



Film Capacitors

Metallized Polyester Film Capacitors (MKT)

Series/Type: B32232
Date: August 2004

© EPCOS AG 2004. Reproduction, publication and dissemination of this data sheet, enclosures hereto and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

Typical applications

- Smoothing
- Filtering

Climatic

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

Construction

- Dielectric: polyethylene terephthalate (polyester, PET)
- Cylindrical 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

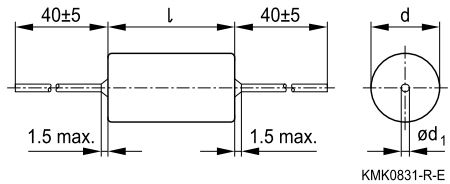
Bulk (untaped)
Taped (reel)

For notes on taping, refer to chapter "Taping and packing".

Detail specification

DIN 45910-112

Dimensional drawing



Dimensions in mm

Diameter d	Lead diameter d ₁
≤ 7.0	0.6
> 7.0	0.8

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



Overview of available types

Type	B32232			
V_R (VDC)	100	250	400	630
V_{rms} (VAC)	63	160	200	200
C_R (μF)				
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				


B32232
General purpose (wound)
Ordering codes and packing units

V_R	V_{rms} $f \leq 60 \text{ Hz}$	C_R	Max. dimensions $d \times l$ mm	Ordering code (composition see below)	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF				
100	63	0.10	6.0×14.0	B32232A1104+***	1000	500
		0.15	6.0×14.0	B32232A1154+***	1000	500
		0.22	6.0×14.0	B32232A1224+***	1000	500
		0.33	6.0×19.0	B32232A1334+***	1000	500
		0.47	6.5×19.0	B32232A1474+***	1000	500
		0.68	7.0×19.0	B32232A1684+***	1000	500
		1.0	8.5×19.0	B32232A1105+***	1000	500
		1.5	8.0×27.0	B32232A1155+***	1000	500
		2.2	9.5×27.0	B32232A1225+***	800	500
		3.3	11.5×27.0	B32232A1335+***	500	500
		4.7	12.0×32.0	B32232A1475+***	500	500
250	160	6.8	14.0×32.0	B32232A1685+***	500	250
		0.10	6.0×14.0	B32232A3104+***	1000	500
		0.15	7.0×14.0	B32232A3154+***	1000	500
		0.22	6.0×19.0	B32232A3224+***	1000	500
		0.33	8.0×19.0	B32232A3334+***	1000	500
		0.47	7.5×19.0	B32232A3474+***	1000	500
		0.68	8.0×27.0	B32232A3684+***	1000	500
		1.0	10.0×27.0	B32232A3105+***	500	500
		1.5	11.0×32.0	B32232A3155+***	500	500
		2.2	10.5×32.0	B32232A3225+***	500	500
		3.3	14.0×32.0	B32232A3335+***	500	250
400	200	4.7	16.5×32.0	B32232A3475+000	—	250
		6.8	16.0×42.0	B32232A3685+000	—	200
		0.10	7.0×19.0	B32232A6104+***	1000	500
		0.15	8.5×19.0	B32232A6154+***	1000	500
		0.22	8.0×27.0	B32232A6224+***	1000	500
		0.33	9.5×27.0	B32232A6334+***	800	500
		0.47	11.0×27.0	B32232A6474+***	500	500
		0.68	11.5×32.0	B32232A6684+***	500	500
		1.0	13.5×32.0	B32232A6105+***	500	500

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:

189 = Reel

000 = Untaped

Ordering codes and packing units

V_R	V_{rms} $f \leq 60 \text{ Hz}$	C_R	Max. dimensions $d \times l$ mm	Ordering code (composition see below)	Reel pcs./unit	Untaped pcs./unit
VDC	VAC	μF				
630	200	0.033	6.5×19.0	B32232A8333+***	1000	500
		0.047	7.5×19.0	B32232A8473+***	1000	500
		0.068	8.5×19.0	B32232A8683+***	1000	500
		0.10	10.5×19.0	B32232A8104+***	500	500
		0.15	10.0×27.0	B32232A8154+***	500	500
		0.22	11.5×27.0	B32232A8224+***	500	500
		0.33	13.5×27.0	B32232A8334+***	500	500
		0.47	14.5×32.0	B32232A8474+000	—	500
		0.68	15.0×32.0	B32232A8684+000	—	500
		1.0	16.0×32.0	B32232A8105+000	—	500

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:

189 = Reel

000 = Untaped


B32232
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	$C_R \leq 47$ nF	47 nF < $C_R \leq 1$ μ F	$C_R > 1$ μ F	
	1 kHz	10	10	10	
	10 kHz	20	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	$C_R \leq 0.33$ μ F		$C_R > 0.33$ μ 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	
	$T_A \leq 85$	$V_C = V_R$		$V_{C,rms} = V_{rms}$	
	$85 < T_A \leq 100$	$V_C = V_R \cdot (165 - T_A)/80$		$V_{C,rms} = V_{rms} \cdot (165 - T_A)/80$	
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)		$V_{op} = 1.0 \cdot V_{C,rms}$ (1000 h)	
Damp heat test	21 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)		
			$\leq 7 \cdot 10^{-3}$ (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/ 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

Length of capacitor		14 mm	19 mm	27 mm	32 mm	42 mm
V _R VDC	V _{rms} VAC	dV/dt in V/ μ s				
100	63	6	3	2	1.5	–
250	160	10	5	3	2.5	2
400	200	–	7	4	3	–
630	200	–	10	7	5	–

k₀ values

Length of capacitor		14 mm	19 mm	27 mm	32 mm	42 mm
V _R VDC	V _{rms} VAC	k ₀ in V ² / μ s				
100	63	1 200	600	400	300	–
250	160	5 000	2 500	1 500	1 250	1 000
400	200	–	5 600	3 200	2 400	–
630	200	–	12 500	8 800	6 300	–

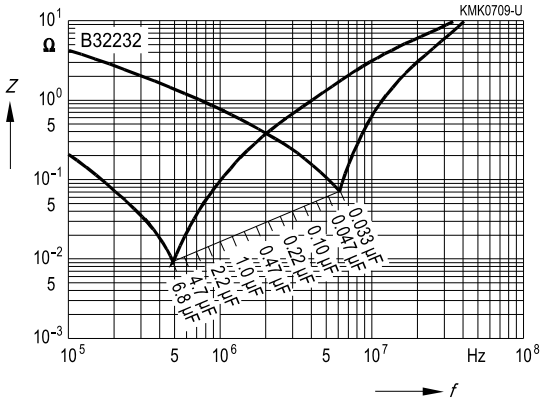


B32232

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.