
15 nF		250 Vdc				
22 nF						
33 nF						
47 nF		100 Vdc, 250 Vdc		630 Vdc		
68 nF						
0,10 µF		63 Vdc, 100 Vdc	250 Vdc, 400 Vdc			
0,15 µF						
0,22 µF						
0,33 µF				400 Vdc, 630 Vdc	630 Vdc	
0,47 µF			100 Vdc			
0,68 µF				250 Vdc	400 Vdc	
1,0 µF	50 Vdc		63 Vdc	100 Vdc	250 Vdc	400 Vdc, 630 Vdc
1,5 µF						
2,2 µF					63 Vdc, 100 Vdc	
3,3 µF				63 Vdc		
4,7 µF						100 Vdc, 250 Vdc, 400 Vdc
6,8 µF						
10 µF						
15 µF						
22 µF						
33 µF						
Note	Stacked-film technology			Stacked-film/ Wound capacitor technology	Wound capacitor technology	

Ordering codes and packing units, lead spacing 5 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
50 Vdc (32 Vac)	0,33 µF	3,0 × 6,5 × 7,2	B32529-C5334-+***	2700	2400	2000
	0,47 µF	3,5 × 8,0 × 7,2	B32529-C5474-+***	2300	2000	2000
	0,68 µF	4,5 × 9,5 × 7,3	B32529-C5684-+***	1800	1500	1500
	1,0 µF	4,5 × 9,5 × 7,3	B32529-C5105-+***	1800	1500	1500
	1,5 µF	6,0 × 10,5 × 7,5	B32529-C5155-+***	1300	1100	1000
	2,2 µF	7,8 × 13,0 × 7,8	B32529-D5225-+***	1000	800	1000
	3,3 µF	7,8 × 13,0 × 7,8	B32529-D5335-+***	1000	800	1000
63 Vdc (40 Vac)	1,0 nF	2,5 × 6,5 × 7,2	B32529-C102-+***	3200	2800	2000
	1,5 nF	2,5 × 6,5 × 7,2	B32529-C152-+***	3200	2800	2000
	2,2 nF	2,5 × 6,5 × 7,2	B32529-C222-+***	3200	2800	2000
	3,3 nF	2,5 × 6,5 × 7,2	B32529-C332-+***	3200	2800	2000
	4,7 nF	2,5 × 6,5 × 7,2	B32529-C472-+***	3200	2800	2000
	6,8 nF	2,5 × 6,5 × 7,2	B32529-C682-+***	3200	2800	2000
	10 nF	2,5 × 6,5 × 7,2	B32529-C103-+***	3200	2800	2000
	15 nF	2,5 × 6,5 × 7,2	B32529-C153-+***	3200	2800	2000
	22 nF	2,5 × 6,5 × 7,2	B32529-C223-+***	3200	2800	2000
	33 nF	2,5 × 6,5 × 7,2	B32529-C333-+***	3200	2800	2000
	47 nF	2,5 × 6,5 × 7,2	B32529-C473-+***	3200	2800	2000
	68 nF	2,5 × 6,5 × 7,2	B32529-C683-+***	3200	2800	2000
	0,10 µF	2,5 × 6,5 × 7,2	B32529-C104-+***	3200	2800	2000
	0,15 µF	2,5 × 6,5 × 7,2	B32529-C154-+***	3200	2800	2000
	0,22 µF	2,5 × 6,5 × 7,2	B32529-C224-+***	3200	2800	2000
	0,33 µF	3,0 × 6,5 × 7,2	B32529-C334-+***	2700	2400	2000
	0,47 µF	3,5 × 8,0 × 7,2	B32529-C474-+***	2300	2000	2000
	0,68 µF	4,5 × 9,5 × 7,3	B32529-C684-+***	1800	1500	1500
	1,0 µF	4,5 × 9,5 × 7,3	B32529-C105-+***	1800	1500	1500
	1,5 µF	6,0 × 10,5 × 7,5	B32529-C155-+***	1300	1100	1000
	2,2 µF	7,8 × 13,0 × 7,8	B32529-D225-+***	1000	800	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.: B32529-C5334-K3

Ordering codes and packing units, lead spacing 5 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
100 Vdc (63 Vac)	1,0 nF	2,5 × 6,5 × 7,2	B32529-C1102-+***	3200	2800	2000
	1,5 nF	2,5 × 6,5 × 7,2	B32529-C1152-+***	3200	2800	2000
	2,2 nF	2,5 × 6,5 × 7,2	B32529-C1222-+***	3200	2800	2000
	3,3 nF	2,5 × 6,5 × 7,2	B32529-C1332-+***	3200	2800	2000
	4,7 nF	2,5 × 6,5 × 7,2	B32529-C1472-+***	3200	2800	2000
	6,8 nF	2,5 × 6,5 × 7,2	B32529-C1682-+***	3200	2800	2000
	10 nF	2,5 × 6,5 × 7,2	B32529-C1103-+***	3200	2800	2000
	15 nF	2,5 × 6,5 × 7,2	B32529-C1153-+***	3200	2800	2000
	22 nF	2,5 × 6,5 × 7,2	B32529-C1223-+***	3200	2800	2000
	33 nF	2,5 × 6,5 × 7,2	B32529-C1333-+***	3200	2800	2000
	47 nF	2,5 × 6,5 × 7,2	B32529-C1473-+***	3200	2800	2000
	68 nF	2,5 × 6,5 × 7,2	B32529-C1683-+***	3200	2800	2000
	0,10 µF	2,5 × 6,5 × 7,2	B32529-C1104-+***	3200	2800	2000
	0,15 µF	3,0 × 6,5 × 7,2	B32529-C1154-+***	2700	2400	2000
	0,22 µF	3,5 × 8,0 × 7,2	B32529-C1224-+***	2300	2000	2000
	0,33 µF	3,5 × 8,0 × 7,2	B32529-C1334-+***	2300	2000	2000
	0,47 µF	4,5 × 9,5 × 7,3	B32529-C1474-+***	1800	1500	1500
	0,68 µF	6,0 × 10,5 × 7,5	B32529-C1684-+***	1300	1100	1000
	1,0 µF	7,8 × 13,0 × 7,8	B32529-D1105-+***	1000	800	1000

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

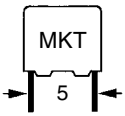
1) + Code letter for capacitance tolerance
*** Code number for packing: Ammo pack = 289, reel = 189
The ordering code for untaped components ends after the tolerance code letter.
For capacitors with 3,2 mm lead length, append code number “3” to the tolerance code, e.g.: B32529-C1102-K3

Ordering codes and packing units, lead spacing 5 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
250 Vdc (160 Vac)	1,0 nF	2,5 × 6,5 × 7,2	B32529-C3102-+***	3200	2800	2000
	1,5 nF	2,5 × 6,5 × 7,2	B32529-C3152-+***	3200	2800	2000
	2,2 nF	2,5 × 6,5 × 7,2	B32529-C3222-+***	3200	2800	2000
	3,3 nF	2,5 × 6,5 × 7,2	B32529-C3332-+***	3200	2800	2000
	4,7 nF	2,5 × 6,5 × 7,2	B32529-C3472-+***	3200	2800	2000
	6,8 nF	2,5 × 6,5 × 7,2	B32529-C3682-+***	3200	2800	2000
	10 nF	2,5 × 6,5 × 7,2	B32529-C3103-+***	3200	2800	2000
	15 nF	2,5 × 6,5 × 7,2	B32529-C3153-+***	3200	2800	2000
	22 nF	2,5 × 6,5 × 7,2	B32529-C3223-+***	3200	2800	2000
	33 nF	3,0 × 6,5 × 7,2	B32529-C3333-+***	2700	2400	2000
	47 nF	3,5 × 8,0 × 7,2	B32529-C3473-+***	2300	2000	2000
	68 nF	4,5 × 9,5 × 7,3	B32529-C3683-+***	1800	1500	1500
	0,10 µF	4,5 × 9,5 × 7,3	B32529-C3104-+***	1800	1500	1500
	0,15 µF	5,0 × 10,0 × 7,5	B32529-C3154-+***	1600	1400	1500
	0,22 µF	7,8 × 13,0 × 7,8	B32529-D3224-+***	1000	800	1000
	0,33 µF	7,8 × 13,0 × 7,8	B32529-C3334-+***	1000	800	1000
	0,47 µF	7,8 × 13,0 × 7,8	B32529-C3474-+***	1000	800	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.: B32529-C3102-K3

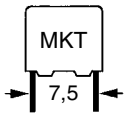


Ordering codes and packing units, lead spacing 5 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
400 Vdc (200 Vac)	1,0 nF	2,5 × 6,5 × 7,2	B32529-C6102-+***	3200	2800	2000
	1,5 nF	2,5 × 6,5 × 7,2	B32529-C6152-+***	3200	2800	2000
	2,2 nF	2,5 × 6,5 × 7,2	B32529-C6222-+***	3200	2800	2000
	3,3 nF	2,5 × 6,5 × 7,2	B32529-C6332-+***	3200	2800	2000
	4,7 nF	2,5 × 6,5 × 7,2	B32529-C6472-+***	3200	2800	2000
	6,8 nF	2,5 × 6,5 × 7,2	B32529-C6682-+***	3200	2800	2000
	10 nF	3,0 × 6,5 × 7,2	B32529-C6103-+***	2700	2400	2000
	15 nF	3,5 × 8,0 × 7,2	B32529-C6153-+***	2300	2000	2000
	22 nF	4,5 × 9,5 × 7,3	B32529-B6223-+***	1800	1500	1500
	33 nF	5,0 × 10,0 × 7,5	B32529-B6333-+***	1600	1400	1500
	47 nF	6,0 × 10,5 × 7,5	B32529-B6473-+***	1300	1100	1000
	68 nF	7,8 × 13,0 × 7,8	B32529-D6683-+***	1000	800	1000
	0,10 µF	7,8 × 13,0 × 7,8	B32529-D6104-+***	1000	800	1000
630 Vdc (400 Vac)	1,0 nF	2,5 × 6,5 × 7,2	B32529-C8102-+***	3200	2800	2000
	1,5 nF	2,5 × 6,5 × 7,2	B32529-C8152-+***	3200	2800	2000
	2,2 nF	2,5 × 6,5 × 7,2	B32529-C8222-+***	3200	2800	2000
	3,3 nF	3,5 × 8,0 × 7,2	B32529-C8332-+***	2300	2000	2000
	4,7 nF	3,5 × 8,0 × 7,2	B32529-C8472-+***	2300	2000	2000
	6,8 nF	3,5 × 8,0 × 7,2	B32529-C8682-+***	2300	2000	2000
	10 nF	5,0 × 10,0 × 7,5	B32529-C8103-+***	1600	1400	1500

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.: B32529-C6102-K3

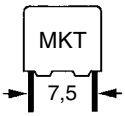


Ordering codes and packing units, lead spacing 7,5 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
63 Vdc (40 Vac)	68 nF	2,5 × 7,0 × 10,0	B32520-C683-+***	3200	2800	2500
	0,10 µF	2,5 × 7,0 × 10,0	B32520-C104-+***	3200	2800	2500
	0,15 µF	2,5 × 7,0 × 10,0	B32520-C154-+***	3200	2800	2500
	0,22 µF	2,5 × 7,0 × 10,0	B32520-C224-+***	3200	2800	2500
	0,33 µF	2,5 × 7,0 × 10,0	B32520-C334-+***	3200	2800	2500
	0,47 µF	3,0 × 8,0 × 10,0	B32520-C474-+***	2600	2400	2000
	0,68 µF	4,0 × 8,5 × 10,0	B32520-C684-+***	2000	1800	1500
	1,0 µF	5,0 × 10,5 × 10,0	B32520-C105-+***	1600	1400	1000
	1,5 µF	5,0 × 10,5 × 10,0	B32520-C155-+***	1600	1400	1000
	2,2 µF	6,0 × 12,0 × 10,3	B32520-C225-+***	1300	1100	750
100 Vdc (63 Vac)	47 nF	2,5 × 7,0 × 10,0	B32520-C1473-+***	3200	2800	2500
	68 nF	2,5 × 7,0 × 10,0	B32520-C1683-+***	3200	2800	2500
	0,10 µF	2,5 × 7,0 × 10,0	B32520-C1104-+***	3200	2800	2500
	0,15 µF	3,0 × 8,0 × 10,0	B32520-C1154-+***	2600	2400	2000
	0,22 µF	3,0 × 8,0 × 10,0	B32520-C1224-+***	2600	2400	2000
	0,33 µF	4,0 × 8,5 × 10,0	B32520-C1334-+***	2000	1800	1500
	0,47 µF	5,0 × 10,5 × 10,0	B32520-C1474-+***	1600	1400	1000
	0,68 µF	6,0 × 12,0 × 10,3	B32520-C1684-+***	1300	1100	750
	1,0 µF	6,0 × 12,0 × 10,3	B32520-C1105-+***	1300	1100	750
250 Vdc (160 Vac)	15 nF	2,5 × 7,0 × 10,0	B32520-C3153-+***	3200	2800	2500
	22 nF	2,5 × 7,0 × 10,0	B32520-C3223-+***	3200	2800	2500
	33 nF	2,5 × 7,0 × 10,0	B32520-C3333-+***	3200	2800	2500
	47 nF	2,5 × 7,0 × 10,0	B32520-C3473-+***	3200	2800	2500
	68 nF	3,0 × 8,0 × 10,0	B32520-C3683-+***	2600	2400	2000
	0,10 µF	4,0 × 8,5 × 10,0	B32520-C3104-+***	2000	1800	1500
	0,15 µF	5,0 × 10,5 × 10,0	B32520-C3154-+***	1600	1400	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.: B32520-C683-K3



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

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
400 Vdc (200 Vac)	1,0 nF	2,5 × 7,0 × 10,0	B32520-C6102-+***	3200	2800	2500
	1,5 nF	2,5 × 7,0 × 10,0	B32520-C6152-+***	3200	2800	2500
	2,2 nF	2,5 × 7,0 × 10,0	B32520-C6222-+***	3200	2800	2500
	3,3 nF	2,5 × 7,0 × 10,0	B32520-C6332-+***	3200	2800	2500
	4,7 nF	2,5 × 7,0 × 10,0	B32520-C6472-+***	3200	2800	2500
	6,8 nF	2,5 × 7,0 × 10,0	B32520-C6682-+***	3200	2800	2500
	10 nF	2,5 × 7,0 × 10,0	B32520-C6103-+***	3200	2800	2500
	15 nF	3,0 × 8,0 × 10,0	B32520-C6153-+***	2600	2400	2000
	22 nF	4,0 × 8,5 × 10,0	B32520-C6223-+***	2000	1800	1500
	33 nF	5,0 × 10,5 × 10,0	B32520-C6333-+***	1600	1400	1000
	47 nF	5,0 × 10,5 × 10,0	B32520-C6473-+***	1600	1400	1000
	68 nF	6,0 × 12,0 × 10,3	B32520-C6683-+***	1300	1100	750

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

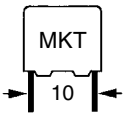
1) + Code letter for capacitance tolerance
*** Code number for packing: Ammo pack = 289, reel = 189
The ordering code for untaped components ends after the tolerance code letter.
For capacitors with 3,2 mm lead length, append code number “3” to the tolerance code, e.g.: B32520-C6102-K3

Ordering codes and packing units, lead spacing 10 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
63 Vdc (40 Vac)	0,47 µF	4,0 × 7,0 × 13,0	B32521-C474-+***	1000	1700	1000
	0,68 µF	4,0 × 7,0 × 13,0	B32521-C684-+***	1000	1700	1000
	1,0 µF	4,0 × 9,0 × 13,0	B32521-C105-+***	1000	1700	1000
	1,5 µF	5,0 × 11,0 × 13,0	B32521-C155-+***	830	1300	1000
	2,2 µF	5,0 × 11,0 × 13,0	B32521-C225-+***	830	1300	1000
	3,3 µF	6,0 × 12,0 × 13,0	B32521-C335-+***	680	1100	1000
100 Vdc (63 Vac)	0,10 µF	4,0 × 7,0 × 13,0	B32521-C1104-+***	1000	1700	1000
	0,15 µF	4,0 × 7,0 × 13,0	B32521-C1154-+***	1000	1700	1000
	0,22 µF	4,0 × 7,0 × 13,0	B32521-C1224-+***	1000	1700	1000
	0,33 µF	4,0 × 7,0 × 13,0	B32521-C1334-+***	1000	1700	1000
	0,47 µF	4,0 × 9,0 × 13,0	B32521-C1474-+***	1000	1700	1000
	0,68 µF	5,0 × 11,0 × 13,0	B32521-C1684-+***	830	1300	1000
	1,0 µF	6,0 × 12,0 × 13,0	B32521-C1105-+***	680	1100	1000
250 Vdc (160 Vac)	33 nF	4,0 × 7,0 × 13,0	B32521-C3333-+***	1000	1700	1000
	47 nF	4,0 × 7,0 × 13,0	B32521-C3473-+***	1000	1700	1000
	68 nF	4,0 × 7,0 × 13,0	B32521-C3683-+***	1000	1700	1000
	0,10 µF	4,0 × 7,0 × 13,0	B32521-C3104-+***	1000	1700	1000
	0,15 µF	4,0 × 9,0 × 13,0	B32521-C3154-+***	1000	1700	1000
	0,22 µF	5,0 × 11,0 × 13,0	B32521-C3224-+***	830	1300	1000
	0,33 µF	5,0 × 11,0 × 13,0	B32521-C3334-+***	830	1300	1000
	0,47 µF	6,0 × 12,0 × 13,0	B32521-C3474-+***	680	1100	1000
400 Vdc (200 Vac)	10 nF	4,0 × 7,0 × 13,0	B32521-C6103-+***	1000	1700	1000
	15 nF	4,0 × 7,0 × 13,0	B32521-C6153-+***	1000	1700	1000
	22 nF	4,0 × 7,0 × 13,0	B32521-C6223-+***	1000	1700	1000
	33 nF	4,0 × 9,0 × 13,0	B32521-C6333-+***	1000	1700	1000
	47 nF	5,0 × 11,0 × 13,0	B32521-C6473-+***	830	1300	1000
	68 nF	5,0 × 11,0 × 13,0	B32521-C6683-+***	830	1300	1000
	0,10 µF	6,0 × 12,0 × 13,0	B32521-C6104-+***	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.: B32521-C474-K3



Ordering codes and packing units, lead spacing 10 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
630 Vdc (200 Vac)	6,8 nF[2]	4,0 × 9,0 × 13,0	B32521-N8682-+***	1000	1700	1000
	10 nF[2]	4,0 × 9,0 × 13,0	B32521-N8103-+***	1000	1700	1000
	15 nF[2]	5,0 × 11,0 × 13,0	B32521-N8153-+***	830	1300	1000
	22 nF[2]	5,0 × 11,0 × 13,0	B32521-N8223-+***	830	1300	1000
	33 nF[2]	6,0 × 12,0 × 13,0	B32521-N8333-+***	680	1100	1000

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

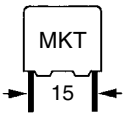
1) + Code letter for capacitance tolerance
*** Code number for packing: Ammo pack = 289, reel = 189
The ordering code for untaped components ends after the tolerance code letter.
For capacitors with 3,2 mm lead length, append code number “3” to the tolerance code, e.g.: B32521-N8682-K3
2) Wound capacitor technology

Ordering codes and packing units, lead spacing 15 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
63 Vdc (40 Vac)	0,68 µF	5,0 × 10,5 × 18,0	B32522-C684-+***	1170	1300	1000
	1,0 µF	5,0 × 10,5 × 18,0	B32522-C105-+***	1170	1300	1000
	1,5 µF	5,0 × 10,5 × 18,0	B32522-C155-+***	1170	1300	1000
	2,2 µF	5,0 × 10,5 × 18,0	B32522-C225-+***	1170	1300	1000
	3,3 µF	6,0 × 11,0 × 18,0	B32522-C335-+***	960	1100	1000
	4,7 µF	7,0 × 12,5 × 18,0	B32522-C475-+***	830	900	1000
	6,8 µF	8,5 × 14,5 × 18,0	B32522-C685-+***	680	700	500
	10 µF	9,0 × 17,5 × 18,0	B32522-C106-+***	640	700	500
100 Vdc (63 Vac)	0,33 µF	5,0 × 10,5 × 18,0	B32522-C1334-+***	1170	1300	1000
	0,47 µF	5,0 × 10,5 × 18,0	B32522-C1474-+***	1170	1300	1000
	0,68 µF	5,0 × 10,5 × 18,0	B32522-C1684-+***	1170	1300	1000
	1,0 µF	5,0 × 10,5 × 18,0	B32522-C1105-+***	1170	1300	1000
	1,5 µF	6,0 × 11,0 × 18,0	B32522-C1155-+***	960	1100	1000
	2,2 µF	7,0 × 12,5 × 18,0	B32522-C1225-+***	830	900	1000
	3,3 µF	8,5 × 14,5 × 18,0	B32522-C1335-+***	680	700	500
	4,7 µF	9,0 × 17,5 × 18,0	B32522-C1475-+***	640	700	500
250 Vdc (160 Vac)	0,10 µF	5,0 × 10,5 × 18,0	B32522-C3104-+***	1170	1300	1000
	0,15 µF	5,0 × 10,5 × 18,0	B32522-C3154-+***	1170	1300	1000
	0,22 µF	5,0 × 10,5 × 18,0	B32522-C3224-+***	1170	1300	1000
	0,33 µF	5,0 × 10,5 × 18,0	B32522-C3334-+***	1170	1300	1000
	0,47 µF	6,0 × 11,0 × 18,0	B32522-C3474-+***	960	1100	1000
	0,68 µF	7,0 × 12,5 × 18,0	B32522-C3684-+***	830	900	1000
	1,0 µF	8,5 × 14,5 × 18,0	B32522-C3105-+***	680	700	500
	1,0 µF[2]	8,5 × 14,5 × 18,0	B32522-N3105-+***	680	700	500
	1,5 µF	9,0 × 17,5 × 18,0	B32522-C3155-+***	640	700	500
	1,5 µF[2]	9,0 × 17,5 × 18,0	B32522-N3155-+***	640	700	500

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.: B32522-C684-K3
2) Wound capacitor technology

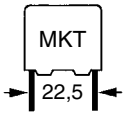


Ordering codes and packing units, lead spacing 15 mm

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
400 Vdc (200 Vac)	47 nF	5,0 × 10,5 × 18,0	B32522-C6473-+***	1170	1300	1000
	68 nF	5,0 × 10,5 × 18,0	B32522-C6683-+***	1170	1300	1000
	0,10 µF	5,0 × 10,5 × 18,0	B32522-C6104-+***	1170	1300	1000
	0,10 µF[2]	5,0 × 10,5 × 18,0	B32522-N6104-+***	1170	1300	1000
	0,15 µF	6,0 × 11,0 × 18,0	B32522-C6154-+***	960	1100	1000
	0,15 µF[2]	5,0 × 10,5 × 18,0	B32522-N6154-+***	1170	1300	1000
	0,22 µF	7,0 × 12,5 × 18,0	B32522-C6224-+***	830	900	1000
	0,22 µF[2]	6,0 × 11,0 × 18,0	B32522-N6224-+***	960	1100	1000
	0,33 µF	8,5 × 14,5 × 18,0	B32522-C6334-+***	680	700	500
	0,33 µF[2]	8,5 × 14,5 × 18,0	B32522-N6334-+***	680	700	500
	0,47 µF[2]	8,5 × 14,5 × 18,0	B32522-N6474-+***	680	700	500
	0,68 µF[2]	9,0 × 17,5 × 18,0	B32522-N6684-+***	640	700	500
630 Vdc (200 Vac)	33 nF[2]	5,0 × 10,5 × 18,0	B32522-Q8333-+***	1170	1300	1000
	47 nF[2]	5,0 × 10,5 × 18,0	B32522-Q8473-+***	1170	1300	1000
	68 nF[2]	6,0 × 11,0 × 18,0	B32522-Q8683-+***	960	1100	1000
	0,10 µF[2]	7,0 × 12,5 × 18,0	B32522-Q8104-+***	830	900	1000
	0,15 µF[2]	8,5 × 14,5 × 18,0	B32522-Q8154-+***	680	700	500
	0,22 µF[2]	9,0 × 17,5 × 18,0	B32522-Q8224-+***	640	700	500

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

1) + Code letter for capacitance tolerance
*** Code number for packing: Ammo pack = 289, reel = 189
For capacitors with 3,2 mm lead length, append code number "3" to the tolerance code, e.g.: B32522-C6473-K3
2) Wound capacitor technology



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

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
63 Vdc (40 Vac)	3,3 µF	6,0 × 15,0 × 26,5	B32523-Q335-+***	680	700	720
	4,7 µF	7,0 × 16,0 × 26,5	B32523-Q475-+***	580	600	630
	6,8 µF	8,5 × 16,5 × 26,5	B32523-Q685-+***	480	500	510
	10 µF	10,5 × 18,5 × 26,5	B32523-Q106-+***	390	400	540
100 Vdc (63 Vac)	1,5 µF	6,0 × 15,0 × 26,5	B32523-Q1155-+***	680	700	720
	2,2 µF	6,0 × 15,0 × 26,5	B32523-Q1225-+***	680	700	720
	3,3 µF	6,0 × 15,0 × 26,5	B32523-Q1335-+***	680	700	720
	4,7 µF	7,0 × 16,0 × 26,5	B32523-Q1475-+***	580	600	630
	6,8 µF	8,5 × 16,5 × 26,5	B32523-Q1685-+***	480	500	510
250 Vdc (160 Vac)	0,47 µF	6,0 × 15,0 × 26,5	B32523-Q3474-+***	680	700	720
	0,68 µF	6,0 × 15,0 × 26,5	B32523-Q3684-+***	680	700	720
	1,0 µF	6,0 × 15,0 × 26,5	B32523-Q3105-+***	680	700	720
	1,5 µF	7,0 × 16,0 × 26,5	B32523-Q3155-+***	580	600	630
	2,2 µF	10,5 × 16,5 × 26,5	B32523-Q3225-+***	390	400	540
	3,3 µF	11,0 × 20,5 × 26,5	B32523-Q3335-+***	370	350	510
400 Vdc (200 Vac)	0,22 µF	6,0 × 15,0 × 26,5	B32523-Q6224-+***	680	700	720
	0,33 µF	6,0 × 15,0 × 26,5	B32523-Q6334-+***	680	700	720
	0,47 µF	7,0 × 16,0 × 26,5	B32523-Q6474-+***	580	600	630
	0,68 µF	8,5 × 16,5 × 26,5	B32523-Q6684-+***	480	500	510
	1,0 µF	10,5 × 16,5 × 26,5	B32523-Q6105-+***	390	400	540
630 Vdc (200 Vac)	0,10 µF	6,0 × 15,0 × 26,5	B32523-Q8104-+***	680	700	720
	0,15 µF	6,0 × 15,0 × 26,5	B32523-Q8154-+***	680	700	720
	0,22 µF	7,0 × 16,0 × 26,5	B32523-Q8224-+***	580	600	630
	0,33 µF	10,5 × 16,5 × 26,5	B32523-Q8334-+***	390	400	540
	0,47 µF	10,5 × 20,5 × 26,5	B32523-Q8474-+***	390	400	540

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.: B32523-Q685-K3

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

V_R (V_{rms}, $f \leq 60$ Hz)	C_R	Maximum dimensions $b \times h \times l$ (mm)	Ordering code[1)]	Packing units (pcs)		
				Ammo pack	Reel	Untaped
100 Vdc (63 Vac)	4,7 µF	11,0 × 21,0 × 31,5	B32524-Q1475-+***	–	350	320
	6,8 µF	11,0 × 21,0 × 31,5	B32524-Q1685-+***	–	350	320
	10 µF	11,0 × 21,0 × 31,5	B32524-Q1106-+***	–	350	320
	15 µF	12,5 × 21,5 × 31,5	B32524-Q1156-+***	–	300	280
	22 µF	14,0 × 24,5 × 31,5	B32524-Q1226-+***	–	250	260
	33 µF	18,0 × 27,5 × 31,5	B32524-Q1336-+***	–	–	200
250 Vdc (160 Vac)	1,5 µF	11,0 × 21,0 × 31,5	B32524-Q3155-+***	–	350	320
	2,2 µF	11,0 × 21,0 × 31,5	B32524-Q3225-+***	–	350	320
	3,3 µF	11,0 × 21,0 × 31,5	B32524-Q3335-+***	–	350	320
	4,7 µF	11,0 × 21,0 × 31,5	B32524-Q3475-+***	–	350	320
	6,8 µF	14,0 × 24,5 × 31,5	B32524-Q3685-+***	–	250	260
	10 µF	18,0 × 27,5 × 31,5	B32524-Q3106-+***	–	–	200
400 Vdc (200 Vac)	1,0 µF	11,0 × 21,0 × 31,5	B32524-Q6105-+***	–	350	320
	1,5 µF	11,0 × 21,0 × 31,5	B32524-Q6155-+***	–	350	320
	2,2 µF	12,5 × 21,5 × 31,5	B32524-Q6225-+***	–	300	280
	3,3 µF	15,0 × 24,5 × 31,5	B32524-Q6335-+***	–	–	240
	4,7 µF	18,0 × 27,5 × 31,5	B32524-Q6475-+***	–	–	200
630 Vdc (220 Vac)	0,33 µF	11,0 × 21,0 × 31,5	B32524-Q8334-+***	–	350	320
	0,47 µF	11,0 × 21,0 × 31,5	B32524-Q8474-+***	–	350	320
	0,68 µF	11,0 × 21,0 × 31,5	B32524-Q8684-+***	–	350	320
	1,0 µF	14,0 × 24,5 × 31,5	B32524-Q8105-+***	–	250	260
	1,5 µF	18,0 × 27,5 × 31,5	B32524-Q8155-+***	–	–	200

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.: B32524-Q1685-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 (+ 125 °C for 1000 h and $V_C = 0{,}5 \cdot V_R$)
Damp heat test	56 days/40 °C/93 % relative humidity
Limit values after damp heat test	Capacitance change $\lvert\Delta C/C\rvert$ ≤ 5 % Dissipation factor change $\Delta \tan\delta$ ≤ $5 \cdot 10^{-3}$ (at 1 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	$0{,}5 \cdot V_R$; 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.
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 > 2 · upper limit value Insulation resistance R_{is} < 150 MΩ ($C_R \le 0{,}33$ µF) or time constant $\tau = C_R \cdot R_{is}$ < 50 s ($C_R > 0{,}33$ µF)

DC test voltage	$1{,}4 \cdot V_R$, 2 s		
Category voltage V_C Operation with dc voltage or ac voltage V_{rms} up to 60 Hz	$T \le$ 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
	$T \le$ 125 °C	$V = 0{,}5 \cdot V_R$, max. 1000 h	$V = 0{,}5 \cdot V_{rms}$, max. 1000 h

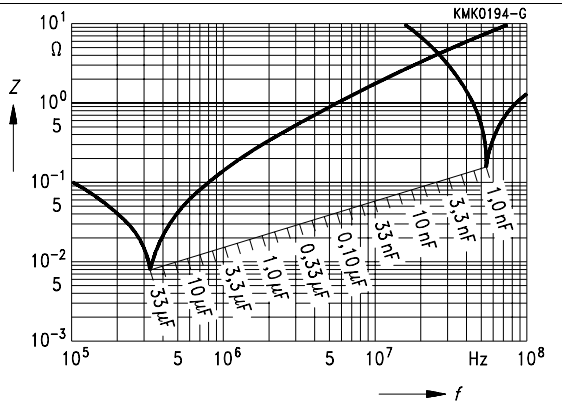
Dissipation factor tan δ (in 10^{-3}) at 20 °C (upper limit values)

	$C_R \le 0{,}1$ µF	0,1 µF < $C_R \le 1$ µF	$C_R > 1$ µF
at 1 kHz	8	10	10
10 kHz	15	20	–
100 kHz	30	–	–

Insulation resistance R_{is} or time constant $\tau = C_R \cdot R_{is}$ at 20 °C, rel. humidity ≤ 65 % (minimum as-delivered values)

V_R	$C_R \le 0{,}33$ µF	$C_R > 0{,}33$ µF
≤ 100 Vdc	3750 MΩ	1250 s
≥ 250 Vdc	7500 MΩ	2500 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					
	5 mm	7,5 mm	10 mm[1)]	15 mm[1)]	22,5 mm[1)]	27,5 mm[1)]
50 Vdc	200	–	–	–	–	–
63 Vdc	250	120	50	30	(3)	–
100 Vdc	300	150	75	50	(4)	(3)
250 Vdc	400	200	150	100 (10)	(6)	(4,5)
400 Vdc	600	275	175	125 (20)	(10)	(7,5)
630 Vdc	800	–	(20)	(25)	(15)	(12)

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.

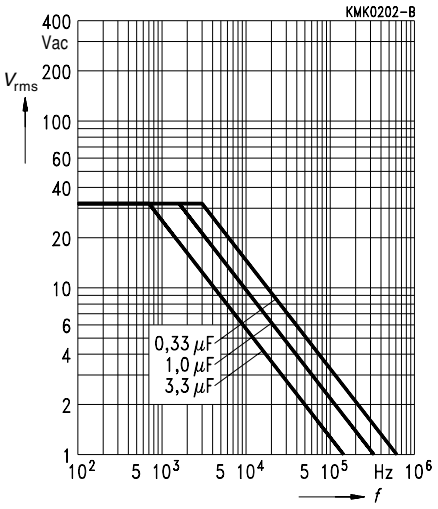
V_R	Pulse characteristic k_0 in V²/µs (for $V_{pp} \leq V_R$)					
	Lead spacing					
	5 mm	7,5 mm	10 mm[1)]	15 mm[1)]	22,5 mm[1)]	27,5 mm[1)]
50 Vdc	20 000	–	–	–	–	–
63 Vdc	30 000	15 000	6 300	3 800	(375)	–
100 Vdc	60 000	30 000	15 000	10 000	(750)	(600)
250 Vdc	200 000	100 000	75 000	50 000 (5 000)	(3 000)	(2 250)
400 Vdc	500 000	220 000	140 000	100 000 (15 000)	(8 000)	(6 000)
630 Vdc	1 000 000	–	(25 000)	(30 000)	(18 000)	(15 000)

1) Values in brackets apply to wound capacitors

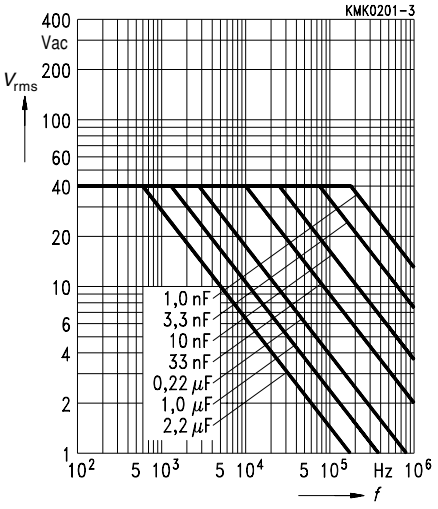
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 5 mm

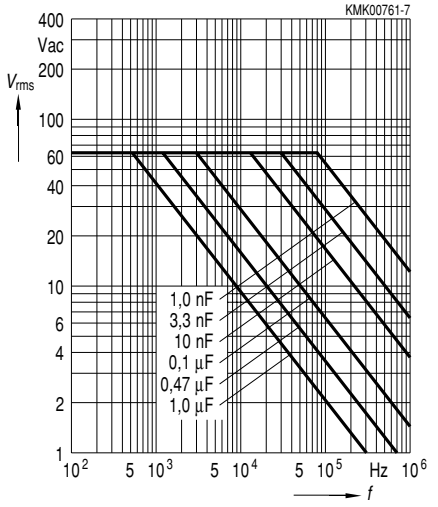
50 Vdc/ 32 Vac



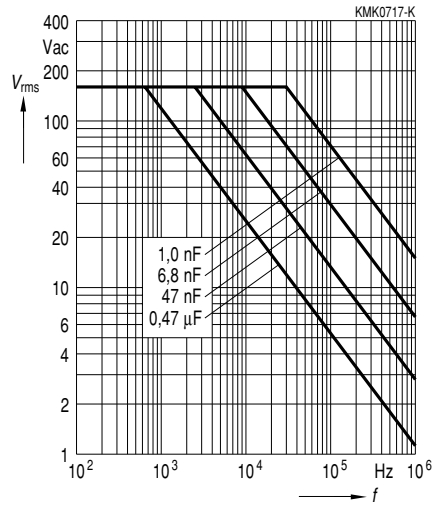
63 Vdc/ 40 Vac



100 Vdc/ 63 Vac



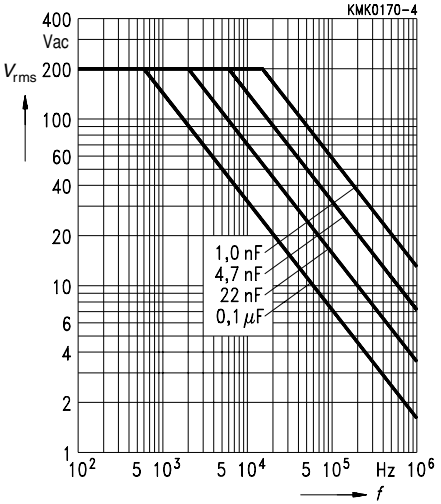
250 Vdc/ 160 Vac



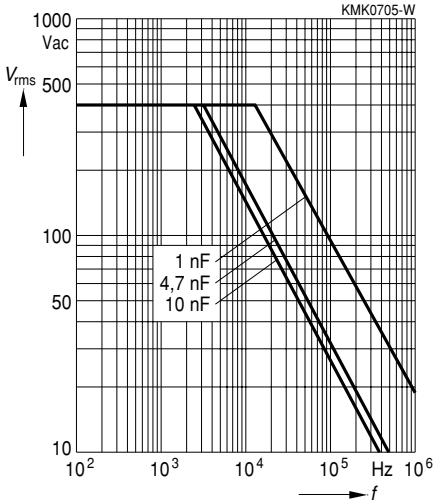
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 5 mm

400 Vdc/ 200 Vac



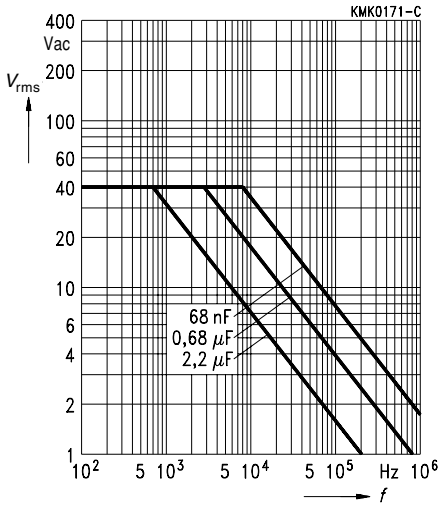
630 Vdc/ 400 Vac



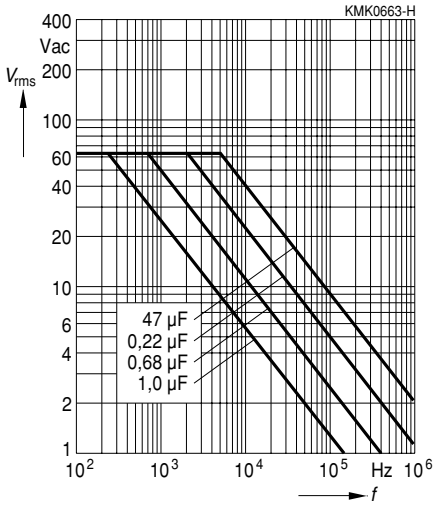
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 7,5 mm

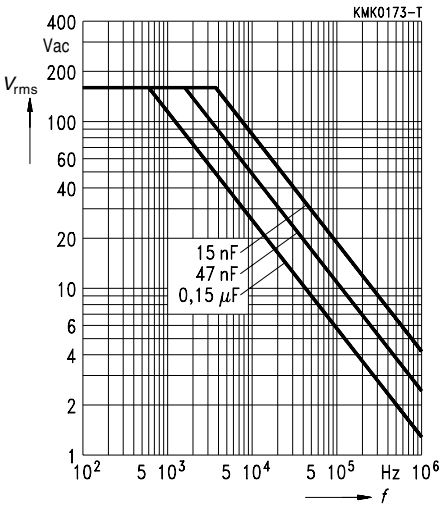
63 Vdc/ 40 Vac



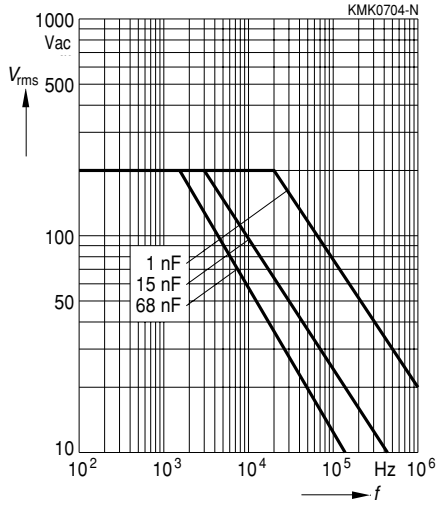
100 Vdc/ 63 Vac



250 Vdc/ 160 Vac



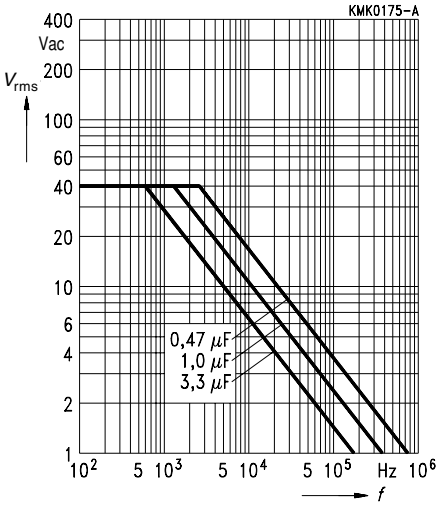
400 Vdc/ 200 Vac



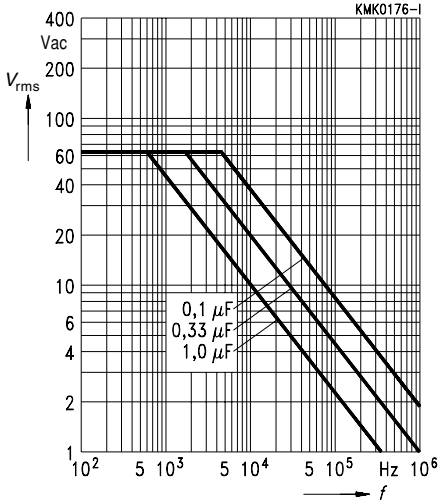
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 10 mm

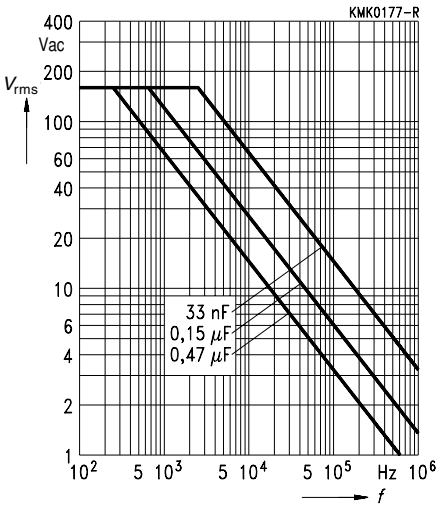
63 Vdc/ 40 Vac



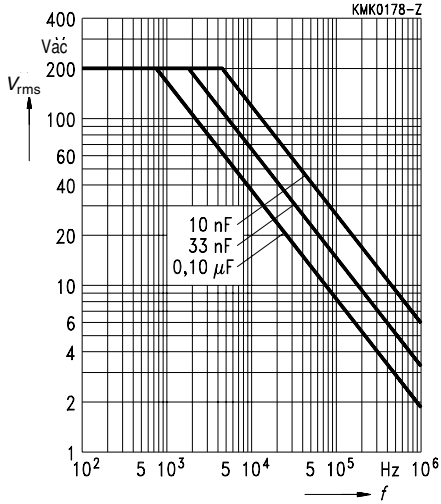
100 Vdc/ 63 Vac



250 Vdc/ 160 Vac



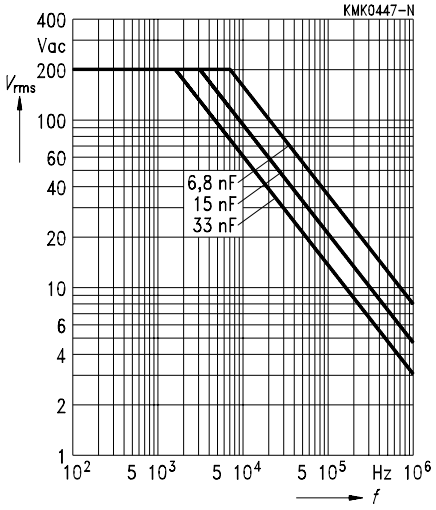
400 Vdc/ 200 Vac



Permissible ac voltage V_{rms} versus frequency f

Lead spacing 10 mm

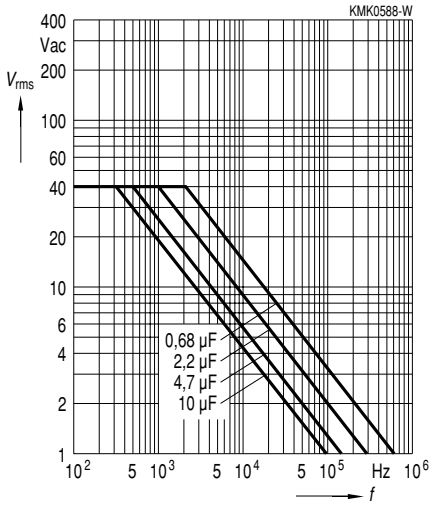
630 Vdc/ 200 Vac



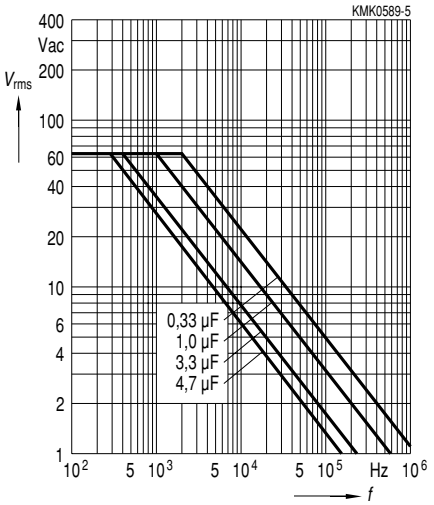
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 15 mm

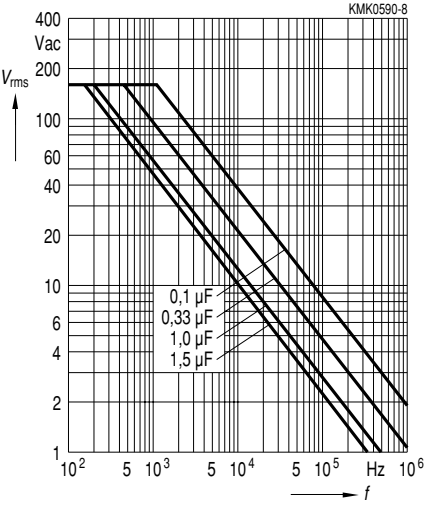
63 Vdc/ 40 Vac



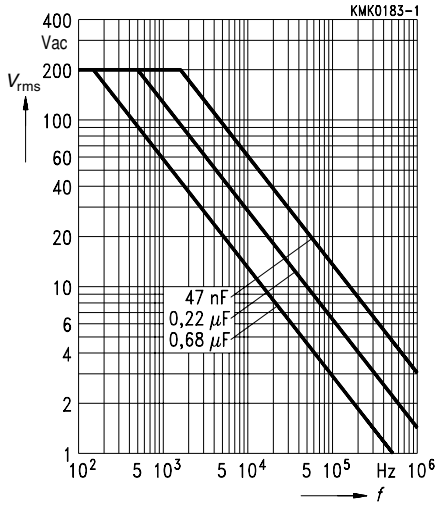
100 Vdc/ 63 Vac



250 Vdc/ 160 Vac



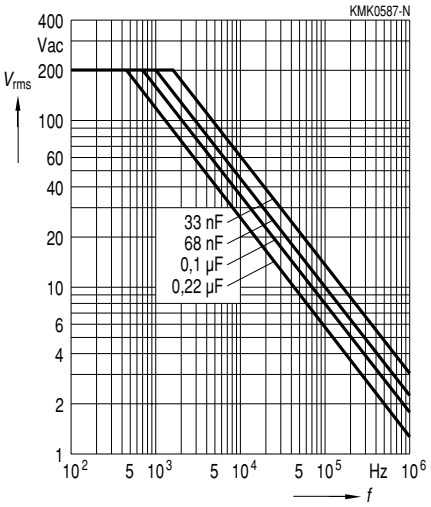
400 Vdc/ 200 Vac



Permissible ac voltage V_{rms} versus frequency f

Lead spacing 15 mm

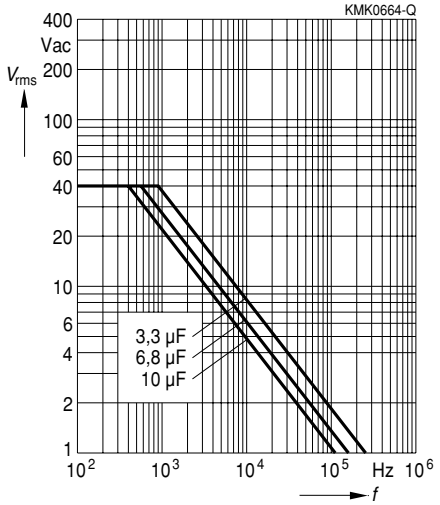
630 Vdc/ 200 Vac



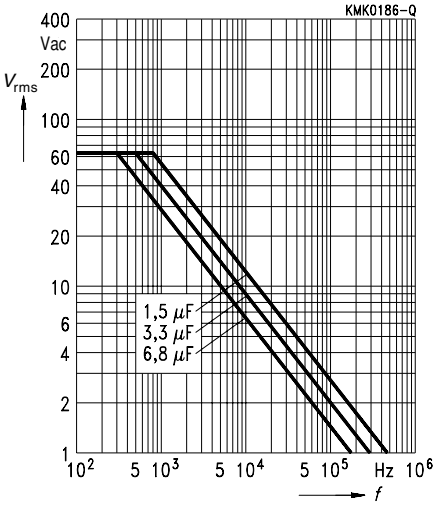
Permissible ac voltage V_{rms} versus frequency *f*

Lead spacing 22,5 mm

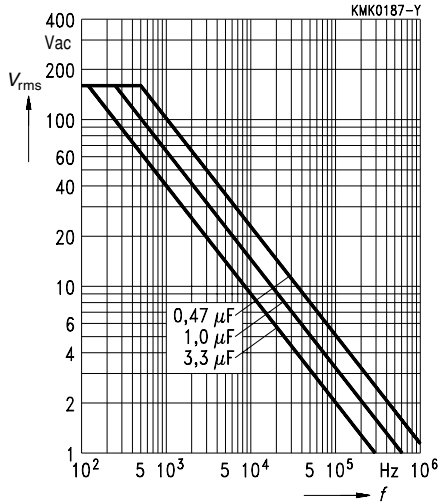
63 Vdc/ 40 Vac



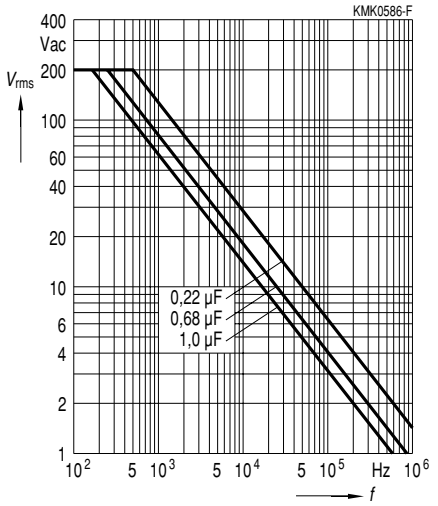
100 Vdc/ 63 Vac

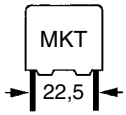


250 Vdc/ 160 Vac



400 Vdc/ 200 Vac

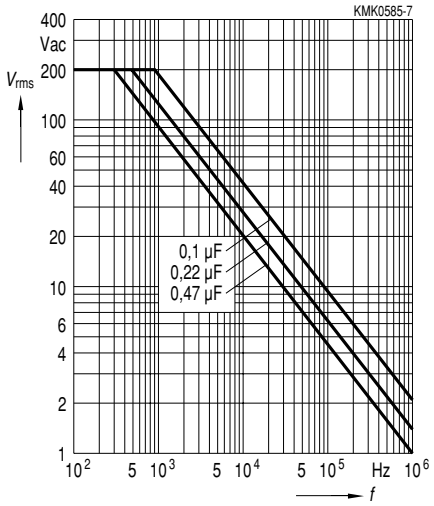




Permissible ac voltage V_{rms} versus frequency *f*

Lead spacing 22,5 mm

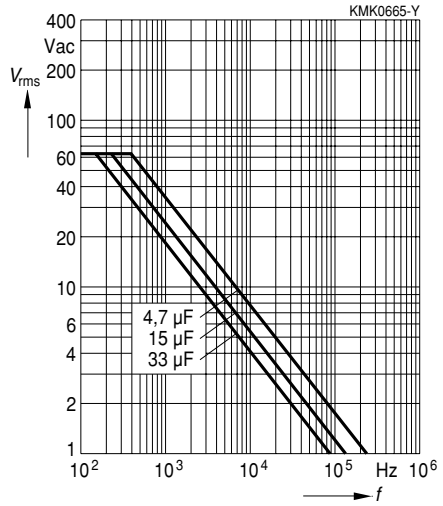
630 Vdc/ 200 Vac



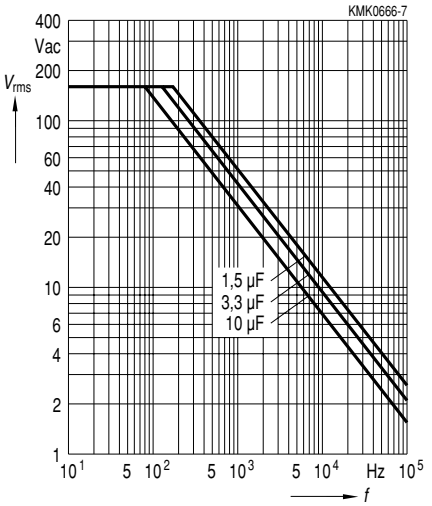
Permissible ac voltage V_{rms} versus frequency f

Lead spacing 27,5 mm

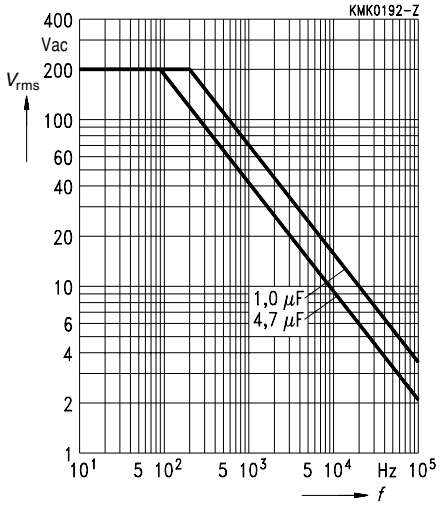
100 Vdc/ 63 Vac



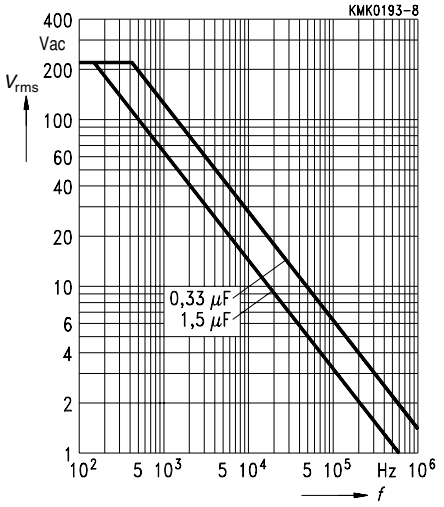
250 Vdc/ 160 Vac



400 Vdc/ 200 Vac



630 Vdc/ 220 Vac



Herausgegeben von EPCOS AG
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