



Film Capacitors

Metallized Polyester Film Capacitors (MKT)

Series/Type: B32231
Date: August 2004

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General purpose (wound)
Typical applications

- Smoothing
- Filtering

Climatic

- Max. operating temperature: 100 °C
- Climatic category (IEC 60068-1): 40/100/21

Construction

- Dielectric: polyethylene terephthalate (polyester, PET)
- Flat winding
- Insulating sleeve
- Face ends sealed with epoxy resin

Terminals

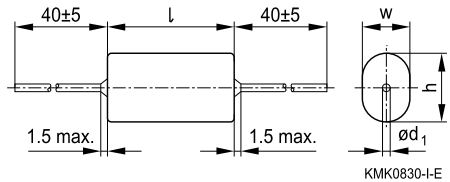
- Central axial wire leads, lead-free tinned

Marking

Manufacturer, series number, rated capacitance (coded), capacitance tolerance (code letter), rated DC voltage, date of manufacture (coded)

Delivery mode

Bulk (untaped)

Dimensional drawing


Dimensions in mm

Width w_{\max}	≤ 6.0	$> 6.0 \dots 13.0$
Lead diameter d_1	0.6	0.8

When bending leads take care to leave a clearance of 1 mm to the capacitor body.



Overview of available types

Type	B32231			
V_R (VDC)	100	250	400	630
V_{rms} (VAC)	63	160	200	200
C_R (μF)				
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				


B32231
General purpose (wound)
Ordering codes and packing units

V_R	V_{rms} $f \leq 60 \text{ Hz}$	C_R	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Untaped pcs./unit
VDC	VAC	μF			
100	63	0.15	$5.5 \times 8.5 \times 14.0$	B32231D1154+000	1500
		0.22	$5.5 \times 8.5 \times 14.0$	B32231D1224+000	1500
		0.33	$5.5 \times 8.5 \times 14.0$	B32231D1334+000	1500
		0.47	$5.5 \times 9.0 \times 19.0$	B32231D1474+000	1500
		0.68	$5.5 \times 9.0 \times 19.0$	B32231D1684+000	1500
		1.0	$7.0 \times 12.0 \times 19.0$	B32231D1105+000	1000
		1.5	$8.0 \times 13.0 \times 19.0$	B32231D1155+000	1000
		2.2	$8.0 \times 13.0 \times 27.0$	B32231D1225+000	1000
		3.3	$8.0 \times 15.0 \times 27.0$	B32231D1335+000	1000
		4.7	$10.0 \times 18.0 \times 32.0$	B32231D1475+000	500
		6.8	$10.0 \times 20.0 \times 32.0$	B32231D1685+000	500
	10	$13.0 \times 23.0 \times 32.0$	B32231D1106+000	250	
250	160	0.10	$5.5 \times 8.5 \times 14.0$	B32231D3104+000	1500
		0.15	$5.5 \times 8.5 \times 14.0$	B32231D3154+000	1500
		0.22	$5.5 \times 9.0 \times 19.0$	B32231D3224+000	1500
		0.33	$5.5 \times 9.0 \times 19.0$	B32231D3334+000	1500
		0.47	$6.0 \times 12.0 \times 19.0$	B32231D3474+000	1000
		0.68	$7.5 \times 12.0 \times 19.0$	B32231D3684+000	1000
		1.0	$7.5 \times 12.0 \times 27.0$	B32231D3105+000	1000
		1.5	$8.5 \times 14.0 \times 27.0$	B32231D3155+000	1000
		2.2	$8.5 \times 16.0 \times 27.0$	B32231D3225+000	500
		3.3	$10.0 \times 18.0 \times 32.0$	B32231D3335+000	500
		4.7	$13.0 \times 20.0 \times 32.0$	B32231D3475+000	250

Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:

 M = $\pm 20\%$

 K = $\pm 10\%$

 J = $\pm 5\%$ (on request)

Ordering codes and packing units

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)	Untaped pcs./unit
400	200	0.10	$5.5 \times 8.5 \times 19.0$	B32231D6104+000	1500
		0.15	$5.5 \times 9.0 \times 19.0$	B32231D6154+000	1500
		0.22	$7.0 \times 12.0 \times 19.0$	B32231D6224+000	1000
		0.33	$7.0 \times 12.0 \times 19.0$	B32231D6334+000	1000
		0.47	$7.0 \times 12.0 \times 27.0$	B32231D6474+000	1000
		0.68	$8.0 \times 14.0 \times 27.0$	B32231D6684+000	1000
		1.0	$9.0 \times 16.0 \times 27.0$	B32231D6105+000	500
		1.5	$10.0 \times 18.0 \times 32.0$	B32231D6155+000	250
		2.2	$13.0 \times 22.0 \times 32.0$	B32231D6225+000	250
630	200	0.10	$6.0 \times 11.0 \times 19.0$	B32231D8104+000	1000
		0.15	$7.5 \times 12.0 \times 19.0$	B32231D8154+000	1000
		0.22	$8.0 \times 13.0 \times 19.0$	B32231D8224+000	1000
		0.33	$8.0 \times 13.0 \times 27.0$	B32231D8334+000	1000
		0.47	$8.0 \times 14.0 \times 27.0$	B32231D8474+000	500
		0.68	$10.0 \times 16.0 \times 32.0$	B32231D8684+000	500
		1.0	$13.0 \times 18.0 \times 32.0$	B32231D8105+000	250

Further E series and intermediate capacitance values on request.

Composition of ordering code

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General purpose (wound)
Technical data

Operating temperature range	Max. operating temperature $T_{op,max}$		+100 °C
	Upper category temperature T_{max}		+100 °C
	Lower category temperature T_{min}		-40 °C
	Rated temperature T_R		+85 °C
Dissipation factor $\tan \delta$ (in 10^{-3}) at 20 °C (upper limit values)	at	$0.10 \mu\text{F} < C_R \leq 1 \mu\text{F}$	$C_R > 1 \mu\text{F}$
	1 kHz	10	10
	10 kHz	25	–
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	$C_R \leq 0.33 \mu\text{F}$	$C_R > 0.33 \mu\text{F}$
	100 VDC	3750 M Ω	1250 s
	≥ 250 VDC	7500 M Ω	2500 s
DC test voltage	$1.4 \cdot V_R, 2 \text{ s}$		
Category voltage V_C (continuous operation with V_{DC} or V_{AC} at $f \leq 60 \text{ Hz}$)	T_A (°C)	DC voltage derating	AC voltage derating
	$T_A \leq 85$ $85 < T_A \leq 100$	$V_C = V_R$ $V_C = V_R \cdot (165 - T_A)/80$	$V_{C,rms} = V_{rms}$ $V_{C,rms} = V_{rms} \cdot (165 - T_A)/80$
Operating voltage V_{op} for short operating periods (V_{DC} or V_{AC} at $f \leq 60 \text{ Hz}$)	T_A (°C)	DC voltage (max. hours)	AC voltage (max. hours)
	$T_A \leq 100$	$V_{op} = 1.25 \cdot V_C$ (2000 h)	$V_{op} = 1.0 \cdot V_{C,rms}$ (1000 h)
Damp heat test Limit values after damp heat test	21 days/40 °C/93% relative humidity		
	Capacitance change $ \Delta C/C $	$\leq 5\%$	
	Dissipation factor change $\Delta \tan \delta$	$\leq 5 \cdot 10^{-3}$ (at 1 kHz) $\leq 7 \cdot 10^{-3}$ (at 10 kHz)	
	Insulation resistance R_{ins} or time constant $\tau = C_R \cdot R_{ins}$	$\geq 20\%$ of minimum as-delivered values	



Pulse handling capability

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

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

Note:

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

dV/dt values

Length of capacitor		14 mm	19 mm	27 mm	32 mm
V _R VDC	V _{rms} VAC	dV/dt in V/μs			
100	63	6	3	2	1.5
250	160	10	5	3	2.5
400	200	–	7	4	3
630	200	–	10	7	5

k₀ values

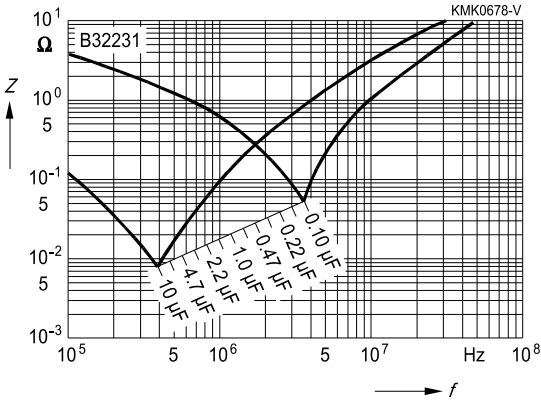
Length of capacitor		14 mm	19 mm	27 mm	32 mm
V _R VDC	V _{rms} VAC	k ₀ in V ² /μs			
100	63	1 200	600	400	300
250	160	5 000	2 500	1 500	1 250
400	200	–	5 600	3 200	2 400
630	200	–	12 500	8 800	6 300



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General purpose (wound)

Impedance Z versus frequency f
(typical values)



Permissible AC voltage V_{rms} versus frequency f

Values can be obtained on request. In specific cases please provide a scaled voltage/ time graph and state operating conditions.