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

Climatic
- Max. operating temperature: 125 °C
- Climatic category (IEC 60068-1:2013): 55/125/56

Construction
- Dielectric: polyethylene terephthalate (polyester, PET)
- Stacked-film technology for lead spacing 5 to 15 mm (= code C, D or E in digit 7 of ordering code)
- Wound capacitor technology for lead spacing 10 to 37.5 mm (= code N, Q or R in digit 7 of ordering code)
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

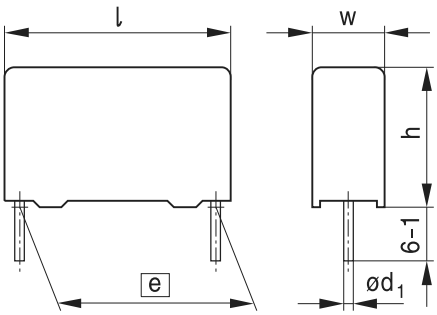
Features
- High pulse strength
- High contact reliability
- RoHS-compatible
- Halogen-free capacitors available on request
- AEC-Q200D compliant

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

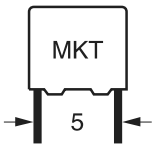


KMK0835-P-E

Dimensions in mm

Lead spacing e ±0.4	Lead diameter d_1 ±0.05	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
37.5	1.0	B32526

1) 0.5 mm for capacitor width w = 4 mm. Exception for B32521D series.



B32529

General purpose (stacked)

Ordering codes and packing units (lead spacing 5 mm)

V_R V DC	V_{RMS} f ≤60 Hz V AC	C_R µF	Max. dimensions w × h × l mm	Ordering code (composition see below)	Ammo pack pcs./MOQ	Reel pcs./MOQ	Untaped pcs./MOQ
400	200	0.0010	2.5 × 6.5 × 7.3	B32529C6102+***	12800	11200	8000
		0.0015	2.5 × 6.5 × 7.3	B32529C6152+***	12800	11200	8000
		0.0022	2.5 × 6.5 × 7.3	B32529C6222+***	12800	11200	8000
		0.0033	2.5 × 6.5 × 7.3	B32529C6332+***	12800	11200	8000
		0.0047	2.5 × 6.5 × 7.3	B32529C6472+***	12800	11200	8000
		0.0068	2.5 × 6.5 × 7.3	B32529C6682+***	12800	11200	8000
		0.010	3.0 × 6.5 × 7.3	B32529E6103+***	10800	9600	8000
		0.015	3.0 × 6.5 × 7.3	B32529E6153+***	10800	9600	8000
		0.022	3.5 × 8.0 × 7.3	B32529E6223+***	9200	8000	8000
		0.033	4.5 × 9.5 × 7.3	B32529E6333+***	7200	6000	6000
		0.047	4.5 × 9.5 × 7.3	B32529E6473+***	7200	6000	6000
		0.068	6.0 × 10.5 × 7.5	B32529E6683+***	5200	4400	4000
		0.10	7.8 × 13.0 × 7.8	B32529E6104+***	4000	3200	4000
		0.15	7.8 × 13.0 × 7.8	B32529E6154+***	4000	3200	4000
630	400	0.0010	2.5 × 6.5 × 7.3	B32529C8102+***	12800	11200	8000
		0.0015	2.5 × 6.5 × 7.3	B32529C8152+***	12800	11200	8000
		0.0022	2.5 × 6.5 × 7.3	B32529C8222+***	12800	11200	8000
		0.0033	3.5 × 8.0 × 7.3	B32529C8332+***	9200	8000	8000
		0.0047	3.5 × 8.0 × 7.3	B32529C8472+***	9200	8000	8000
		0.0068	3.5 × 8.0 × 7.3	B32529C8682+***	9200	8000	8000
		0.010	5.0 × 10.0 × 7.5	B32529C8103+***	6400	5600	6000
		0.015	5.0 × 10.0 × 7.5	B32529C8153+***	6400	5600	6000
		0.022	7.8 × 13.0 × 7.8	B32529C8223+***	5200	4400	4000
		0.033	7.8 × 13.0 × 7.8	B32529C8333+***	4000	3200	4000

MOQ = Minimum Order Quantity, consisting of 4 packing units.
Further E series and intermediate capacitance values on request.

Composition of ordering code

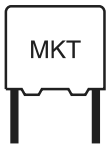
+ = Capacitance tolerance code:
- M = ±20%
- K = ±10%
- J = ±5%

*** = Packaging code:
- 289 = Ammo pack
- 189 = Reel
- 000 = Untaped (standard lead length 6 −1 mm)

Technical data

Reference standard: IEC 60384-2:2005. AEC-Q200D compliance on request. All data given at T = 20 °C, unless otherwise specified.

Rated temperature T_R	+85 °C			
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 δ (in 10^{-3}) at 20 °C (upper limit values)	at	$C_R \leq 0.1$ µF	0.1 µF < $C_R \leq 1$ µF	$C_R > 1$ µF
	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 ≤ 65% (minimum as-delivered values)	V_R	$C_R \leq 0.33$ µF	$C_R > 0.33$ µF	
	≤ 100 V DC	3750 MΩ	1250 s	
	≥ 250 V DC	7500 MΩ	2500 s	
DC test voltage	1.4 · V_R, 2 s			
Category voltage V_C (continuous operation with V_{DC} or V_{AC} at f ≤ 60 Hz)	T_{op} (°C)	DC voltage derating	AC voltage derating	
	$T_{op} \leq 85$	$V_C = V_R$	$V_{C,RMS} = V_{RMS}$	
	$85 < T_{op} \leq 125$	$V_C = V_R \cdot (165 - T_{op})/80$	$V_{C,RMS} = V_{RMS} \cdot (165 - T_{op})/80$	
Operating voltage V_{op} for short operating periods (V_{DC} or V_{AC} at f ≤ 60 Hz)	T_{op} (°C)	DC voltage (max. hours)	AC voltage (max. hours)	
	$T_{op} \leq 100$	$V_{op} = 1.25 \cdot V_C$ (2000 h)	$V_{op} = 1.0 \cdot V_{C,RMS}$ (2000 h)	
	$100 < T_{op} \leq 125$	$V_{op} = 1.25 \cdot V_C$ (1000 h)	$V_{op} = 1.0 \cdot V_{C,RMS}$ (1000 h)	
Biased humidity	1000 h / 40 °C / 93% relative humidity with $V_{R,DC}$			
Limit value after biased humidity test	Capacitance change $\lvert\Delta C/C\rvert$	≤ 5%		
	Dissipation factor change Δ tan δ	≤ 5 · 10^{-3} (at 1 kHz)		
	Insulation resistance R_{ins}	≥ 50% of minimum		
	or time constant $\tau = C_R \cdot R_{ins}$	as-delivered values		
Reliability:				
Failure rate λ	1 fit (≤ 1 · 10^{-9}/h) at 0.5 · V_R, 40 °C			
Service life t_{SL}	200 000 h at 1.0 · V_R, 85 °C			
	For conversion to other operating conditions and temperatures, refer to chapter "Quality, 2 Reliability".			
Failure criteria:				
Total failure	Short circuit or open circuit			
Failure due to variation of parameters	Capacitance change $\lvert\Delta C/C\rvert$	> 10%		
	Dissipation factor tan δ	> 2 · upper limit value		
	Insulation resistance R_{ins}	< 150 MΩ ($C_R \leq 0.33$ µF)		
	or time constant $\tau = C_R \cdot R_{ins}$	< 50 s ($C_R > 0.33$ µF)		



Pulse handling capability

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

"k_0" represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in $V^2/\mu s$.

Note:
The values of dV/dt and k_0 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	37.5 mm
Technology		S	S	S	W	S	W	W	W	W
V_R V DC	V_{RMS} V AC	dV/dt in V/µs								
50	32	200	–	–	–	–	–	–	–	–
63	40	250	120	50	–	30	–	3	1	0.8
100	63	300	150	75	–	50	5	4	3	1
250	160	400	200	150	–	100	10	8	5	4
400	200	600	275	175	–	125	–	10	8.5	6
450	200	–	–	–	–	–	20	–	–	–
630	400	800	–	320	–	150	–	15	12	–

S = Stacked, W = Wound

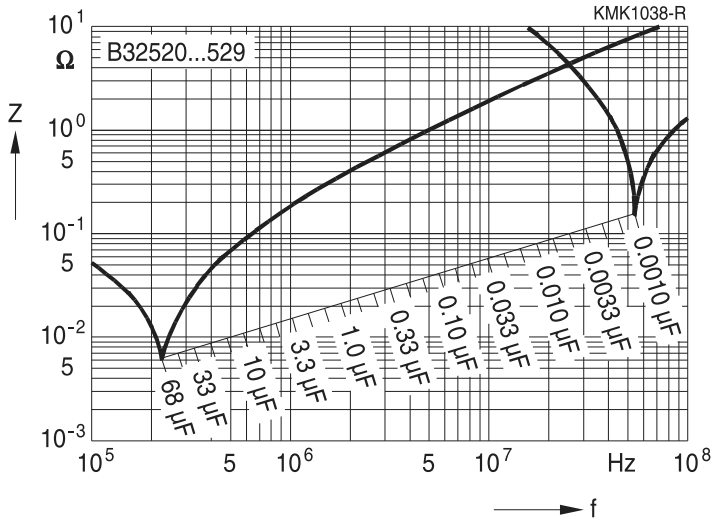
k_0 values

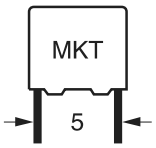
Lead spacing		5 mm	7.5 mm	10 mm		15 mm		22.5 mm	27.5 mm	37.5 mm
Technology		S	S	S	W	S	W	W	W	W
V_R V DC	V_{RMS} V AC	k_0 in $V^2/\mu s$								
50	32	20000	–	–	–	–	–	–	–	–
63	40	30000	15000	6300	–	3800	–	375	130	100
100	63	60000	30000	15000	–	10000	850	800	600	200
250	160	200000	100000	75000	–	50000	5000	4000	2500	2000
400	200	500000	220000	140000	–	100000	–	10000	8500	6000
450	200	–	–	–	–	–	15000	–	–	–
630	400	1000000	–	400000	–	190000	–	18000	15000	–

S = Stacked, W = Wound

Impedance Z versus frequency f

(typical values)





B32529

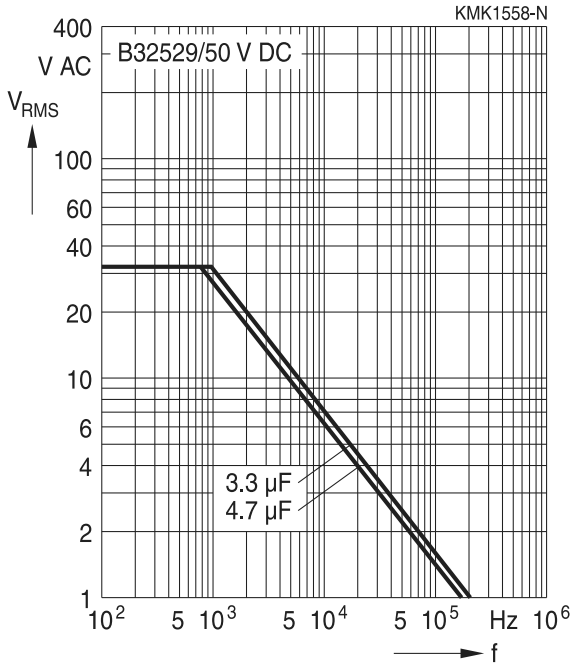
General purpose (stacked)

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

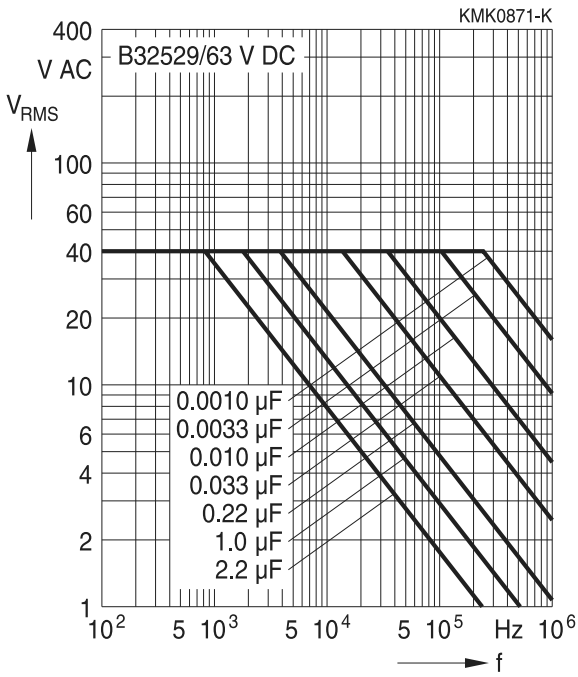
For T_A >55 °C, please refer to "General technical information", section 3.2.3.

Lead spacing 5 mm

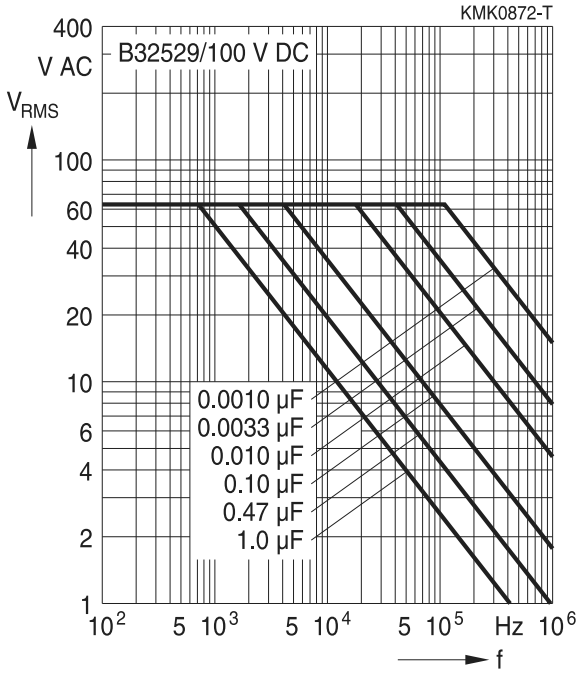
50 V DC/32 V AC



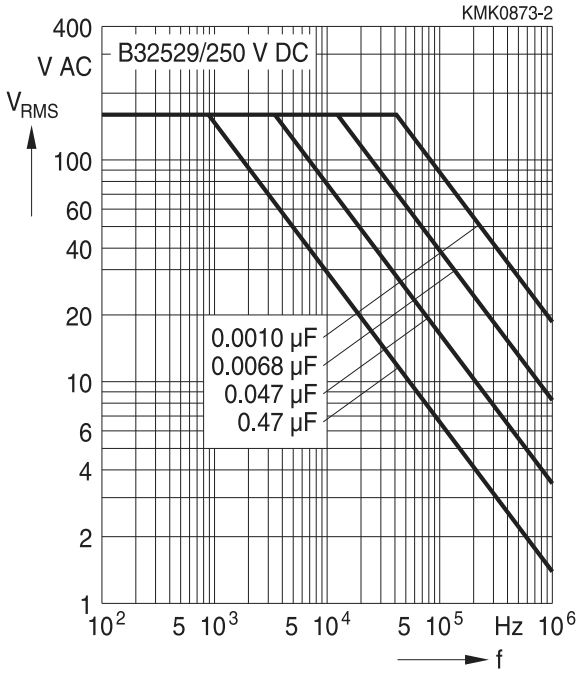
63 V DC/40 V AC

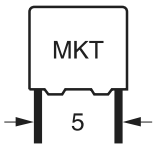


100 V DC/63 V AC



250 V DC/160 V AC



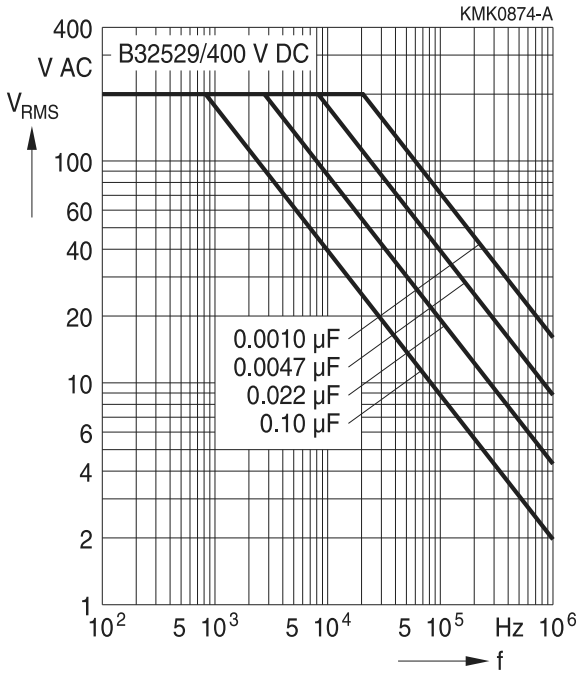


Permissible AC voltage V_{RMS} versus frequency f (for sinusoidal waveforms, $T_A \leq 55$ °C)

For T_A >55 °C, please refer to "General technical information", section 3.2.3.

Lead spacing 5 mm

400 V DC/200 V AC



630 V DC/400 V AC