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Film Capacitors

Metallized Polyester Film Capacitors (MKT)

Series/Type: B32520 ... B32529

Date: August 2004

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Typical applications

- Blocking
- Coupling, decoupling
- Bypassing
- RFI for automotive

Climatic

- Max. operating temperature: 125 °C
- Climatic category (IEC 60068-1): 55/125/56

Construction

- Dielectric: polyethylene terephthalate (polyester, PET)
- Stacked-film technology for lead spacing 5 to 15 mm
= code D or C in digit 7 of ordering code
- Wound capacitor technology for lead spacing 10 to 27.5 mm
= code N, Q or T in digit 7 of ordering code
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

Features

- High pulse strength
- High contact reliability

Terminals

- Parallel wire leads, lead-free tinned
- Special lead lengths available on request

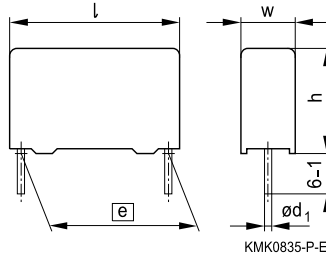
Marking

Manufacturer's logo,
 rated capacitance (coded), cap. tolerance (code letter),
 rated DC voltage, date of manufacture (coded),
 coded type ("1") for lead spacing 5 mm,
 series and lot number for lead spacing ≥ 10 mm

Delivery mode

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

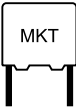
Dimensional drawing



Dimensions in mm

Lead spacing $e \pm 0.4$	Lead diameter d_1	Type
5.0	0.5	B32529
7.5	0.5	B32520
10.0	0.6 ¹⁾	B32521
15.0	0.8	B32522
22.5	0.8	B32523
27.5	0.8	B32524

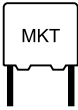
1) 0.5 mm for capacitor width $w = 4$ mm



Overview of available types

Lead spacing	5.0 mm						7.5 mm				10.0 mm				
Type	B32529						B32520				B32521				
Page	5						9				11				
Technology	s	s	s	s	s	s	s	s	s	s	s	s	s	s	w
V _R (VDC)	50	63	100	250	400	630	63	100	250	400	63	100	250	400	630
V _{rms} (VAC)	32	40	63	160	200	400	40	63	160	200	40	63	160	200	200
C _R (μF)															
0.0010															
0.0015															
0.0022															
0.0033															
0.0047															
0.0068															
0.010															
0.015															
0.022															
0.033															
0.047															
0.068															
0.10															
0.15															
0.22															
0.33															
0.47															
0.68															
1.0															
1.5															
2.2															
3.3															

Technology: s = Stacked-film technology / w = Wound capacitor technology



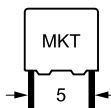
B32520 ... B32529

General purpose (stacked/wound)

Overview of available types

Lead spacing	15.0 mm						22.5 mm						27.5 mm					
Type	B32522						B32523						B32524					
Page	13						15						16					
Technology	s	s/w	s/w	s	w	w	w	w	w	w	w	w	w	w	w	w	w	
V_R (VDC)	63	100	250	400	450	630	63	100	250	400	630	63	100	250	400	630		
V_{rms} (VAC)	40	63	160	200	200	200	40	63	160	200	200	40	63	160	200	220		
C_R (μ F)					NEW							NEW						
0.033																		
0.047																		
0.068																		
0.10																		
0.15																		
0.22																		
0.33																		
0.47																		
0.68																		
1.0																		
1.5																		
2.2																		
3.3																		
4.7																		
6.8																		
10																		
15																		
22																		
33																		
47																		
68																		

Technology: s = Stacked-film technology / w = Wound capacitor technology


Ordering codes and packing units (lead spacing 5 mm)

V_R	V_{rms} $f \leq 60$ Hz VAC	C_R μF	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
50	32	0.33	$3.0 \times 6.5 \times 7.2$	B32529C5334+***	2700	2400	2000
		0.47	$3.5 \times 8.0 \times 7.2$	B32529C5474+***	2300	2000	2000
		0.68	$4.5 \times 9.5 \times 7.3$	B32529C5684+***	1800	1500	1500
		1.0	$4.5 \times 9.5 \times 7.3$	B32529C5105+***	1800	1500	1500
		1.5	$6.0 \times 10.5 \times 7.5$	B32529C5155+***	1300	1100	1000
		2.2	$7.8 \times 13.0 \times 7.8$	B32529D5225+***	1000	800	1000
		3.3	$7.8 \times 13.0 \times 7.8$	B32529D5335+***	1000	800	1000
63	40	0.0010	$2.5 \times 6.5 \times 7.2$	B32529C0102+***	3200	2800	2000
		0.0015	$2.5 \times 6.5 \times 7.2$	B32529C0152+***	3200	2800	2000
		0.0022	$2.5 \times 6.5 \times 7.2$	B32529C0222+***	3200	2800	2000
		0.0033	$2.5 \times 6.5 \times 7.2$	B32529C0332+***	3200	2800	2000
		0.0047	$2.5 \times 6.5 \times 7.2$	B32529C0472+***	3200	2800	2000
		0.0068	$2.5 \times 6.5 \times 7.2$	B32529C0682+***	3200	2800	2000
		0.010	$2.5 \times 6.5 \times 7.2$	B32529C0103+***	3200	2800	2000
		0.015	$2.5 \times 6.5 \times 7.2$	B32529C0153+***	3200	2800	2000
		0.022	$2.5 \times 6.5 \times 7.2$	B32529C0223+***	3200	2800	2000
		0.033	$2.5 \times 6.5 \times 7.2$	B32529C0333+***	3200	2800	2000
		0.047	$2.5 \times 6.5 \times 7.2$	B32529C0473+***	3200	2800	2000
		0.068	$2.5 \times 6.5 \times 7.2$	B32529C0683+***	3200	2800	2000
		0.10	$2.5 \times 6.5 \times 7.2$	B32529C0104+***	3200	2800	2000
		0.15	$2.5 \times 6.5 \times 7.2$	B32529C0154+***	3200	2800	2000
		0.22	$2.5 \times 6.5 \times 7.2$	B32529C0224+***	3200	2800	2000
		0.33	$3.0 \times 6.5 \times 7.2$	B32529C0334+***	2700	2400	2000
		0.47	$3.5 \times 8.0 \times 7.2$	B32529C0474+***	2300	2000	2000
		0.68	$4.5 \times 9.5 \times 7.3$	B32529C0684+***	1800	1500	1500
1.0	$4.5 \times 9.5 \times 7.3$	B32529C0105+***	1800	1500	1500		
1.5	$6.0 \times 10.5 \times 7.5$	B32529C0155+***	1300	1100	1000		
2.2	$7.8 \times 13.0 \times 7.8$	B32529D0225+***	1000	800	1000		

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

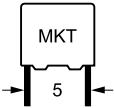
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


B32529
General purpose (stacked)
Ordering codes and packing units (lead spacing 5 mm)

V_R	V_{rms} $f \leq 60$ Hz	C_R	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF					
100	63	0.0010	$2.5 \times 6.5 \times 7.2$	B32529C1102+***	3200	2800	2000
		0.0015	$2.5 \times 6.5 \times 7.2$	B32529C1152+***	3200	2800	2000
		0.0022	$2.5 \times 6.5 \times 7.2$	B32529C1222+***	3200	2800	2000
		0.0033	$2.5 \times 6.5 \times 7.2$	B32529C1332+***	3200	2800	2000
		0.0047	$2.5 \times 6.5 \times 7.2$	B32529C1472+***	3200	2800	2000
		0.0068	$2.5 \times 6.5 \times 7.2$	B32529C1682+***	3200	2800	2000
		0.010	$2.5 \times 6.5 \times 7.2$	B32529C1103+***	3200	2800	2000
		0.015	$2.5 \times 6.5 \times 7.2$	B32529C1153+***	3200	2800	2000
		0.022	$2.5 \times 6.5 \times 7.2$	B32529C1223+***	3200	2800	2000
		0.033	$2.5 \times 6.5 \times 7.2$	B32529C1333+***	3200	2800	2000
		0.047	$2.5 \times 6.5 \times 7.2$	B32529C1473+***	3200	2800	2000
		0.068	$2.5 \times 6.5 \times 7.2$	B32529C1683+***	3200	2800	2000
		0.10	$2.5 \times 6.5 \times 7.2$	B32529C1104+***	3200	2800	2000
		0.15	$3.0 \times 6.5 \times 7.2$	B32529C1154+***	2700	2400	2000
		0.22	$3.5 \times 8.0 \times 7.2$	B32529C1224+***	2300	2000	2000
		0.33	$3.5 \times 8.0 \times 7.2$	B32529C1334+***	2300	2000	2000
		0.47	$4.5 \times 9.5 \times 7.3$	B32529C1474+***	1800	1500	1500
0.68	$6.0 \times 10.5 \times 7.5$	B32529C1684+***	1300	1100	1000		
1.0	$7.8 \times 13.0 \times 7.8$	B32529D1105+***	1000	800	1000		

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

 M = $\pm 20\%$

 K = $\pm 10\%$

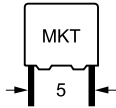
 J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


Ordering codes and packing units (lead spacing 5 mm)

V_R	V_{rms} $f \leq 60$ Hz VAC	C_R μF	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
250	160	0.0010	2.5 × 6.5 × 7.2	B32529C3102+***	3200	2800	2000
		0.0015	2.5 × 6.5 × 7.2	B32529C3152+***	3200	2800	2000
		0.0022	2.5 × 6.5 × 7.2	B32529C3222+***	3200	2800	2000
		0.0033	2.5 × 6.5 × 7.2	B32529C3332+***	3200	2800	2000
		0.0047	2.5 × 6.5 × 7.2	B32529C3472+***	3200	2800	2000
		0.0068	2.5 × 6.5 × 7.2	B32529C3682+***	3200	2800	2000
		0.010	2.5 × 6.5 × 7.2	B32529C3103+***	3200	2800	2000
		0.015	2.5 × 6.5 × 7.2	B32529C3153+***	3200	2800	2000
		0.022	2.5 × 6.5 × 7.2	B32529C3223+***	3200	2800	2000
		0.033	3.0 × 6.5 × 7.2	B32529C3333+***	2700	2400	2000
		0.047	3.5 × 8.0 × 7.2	B32529C3473+***	2300	2000	2000
		0.068	4.5 × 9.5 × 7.3	B32529C3683+***	1800	1500	1500
		0.10	4.5 × 9.5 × 7.3	B32529C3104+***	1800	1500	1500
		0.15	5.0 × 10.0 × 7.5	B32529C3154+***	1600	1400	1500
		0.22	7.8 × 13.0 × 7.8	B32529D3224+***	1000	800	1000
		0.33	7.8 × 13.0 × 7.8	B32529C3334+***	1000	800	1000
0.47	7.8 × 13.0 × 7.8	B32529C3474+***	1000	800	1000		
400	200	0.0010	2.5 × 6.5 × 7.2	B32529C6102+***	3200	2800	2000
		0.0015	2.5 × 6.5 × 7.2	B32529C6152+***	3200	2800	2000
		0.0022	2.5 × 6.5 × 7.2	B32529C6222+***	3200	2800	2000
		0.0033	2.5 × 6.5 × 7.2	B32529C6332+***	3200	2800	2000
		0.0047	2.5 × 6.5 × 7.2	B32529C6472+***	3200	2800	2000
		0.0068	2.5 × 6.5 × 7.2	B32529C6682+***	3200	2800	2000
		0.010	3.0 × 6.5 × 7.2	B32529C6103+***	2700	2400	2000
		0.015	3.5 × 8.0 × 7.2	B32529C6153+***	2300	2000	2000
		0.022	4.5 × 9.5 × 7.3	B32529C6223+***	1800	1500	1500
		0.033	5.0 × 10.0 × 7.5	B32529C6333+***	1600	1400	1500
		0.047	6.0 × 10.5 × 7.5	B32529C6473+***	1300	1100	1000
		0.068	7.8 × 13.0 × 7.8	B32529D6683+***	1000	800	1000
		0.10	7.8 × 13.0 × 7.8	B32529D6104+***	1000	800	1000

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

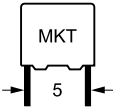
J = ±5%

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


B32529
General purpose (stacked)
Ordering codes and packing units (lead spacing 5 mm)

V_R	V_{rms} $f \leq 60$ Hz	C_R	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF					
630	400	0.0010	$2.5 \times 6.5 \times 7.2$	B32529C8102+***	3200	2800	2000
		0.0015	$2.5 \times 6.5 \times 7.2$	B32529C8152+***	3200	2800	2000
		0.0022	$2.5 \times 6.5 \times 7.2$	B32529C8222+***	3200	2800	2000
		0.0033	$3.5 \times 8.0 \times 7.2$	B32529C8332+***	2300	2000	2000
		0.0047	$3.5 \times 8.0 \times 7.2$	B32529C8472+***	2300	2000	2000
		0.0068	$3.5 \times 8.0 \times 7.2$	B32529C8682+***	2300	2000	2000
		0.010	$5.0 \times 10.0 \times 7.5$	B32529C8103+***	1600	1400	1500

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

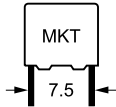
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


Ordering codes and packing units (lead spacing 7.5 mm)

V_R	V_{rms} $f \leq 60$ Hz VDC	C_R μF	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
63	40	0.068	$2.5 \times 7.0 \times 10.0$	B32520C0683+***	3200	2800	2500
		0.10	$2.5 \times 7.0 \times 10.0$	B32520C0104+***	3200	2800	2500
		0.15	$2.5 \times 7.0 \times 10.0$	B32520C0154+***	3200	2800	2500
		0.22	$2.5 \times 7.0 \times 10.0$	B32520C0224+***	3200	2800	2500
		0.33	$2.5 \times 7.0 \times 10.0$	B32520C0334+***	3200	2800	2500
		0.47	$3.0 \times 8.0 \times 10.0$	B32520C0474+***	2600	2400	2000
		0.68	$4.0 \times 8.5 \times 10.0$	B32520C0684+***	2000	1800	1500
		1.0	$5.0 \times 10.5 \times 10.0$	B32520C0105+***	1600	1400	1000
		1.5	$5.0 \times 10.5 \times 10.0$	B32520C0155+***	1600	1400	1000
		2.2	$6.0 \times 12.0 \times 10.3$	B32520C0225+***	1300	1100	750
100	63	0.047	$2.5 \times 7.0 \times 10.0$	B32520C1473+***	3200	2800	2500
		0.068	$2.5 \times 7.0 \times 10.0$	B32520C1683+***	3200	2800	2500
		0.10	$2.5 \times 7.0 \times 10.0$	B32520C1104+***	3200	2800	2500
		0.15	$3.0 \times 8.0 \times 10.0$	B32520C1154+***	2600	2400	2000
		0.22	$3.0 \times 8.0 \times 10.0$	B32520C1224+***	2600	2400	2000
		0.33	$4.0 \times 8.5 \times 10.0$	B32520C1334+***	2000	1800	1500
		0.47	$5.0 \times 10.5 \times 10.0$	B32520C1474+***	1600	1400	1000
		0.68	$6.0 \times 12.0 \times 10.3$	B32520C1684+***	1300	1100	750
		1.0	$6.0 \times 12.0 \times 10.3$	B32520C1105+***	1300	1100	750
250	160	0.015	$2.5 \times 7.0 \times 10.0$	B32520C3153+***	3200	2800	2500
		0.022	$2.5 \times 7.0 \times 10.0$	B32520C3223+***	3200	2800	2500
		0.033	$2.5 \times 7.0 \times 10.0$	B32520C3333+***	3200	2800	2500
		0.047	$2.5 \times 7.0 \times 10.0$	B32520C3473+***	3200	2800	2500
		0.068	$3.0 \times 8.0 \times 10.0$	B32520C3683+***	2600	2400	2000
		0.10	$4.0 \times 8.5 \times 10.0$	B32520C3104+***	2000	1800	1500
		0.15	$5.0 \times 10.5 \times 10.0$	B32520C3154+***	1600	1400	1000
		0.22	$6.0 \times 12.0 \times 10.3$	B32520C3224+***	1300	1100	750

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

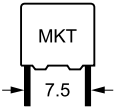
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


B32520
General purpose (stacked)
Ordering codes and packing units (lead spacing 7.5 mm)

V_R	V_{rms} $f \leq 60$ Hz	C_R	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF					
400	200	0.0010	$2.5 \times 7.0 \times 10.0$	B32520C6102+***	3200	2800	2500
		0.0015	$2.5 \times 7.0 \times 10.0$	B32520C6152+***	3200	2800	2500
		0.0022	$2.5 \times 7.0 \times 10.0$	B32520C6222+***	3200	2800	2500
		0.0033	$2.5 \times 7.0 \times 10.0$	B32520C6332+***	3200	2800	2500
		0.0047	$2.5 \times 7.0 \times 10.0$	B32520C6472+***	3200	2800	2500
		0.0068	$2.5 \times 7.0 \times 10.0$	B32520C6682+***	3200	2800	2500
		0.010	$2.5 \times 7.0 \times 10.0$	B32520C6103+***	3200	2800	2500
		0.015	$3.0 \times 8.0 \times 10.0$	B32520C6153+***	2600	2400	2000
		0.022	$4.0 \times 8.5 \times 10.0$	B32520C6223+***	2000	1800	1500
		0.033	$5.0 \times 10.5 \times 10.0$	B32520C6333+***	1600	1400	1000
		0.047	$5.0 \times 10.5 \times 10.0$	B32520C6473+***	1600	1400	1000
		0.068	$6.0 \times 12.0 \times 10.3$	B32520C6683+***	1300	1100	750

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

 M = $\pm 20\%$

 K = $\pm 10\%$

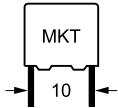
 J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


Ordering codes and packing units (lead spacing 10 mm)

V_R	V_{rms} $f \leq 60$ Hz VDC	C_R μF	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
63	40	0.47	$4.0 \times 7.0 \times 13.0$	B32521C0474+***	1000	1700	1000
		0.68	$4.0 \times 7.0 \times 13.0$	B32521C0684+***	1000	1700	1000
		1.0	$4.0 \times 9.0 \times 13.0$	B32521C0105+***	1000	1700	1000
		1.5	$5.0 \times 11.0 \times 13.0$	B32521C0155+***	830	1300	1000
		2.2	$5.0 \times 11.0 \times 13.0$	B32521C0225+***	830	1300	1000
		3.3	$6.0 \times 12.0 \times 13.0$	B32521C0335+***	680	1100	1000
100	63	0.10	$4.0 \times 7.0 \times 13.0$	B32521C1104+***	1000	1700	1000
		0.15	$4.0 \times 7.0 \times 13.0$	B32521C1154+***	1000	1700	1000
		0.22	$4.0 \times 7.0 \times 13.0$	B32521C1224+***	1000	1700	1000
		0.33	$4.0 \times 7.0 \times 13.0$	B32521C1334+***	1000	1700	1000
		0.47	$4.0 \times 9.0 \times 13.0$	B32521C1474+***	1000	1700	1000
		0.68	$5.0 \times 11.0 \times 13.0$	B32521C1684+***	830	1300	1000
250	160	1.0	$6.0 \times 12.0 \times 13.0$	B32521C1105+***	680	1100	1000
		0.033	$4.0 \times 7.0 \times 13.0$	B32521C3333+***	1000	1700	1000
		0.047	$4.0 \times 7.0 \times 13.0$	B32521C3473+***	1000	1700	1000
		0.068	$4.0 \times 7.0 \times 13.0$	B32521C3683+***	1000	1700	1000
		0.10	$4.0 \times 7.0 \times 13.0$	B32521C3104+***	1000	1700	1000
		0.15	$4.0 \times 9.0 \times 13.0$	B32521C3154+***	1000	1700	1000
		0.22	$5.0 \times 11.0 \times 13.0$	B32521C3224+***	830	1300	1000
		0.33	$5.0 \times 11.0 \times 13.0$	B32521C3334+***	830	1300	1000
400	200	0.47	$6.0 \times 12.0 \times 13.0$	B32521C3474+***	680	1100	1000
		0.010	$4.0 \times 7.0 \times 13.0$	B32521C6103+***	1000	1700	1000
		0.015	$4.0 \times 7.0 \times 13.0$	B32521C6153+***	1000	1700	1000
		0.022	$4.0 \times 7.0 \times 13.0$	B32521C6223+***	1000	1700	1000
		0.033	$4.0 \times 9.0 \times 13.0$	B32521C6333+***	1000	1700	1000
		0.047	$5.0 \times 11.0 \times 13.0$	B32521C6473+***	830	1300	1000
		0.068	$5.0 \times 11.0 \times 13.0$	B32521C6683+***	830	1300	1000
		0.10	$6.0 \times 12.0 \times 13.0$	B32521C6104+***	680	1100	1000

▽ Wound capacitor technology

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

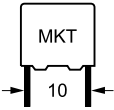
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


B32521
General purpose (stacked/wound)
Ordering codes and packing units (lead spacing 10 mm)

V_R	V_{rms} $f \leq 60 \text{ Hz}$	C_R	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF					
630	200	0.0068 ▽	4.0 × 9.0 × 13.0	B32521N8682+***	1000	1700	1000
		0.010 ▽	4.0 × 9.0 × 13.0	B32521N8103+***	1000	1700	1000
		0.015 ▽	5.0 × 11.0 × 13.0	B32521N8153+***	830	1300	1000
		0.022 ▽	5.0 × 11.0 × 13.0	B32521N8223+***	830	1300	1000
		0.033 ▽	6.0 × 12.0 × 13.0	B32521N8333+***	680	1100	1000

▽ Wound capacitor technology

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

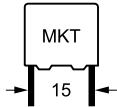
J = ±5%

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


Ordering codes and packing units (lead spacing 15 mm)

V_R	V_{rms} $f \leq 60$ Hz VAC	C_R μF	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
63	40	0.68	$5.0 \times 10.5 \times 18.0$	B32522C0684+***	1170	1300	1000
		1.0	$5.0 \times 10.5 \times 18.0$	B32522C0105+***	1170	1300	1000
		1.5	$5.0 \times 10.5 \times 18.0$	B32522C0155+***	1170	1300	1000
		2.2	$5.0 \times 10.5 \times 18.0$	B32522C0225+***	1170	1300	1000
		3.3	$6.0 \times 11.0 \times 18.0$	B32522C0335+***	960	1100	1000
		4.7	$7.0 \times 12.5 \times 18.0$	B32522C0475+***	830	900	1000
		6.8	$8.5 \times 14.5 \times 18.0$	B32522C0685+***	680	700	500
		10	$9.0 \times 17.5 \times 18.0$	B32522C0106+***	640	700	500
100	63	0.33	$5.0 \times 10.5 \times 18.0$	B32522C1334+***	1170	1300	1000
		0.47	$5.0 \times 10.5 \times 18.0$	B32522C1474+***	1170	1300	1000
		0.68	$5.0 \times 10.5 \times 18.0$	B32522C1684+***	1170	1300	1000
		1.0	$5.0 \times 10.5 \times 18.0$	B32522C1105+***	1170	1300	1000
		1.0	∇ $6.0 \times 11.0 \times 18.0$	B32522Q1105+***	960	1100	1000
		1.5	$6.0 \times 11.0 \times 18.0$	B32522C1155+***	960	1100	1000
		1.5	∇ $7.0 \times 12.5 \times 18.0$	B32522Q1155+***	830	900	1000
		2.2	$7.0 \times 12.5 \times 18.0$	B32522C1225+***	830	900	1000
		2.2	∇ $8.5 \times 14.5 \times 18.0$	B32522Q1225+***	680	700	500
		3.3	$8.5 \times 14.5 \times 18.0$	B32522C1335+***	680	700	500
		3.3	∇ $9.0 \times 17.5 \times 18.0$	B32522Q1335+***	640	700	500
		4.7	$9.0 \times 17.5 \times 18.0$	B32522C1475+***	640	700	500
		4.7	∇ $11.0 \times 18.5 \times 18.0$	B32522Q1475+***	–	550	300
250	160	0.10	$5.0 \times 10.5 \times 18.0$	B32522C3104+***	1170	1300	1000
		0.15	$5.0 \times 10.5 \times 18.0$	B32522C3154+***	1170	1300	1000
		0.22	$5.0 \times 10.5 \times 18.0$	B32522C3224+***	1170	1300	1000
		0.33	$5.0 \times 10.5 \times 18.0$	B32522C3334+***	1170	1300	1000
		0.47	$6.0 \times 11.0 \times 18.0$	B32522C3474+***	960	1100	1000
		0.68	$7.0 \times 12.5 \times 18.0$	B32522C3684+***	830	900	1000
		1.0	$8.5 \times 14.5 \times 18.0$	B32522C3105+***	680	700	500
		1.0	∇ $8.5 \times 14.5 \times 18.0$	B32522N3105+***	680	700	500
		1.5	$9.0 \times 17.5 \times 18.0$	B32522C3155+***	640	700	500
		1.5	∇ $9.0 \times 17.5 \times 18.0$	B32522N3155+***	640	700	500

∇ Wound capacitor technology

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

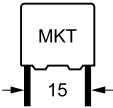
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


B32522
General purpose (stacked/wound)
Ordering codes and packing units (lead spacing 15 mm)

V_R	V_{rms} $f \leq 60$ Hz	C_R	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF					
400	200	0.047	$5.0 \times 10.5 \times 18.0$	B32522C6473+***	1170	1300	1000
		0.068	$5.0 \times 10.5 \times 18.0$	B32522C6683+***	1170	1300	1000
		0.10	$5.0 \times 10.5 \times 18.0$	B32522C6104+***	1170	1300	1000
		0.15	$6.0 \times 11.0 \times 18.0$	B32522C6154+***	960	1100	1000
		0.22	$7.0 \times 12.5 \times 18.0$	B32522C6224+***	830	900	1000
		0.33	$8.5 \times 14.5 \times 18.0$	B32522C6334+***	680	700	500
450	200	0.10	∇ $5.0 \times 10.5 \times 18.0$	B32522N6104+***	1170	1300	1000
		0.15	∇ $5.0 \times 10.5 \times 18.0$	B32522N6154+***	1170	1300	1000
		0.22	∇ $6.0 \times 11.0 \times 18.0$	B32522N6224+***	960	1100	1000
		0.33	∇ $7.0 \times 12.5 \times 18.0$	B32522N6334+***	830	900	1000
		0.47	∇ $8.5 \times 14.5 \times 18.0$	B32522N6474+***	680	700	500
		0.47	∇ $8.0 \times 14.0 \times 18.0$	B32522T6474+***	–	750	500
		0.68	∇ $9.0 \times 17.5 \times 18.0$	B32522N6684+***	640	700	500
		0.68	∇ $13.0 \times 14.0 \times 18.0$	B32522T6684+***	–	500	300
630	200	0.033	∇ $5.0 \times 10.5 \times 18.0$	B32522Q8333+***	1170	1300	1000
		0.047	∇ $5.0 \times 10.5 \times 18.0$	B32522Q8473+***	1170	1300	1000
		0.068	∇ $6.0 \times 11.0 \times 18.0$	B32522Q8683+***	960	1100	1000
		0.10	∇ $7.0 \times 12.5 \times 18.0$	B32522Q8104+***	830	900	1000
		0.15	∇ $8.5 \times 14.5 \times 18.0$	B32522Q8154+***	680	700	500
		0.15	∇ $8.0 \times 14.0 \times 18.0$	B32522T8154+***	–	750	500
		0.22	∇ $9.0 \times 17.5 \times 18.0$	B32522Q8224+***	640	700	500
		0.33	∇ $11.0 \times 18.5 \times 18.0$	B32522Q8334+***	–	550	300

∇ Wound capacitor technology

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

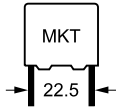
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


Ordering codes and packing units (lead spacing 22.5 mm)

V_R	V_{rms} $f \leq 60$ Hz VDC	C_R μF	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
63	40	3.3	$6.0 \times 15.0 \times 26.5$	B32523Q0335+***	680	700	720
		4.7	$7.0 \times 16.0 \times 26.5$	B32523Q0475+***	580	600	630
		6.8	$8.5 \times 16.5 \times 26.5$	B32523Q0685+***	480	500	510
		10	$10.5 \times 18.5 \times 26.5$	B32523Q0106+***	390	400	540
		15	$12.0 \times 22.0 \times 26.5$	B32523Q0156+***	–	–	450
100	63	1.5	$6.0 \times 15.0 \times 26.5$	B32523Q1155+***	680	700	720
		2.2	$6.0 \times 15.0 \times 26.5$	B32523Q1225+***	680	700	720
		3.3	$6.0 \times 15.0 \times 26.5$	B32523Q1335+***	680	700	720
		4.7	$7.0 \times 16.0 \times 26.5$	B32523Q1475+***	580	600	630
		6.8	$8.5 \times 16.5 \times 26.5$	B32523Q1685+***	480	500	510
		10	$10.5 \times 18.5 \times 26.5$	B32523Q1106+***	390	400	540
250	160	15	$12.0 \times 22.0 \times 26.5$	B32523Q1156+***	–	–	450
		0.47	$6.0 \times 15.0 \times 26.5$	B32523Q3474+***	680	700	720
		0.68	$6.0 \times 15.0 \times 26.5$	B32523Q3684+***	680	700	720
		1.0	$6.0 \times 15.0 \times 26.5$	B32523Q3105+***	680	700	720
		1.5	$7.0 \times 16.0 \times 26.5$	B32523Q3155+***	580	600	630
		2.2	$10.5 \times 16.5 \times 26.5$	B32523Q3225+***	390	400	540
400	200	3.3	$11.0 \times 20.5 \times 26.5$	B32523Q3335+***	370	350	510
		0.22	$6.0 \times 15.0 \times 26.5$	B32523Q6224+***	680	700	720
		0.33	$6.0 \times 15.0 \times 26.5$	B32523Q6334+***	680	700	720
		0.47	$7.0 \times 16.0 \times 26.5$	B32523Q6474+***	580	600	630
		0.68	$8.5 \times 16.5 \times 26.5$	B32523Q6684+***	480	500	510
		1.0	$10.5 \times 16.5 \times 26.5$	B32523Q6105+***	390	400	540
630	200	1.5	$11.0 \times 20.5 \times 26.5$	B32523Q6155+***	370	350	510
		0.10	$6.0 \times 15.0 \times 26.5$	B32523Q8104+***	680	700	720
		0.15	$6.0 \times 15.0 \times 26.5$	B32523Q8154+***	680	700	720
		0.22	$7.0 \times 16.0 \times 26.5$	B32523Q8224+***	580	600	630
		0.33	$10.5 \times 16.5 \times 26.5$	B32523Q8334+***	390	400	540
		0.47	$10.5 \times 20.5 \times 26.5$	B32523Q8474+***	390	400	540
		0.68	$12.0 \times 22.0 \times 26.5$	B32523Q8684+***	–	–	450

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

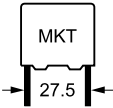
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


B32524
General purpose (wound)
Ordering codes and packing units (lead spacing 27.5 mm)

V_R	V_{rms} $f \leq 60$ Hz VAC	C_R μF	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
63	40	4.7	11.0 × 21.0 × 31.5	B32524Q0475+***	–	350	320
		6.8	11.0 × 21.0 × 31.5	B32524Q0685+***	–	350	320
		10	11.0 × 21.0 × 31.5	B32524Q0106+***	–	350	320
		15	11.0 × 21.0 × 31.5	B32524Q0156+***	–	300	280
		22	14.0 × 24.5 × 31.5	B32524Q0226+***	–	350	320
		33	18.0 × 27.5 × 31.5	B32524Q0336+***	–	–	200
		47	21.0 × 31.0 × 31.5	B32524Q0476+***	–	–	180
		68	22.0 × 36.5 × 31.5	B32524Q0686+***	–	–	160
100	63	4.7	11.0 × 21.0 × 31.5	B32524Q1475+***	–	350	320
		6.8	11.0 × 21.0 × 31.5	B32524Q1685+***	–	350	320
		10	11.0 × 21.0 × 31.5	B32524Q1106+***	–	350	320
		15	11.0 × 21.0 × 31.5	B32524Q1156+***	–	300	280
		22	14.0 × 24.5 × 31.5	B32524Q1226+***	–	350	320
		33	18.0 × 27.5 × 31.5	B32524Q1336+***	–	–	200
		47	21.0 × 31.0 × 31.5	B32524Q1476+***	–	–	180
		68	22.0 × 36.5 × 31.5	B32524Q1686+***	–	–	160
250	160	1.5	11.0 × 21.0 × 31.5	B32524Q3155+***	–	350	320
		2.2	11.0 × 21.0 × 31.5	B32524Q3225+***	–	350	320
		3.3	11.0 × 21.0 × 31.5	B32524Q3335+***	–	350	320
		4.7	11.0 × 21.0 × 31.5	B32524Q3475+***	–	350	320
		6.8	14.0 × 24.5 × 31.5	B32524Q3685+***	–	250	260
		10	18.0 × 27.5 × 31.5	B32524Q3106+***	–	–	200
		15	19.0 × 30.0 × 31.5	B32524Q3156+***	–	–	180
		400	200	0.68	11.0 × 19.0 × 31.5	B32524Q6684+***	–
1.0	11.0 × 19.0 × 31.5			B32524Q6105+***	–	350	320
1.5	11.0 × 19.0 × 31.5			B32524Q6155+***	–	350	320
2.2	12.5 × 21.5 × 31.5			B32524Q6225+***	–	300	280
3.3	15.0 × 24.5 × 31.5			B32524Q6335+***	–	–	240
4.7	18.0 × 27.5 × 31.5			B32524Q6475+***	–	–	200
6.8	21.0 × 31.0 × 31.5			B32524Q6685+***	–	–	180

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

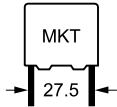
J = ±5%

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)


Ordering codes and packing units (lead spacing 27.5 mm)

V_R	V_{rms} $f \leq 60$ Hz	C_R	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF					
630	220	0.33	11.0 × 21.0 × 31.5	B32524Q8334+***	–	350	320
		0.47	11.0 × 21.0 × 31.5	B32524Q8474+***	–	350	320
		0.68	11.0 × 21.0 × 31.5	B32524Q8684+***	–	350	320
		1.0	14.0 × 24.5 × 31.5	B32524Q8105+***	–	250	260
		1.5	18.0 × 27.5 × 31.5	B32524Q8155+***	–	–	200
		2.2	21.0 × 31.0 × 31.5	B32524Q8225+***	–	–	180

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

M = $\pm 20\%$

K = $\pm 10\%$

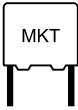
J = $\pm 5\%$

*** = Packaging code:

289 = Ammo pack

189 = Reel

000 = Untaped (lead length 6 – 1 mm)



B32520 ... B32529

General purpose (stacked/wound)

Technical data

Operating temperature range	Max. operating temperature $T_{op,max}$		+125 °C	
	Upper category temperature T_{max}		+125 °C	
	Lower category temperature T_{min}		-55 °C	
	Rated temperature T_R		+85 °C	
Dissipation factor $\tan \delta$ (in 10^{-3}) at 20 °C (upper limit values)	at	$C_R \leq 0.1 \mu F$	$0.1 \mu F < C_R \leq 1 \mu F$	$C_R > 1 \mu F$
	1 kHz	8	8	10
	10 kHz	15	15	—
	100 kHz	30	—	—
Insulation resistance R_{ins} or time constant $\tau = C_R \cdot R_{ins}$ at 20 °C, rel. humidity $\leq 65\%$ (minimum as-delivered values)	V_R	$C_R \leq 0.33 \mu F$		$C_R > 0.33 \mu F$
	≤ 100 VDC	3750 M Ω		1250 s
	≥ 250 VDC	7500 M Ω		2500 s
DC test voltage	$1.4 \cdot V_R, 2$ s			
Category voltage V_C (continuous operation with V_{DC} or V_{AC} at $f \leq 60$ Hz)	T_A (°C)	DC voltage derating		AC voltage derating
	$T_A \leq 85$	$V_C = V_R$		$V_{C,rms} = V_{rms}$
	$85 < T_A \leq 125$	$V_C = V_R \cdot (165 - T_A) / 80$		$V_{C,rms} = V_{rms} \cdot (165 - T_A) / 80$
Operating voltage V_{op} for short operating periods (V_{DC} or V_{AC} at $f \leq 60$ Hz)	T_A (°C)	DC voltage (max. hours)		AC voltage (max. hours)
	$T_A \leq 100$	$V_{op} = 1.25 \cdot V_C$ (2000 h)		$V_{op} = 1.0 \cdot V_{C,rms}$ (2000 h)
	$100 < T_A \leq 125$	$V_{op} = 1.25 \cdot V_C$ (1000 h)		$V_{op} = 1.0 \cdot V_{C,rms}$ (1000 h)
Damp heat test	56 days/40 °C/93% relative humidity			
Limit values after damp heat test	Capacitance change $ \Delta C/C $		$\leq 5\%$	
	Dissipation factor change $\Delta \tan \delta$		$\leq 5 \cdot 10^{-3}$ (at 1 kHz)	
	Insulation resistance R_{ins}		$\geq 50\%$ of minimum	
	or time constant $\tau = C_R \cdot R_{ins}$		as-delivered values	
Reliability:				
Failure rate λ	1 fit ($\leq 1 \cdot 10^{-9}/h$) at $0.5 \cdot V_R, 40$ °C			
Service life t_{SL}	200 000 h at $1.0 \cdot V_R, 40$ °C			
	For conversion to other operating conditions and temperatures, refer to chapter "Quality assurance", page .			
Failure criteria:				
Total failure	Short circuit or open circuit			
Failure due to variation of parameters	Capacitance change $ \Delta C/C $		$> 10\%$	
	Dissipation factor $\tan \delta$		$> 2 \cdot$ upper limit value	
	Insulation resistance R_{ins}		< 150 M Ω ($C_R \leq 0.33 \mu F$)	
	or time constant $\tau = C_R \cdot R_{ins}$		< 50 s ($C_R > 0.33 \mu F$)	

Pulse handling capability

"dV/dt" represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/ μ s.

"k₀" represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in V²/ μ s.

Note:

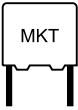
The values of dV/dt and k₀ provided below must not be exceeded in order to avoid damaging the capacitor.

dV/dt values

Lead spacing		5 mm	7.5 mm	10 mm		15 mm		22.5 mm	27.5 mm
Technology		Stacked	Stacked	Stacked	Wound	Stacked	Wound	Wound	Wound
V _R VDC	V _{rms} VAC	dV/dt in V/ μ s							
50	32	200	–	–	–	–	–	–	–
63	40	250	120	50	–	30	–	3	1
100	63	300	150	75	–	50	5	4	3
250	160	400	200	150	–	100	10	6	4.5
400	200	600	275	175	–	125	–	10	7.5
450	200	–	–	–	–	–	20	–	–
630	400	800	–	–	20	–	25	15	12

k₀ values

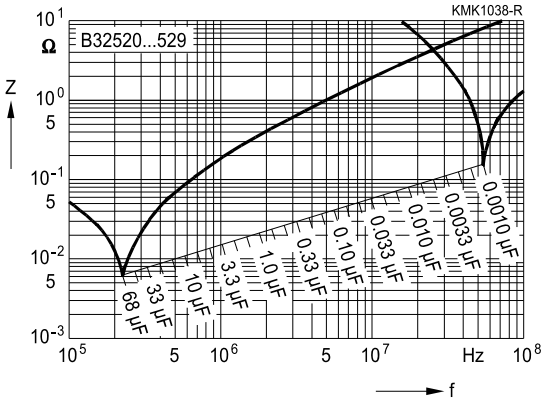
Lead spacing		5 mm	7.5 mm	10 mm		15 mm		22.5 mm	27.5 mm
Technology		Stacked	Stacked	Stacked	Wound	Stacked	Wound	Wound	Wound
V _R VDC	V _{rms} VAC	k ₀ in V ² / μ s							
50	32	20 000	–	–	–	–	–	–	–
63	40	30 000	15 000	6 300	–	3 800	–	375	130
100	63	60 000	30 000	15 000	–	10 000	850	750	600
250	160	200 000	100 000	75 000	–	50 000	5 000	3 000	2 250
400	200	500 000	220 000	140 000	–	100 000	–	8 000	6 000
450	200	–	–	–	–	–	15 000	–	–
630	400	1 000 000	–	–	25 000	–	30 000	18 000	15 000

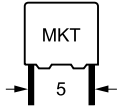


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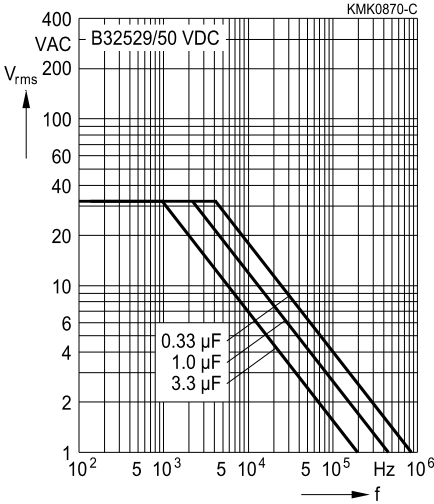
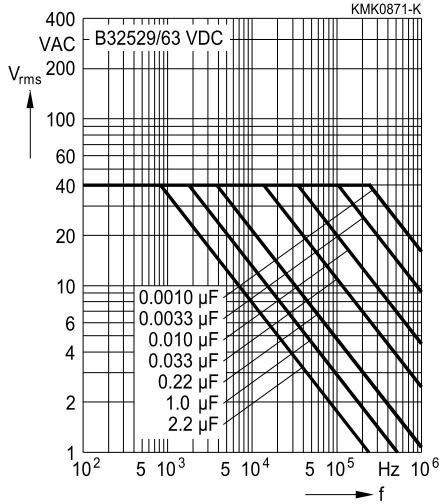
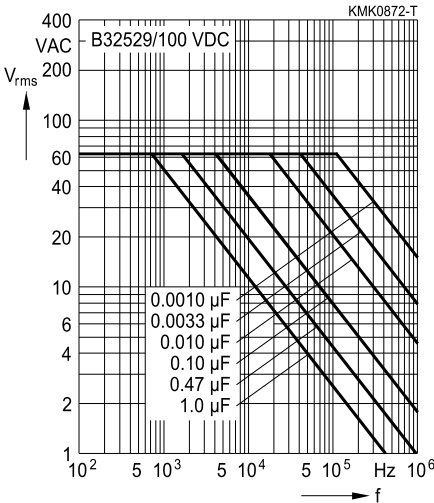
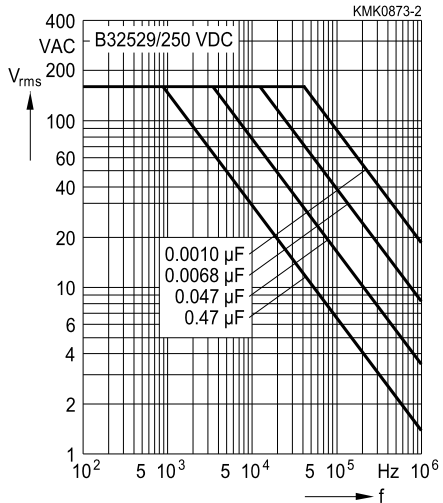
General purpose (stacked/wound)

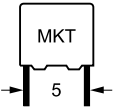
Impedance Z versus frequency f
(typical values)




Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 55^\circ C$)

 For $T_A > 55^\circ C$, please refer to "General technical information", section 3.2.3.

Lead spacing 5 mm
50 VDC/32 VAC

63 VDC/40 VAC

100 VDC/63 VAC

250 VDC/160 VAC




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General purpose (stacked)

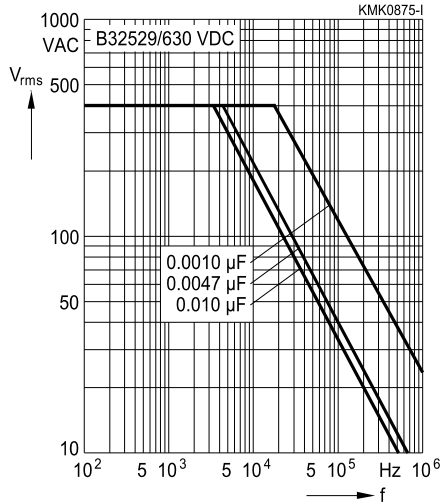
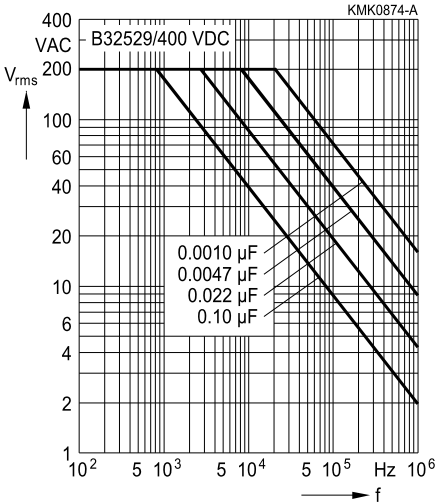
Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 55^\circ\text{C}$)

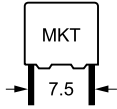
For $T_A > 55^\circ\text{C}$, please refer to "General technical information", section 3.2.3.

Lead spacing 5 mm

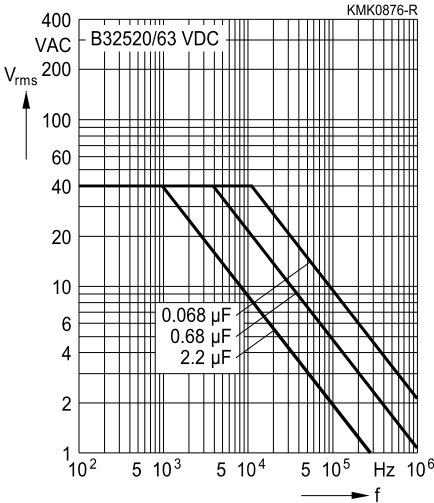
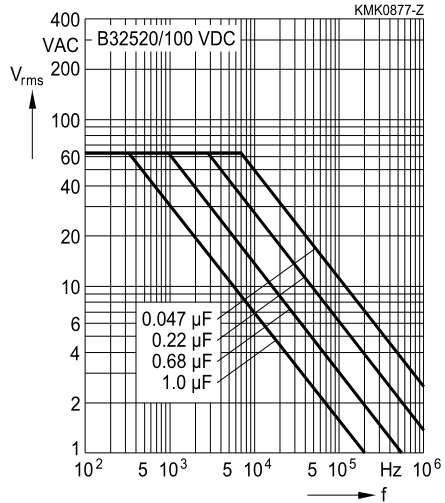
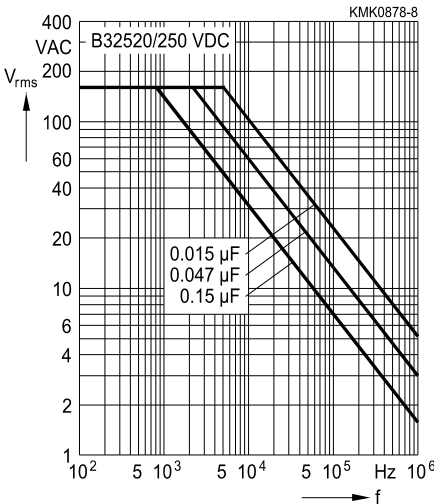
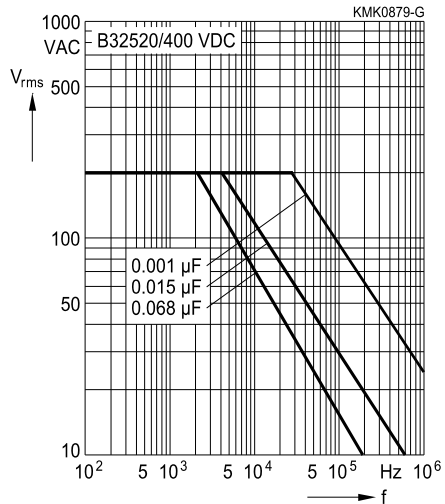
400 VDC/200 VAC

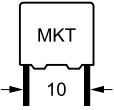
630 VDC/400 VAC




Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 55^\circ\text{C}$)

 For $T_A > 55^\circ\text{C}$, please refer to "General technical information", section 3.2.3.

Lead spacing 7.5 mm
63 VDC/40 VAC

100 VDC/63 VAC

250 VDC/160 VAC

400 VDC/200 VAC




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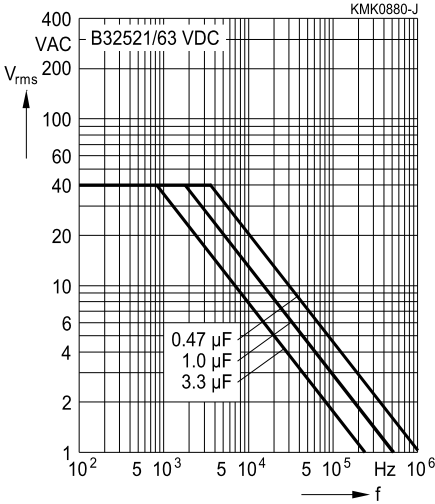
General purpose (stacked/wound)

Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 55^\circ C$)

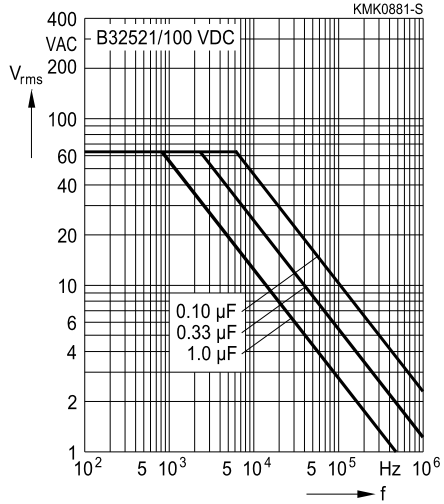
For $T_A > 55^\circ C$, please refer to "General technical information", section 3.2.3.

Lead spacing 10 mm

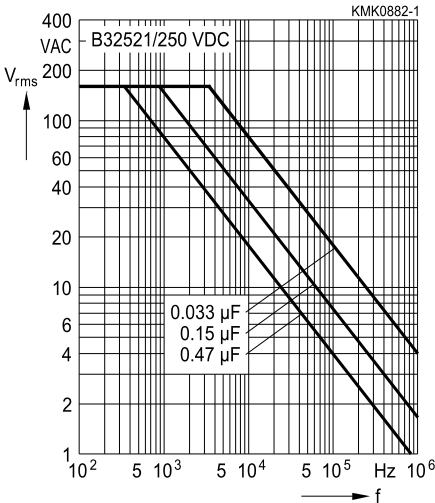
63 VDC/40 VAC



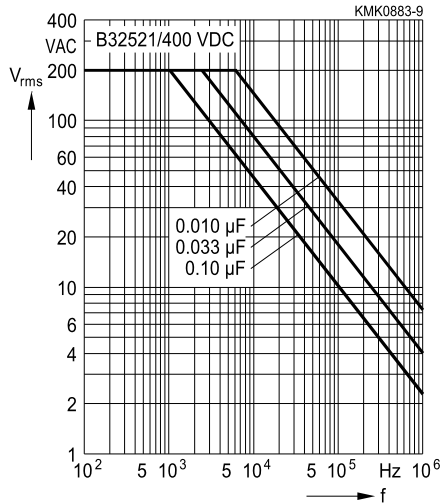
100 VDC/63 VAC

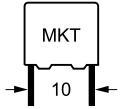


250 VDC/160 VAC



400 VDC/200 VAC





Permissible AC voltage V_{rms} versus frequency f (for sinusoidal waveforms, $T_A \leq 55^\circ\text{C}$)
 For $T_A > 55^\circ\text{C}$, please refer to "General technical information", section 3.2.3.

Lead spacing 10 mm

630 VDC/200 VAC

