Film Capacitors

Metallized Polyester Film Capacitors (MKT)

Series/Type: **B32227**
Date: August 2004

Typical applications

- Test and measurement equipment
- Laser, ultrasonic, X-ray, microwave

Climatic

- Max. operating temperature: 85 °C
- Climatic category (IEC 60068-1): 40/085/21

Construction

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

Terminals

- Central axial wire leads, lead-free tinned

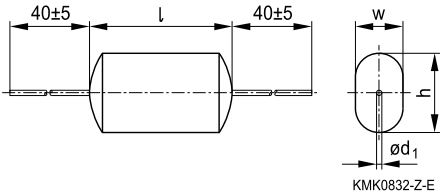
Marking

Manufacturer's logo,
style (MKT), series number, rated capacitance, capacitance tolerance (code letter),
rated DC voltage, date of manufacture (coded)

Delivery mode

Bulk (untaped)

Dimensional drawing



KMK0832-Z-E

Dimensions in mm

Width w_{max}	≤6.0	8 ... 10	≥10.5
Lead diameter d_1	0.6	0.8	1.0

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

Overview of available types

Type	B32227				
Page	4				
V_R (VDC)	1000	1600	2500	4000	6300
V_{rms} (VAC)	220	220	220	220	220
C_R (µF)					
0.010					
0.025					
0.05					
0.10					
0.25					

Ordering codes and packing units

V_R VDC	V_{rms} f ≤60 Hz VAC	C_R µF	Max. dimensions w × h × l mm	Ordering code (composition see below)	Untaped pcs./unit
1000	220	0.050	5.5 × 12.0 × 33.0	B32227J0503M000	100
		0.10	6.0 × 18.5 × 33.0	B32227J0104M000	50
		0.25	9.5 × 25.0 × 33.0	B32227J0254M000	20
1600	220	0.025	5.0 × 11.5 × 33.0	B32227J1253M000	100
		0.050	6.0 × 16.5 × 33.0	B32227J1503M000	100
		0.10	8.0 × 20.0 × 33.0	B32227J1104M000	50
		0.25	15.5 × 31.0 × 33.0	B32227J1254M000	20
2500	220	0.025	8.5 × 18.0 × 33.0	B32227J2253M000	50
		0.050	12.5 × 25.5 × 33.0	B32227J2503M000	50
		0.10	10.5 × 26.5 × 45.0	B32227J2104M000	20
		0.25	15.5 × 40.5 × 45.0	B32227J2254M000	20
4000	220	0.010	9.5 × 22.0 × 33.0	B32227J4103M000	20
		0.025	10.0 × 22.5 × 45.0	B32227J4253M000	20
		0.050	12.5 × 31.0 × 45.0	B32227J4503M000	20
		0.10	16.5 × 42.0 × 45.0	B32227J4104M000	20
6300	220	0.010	9.0 × 21.5 × 45.0	B32227J6103M000	20
		0.025	13.5 × 32.5 × 45.0	B32227J6253M000	20
		0.050	17.0 × 42.0 × 45.0	B32227J6503M000	20

Further E series and intermediate capacitance values on request.

Composition of ordering code

Capacitance tolerance code: M = ±20%

Technical data

Operating temperature range	Max. operating temperature $T_{op,max}$	+85 °C	
	Upper category temperature T_{max}	+85 °C	
	Lower category temperature T_{min}	−40 °C	
	Rated temperature T_R	+85 °C	
Dissipation factor tan δ (in 10^{-3}) at 20 °C (upper limit values)	at 1 kHz: 8 at 10 kHz: 15		
Insulation resistance R_{ins} at 20 °C, rel. humidity ≤ 65% (minimum as-delivered values)	30 000 MΩ		
DC test voltage	1.2 · V_R, 2 s		
Category voltage V_C (continuous operation with V_{DC} or V_{AC} at f ≤ 60 Hz)	T_A (°C)	DC voltage derating	AC voltage derating
	$T_A \leq 70$	$V_C = V_R$	$V_{C,rms} = V_{rms}$
	$70 < T_A \leq 85$	$V_C = V_R \cdot 0.55$	$V_{C,rms} = V_{rms} \cdot 0.70$
Damp heat test Limit values after damp heat test	21 days/40 °C/93% relative humidity Capacitance change |ΔC/C|		≤ 3% (for $C_R > 0.1$ µF) ≤ 5% (for $C_R \leq 0.1$ µF)
	Dissipation factor change Δ tan δ		≤ 3 · 10^{-3} (at 1 kHz) ≤ 5 · 10^{-3} (at 10 kHz)
	Insulation resistance R_{ins}		≥ 20% of minimum as-delivered values
Reliability: Failure rate λ Service life t_{SL}	10 fit (≤ 10 · 10^{-9} /h) at 0.5 · V_R, 40 °C 200 000 h at 1.0 · V_R, 40 °C For conversion to other operating conditions and temperatures, refer to chapter "Quality assurance", page .		
Failure criteria: Total failure Failure due to variation of parameters	Short circuit or open circuit Capacitance change |ΔC/C|		> 10%
	Dissipation factor tan δ		> 2 · upper limit value
	Insulation resistance R_{ins}		< 150 MΩ

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/µs.

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

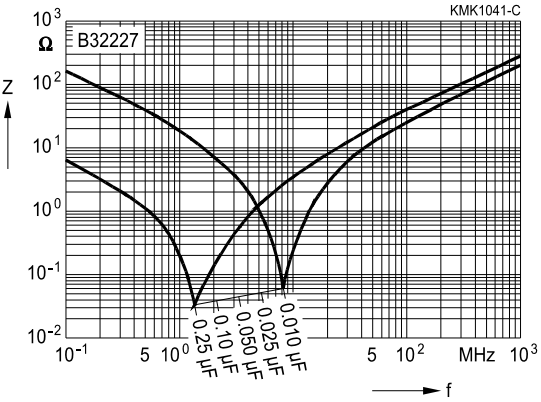
Lenght of capacitor		33 mm	45 mm
V_R VDC	V_{rms} VAC	dV/dt in V/µs	
1000	220	10	–
1600	220	15	–
2500	220	25	12.5
4000	220	40	20
6300	220	–	40

k_0 values

Lenght of capacitor		33 mm	45 mm
V_R VDC	V_{rms} VAC	k_0 in V^2/µs	
1000	220	20 000	–
1600	220	48 000	–
2500	220	125 000	62 500
4000	220	320 000	160 000
6300	220	–	500 000

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.