Film Capacitors

Metallized Polyester Film Capacitors (MKT)

Series/Type: **B32237**
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)
- Cylindrical winding
- In tubular plastic case
- Face ends sealed with epoxy resin

Terminals

- Central axial wire leads, lead-free tinned

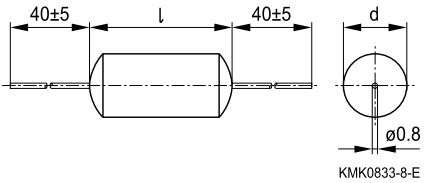
Marking

Manufacturer's logo,
style (MKT), 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

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

Overview of available types

Type	B32237							
V_R (VDC)	1000	1600	2500	4000	6300	8000	10000	12500
V_{rms} (VAC)	200	200	200	450	450	450	450	450
C_R (nF)								
0.68								
1.0								
2.5								
5.0								
10								
25								

Ordering codes and packing units

V_R VDC	V_{rms} f ≤60 Hz VAC	C_R nF	Max. dimensions d × l mm	Ordering code (composition see below)	Untaped pcs./unit
1000	200	25	11.5 × 24.0	B32237A0253M000	50
1600	200	5.0	7.5 × 24.0	B32237A1502M000	100
		10	10.5 × 24.0	B32237A1103M000	100
2500	200	2.5	8.5 × 33.0	B32237J2252M000	100
		5.0	9.5 × 33.0	B32237J2502M000	100
		10	10.5 × 33.0	B32237B2103M000	100
		25	16.5 × 33.0	B32237J2253M000	50
4000	450	1.0	7.5 × 33.0	B32237A4102M000	100
		2.5	8.5 × 33.0	B32237J4252M000	100
		5.0	10.5 × 33.0	B32237J4502M000	100
		10	12.5 × 33.0	B32237B4103M000	50
6300	450	1.0	8.5 × 33.0	B32237B6102M000	100
		2.5	10.5 × 33.0	B32237B6252M000	100
		5.0	10.5 × 45.0	B32237B6502M000	100
		10	13.5 × 45.0	B32237B6103M000	50
8000	450	1.0	8.5 × 45.0	B32237A8102M000	100
		2.5	10.5 × 45.0	B32237B8252M000	100
		5.0	12.5 × 45.0	B32237A8502M000	50
		10	16.5 × 45.0	B32237J8103M000	50
10000	450	1.0	8.5 × 56.0	B32237A9102M000	100
		2.5	11.5 × 56.0	B32237A9252M000	50
		5.0	13.5 × 56.0	B32237A9502M000	50
12500	450	0.68	9.5 × 56.0	B32237A3681M000	100
		1.0	9.5 × 56.0	B32237A3102M000	100
		2.5	12.5 × 56.0	B32237A3252M000	50

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: $8 \cdot 10^{-3}$		
	at 10 kHz: $15 \cdot 10^{-3}$		
Insulation resistance R_{ins} at 20 °C, rel. humidity ≤ 65% (minimum as-delivered values)	30 000 MΩ		
DC test voltage	$1.2 \cdot V_R$, 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 $\lvert\Delta C/C\rvert$		≤ 5%
	Dissipation factor change Δ tan δ		$\leq 3 \cdot 10^{-3}$ (at 1 kHz)
			$\leq 5 \cdot 10^{-3}$ (at 10 kHz)
	Insulation resistance R_{ins}		≥ 20% of minimum as-delivered values
Reliability:			
Failure rate λ	10 fit ($\leq 10 \cdot 10^{-9}$/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 $\lvert\Delta C/C\rvert$		> 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 $V^2/\mu s$.

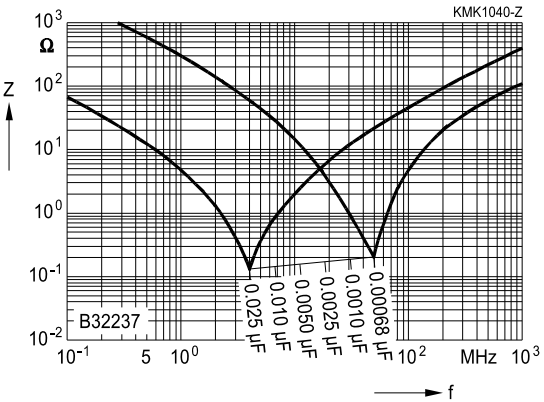
Note:
The values of dV/dt and k_0 provided below must not be exceeded in order to avoid damaging the capacitor.

dV/dt and k_0 values

V_R (VDC)	V_{rms} (VAC	dV/dt in V/µs	k_0 in $V^2/\mu s$
1 000	200	15	30 000
1 600	200	25	80 000
2 500	200	25	125 000
4 000	450	40	320 000
6 300	450	50	630 000
8 000	450	50	800 000
10 000	450	370	7 500 000
12 500	450	1000	25 000 000

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.