



## Film Capacitors

### Metallized Polyester Film Capacitors (MKT)

**Series/Type:** B32237  
**Date:** August 2004

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High voltage (wound)

**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

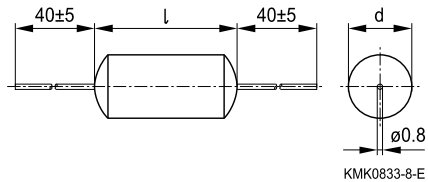
**Marking**

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**



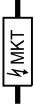
Dimensions in mm

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								


**B32237**
**High voltage (wound)**
**Ordering codes and packing units**

$V_R$ VDC	$V_{rms}$ $f \leq 60$ Hz VAC	$C_R$ nF	Max. dimensions $d \times l$ 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

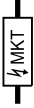
Further E series and intermediate capacitance values on request.

**Composition of ordering code**

Capacitance tolerance code: M =  $\pm 20\%$


**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 $\tan \delta$ (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 $\leq 65\%$ (minimum as-delivered values)	30 000 M $\Omega$		
DC test voltage	$1.2 \cdot V_R, 2 s$		
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
	$T_A \leq 70$ $70 < T_A \leq 85$	$V_C = V_R$ $V_C = V_R \cdot 0.55$	$V_{C,rms} = V_{rms}$ $V_{C,rms} = V_{rms} \cdot 0.70$
Damp heat test Limit values after damp heat test	21 days/40 °C/93% relative humidity		
	Capacitance change $ \Delta C/C $	$\leq 5\%$	
	Dissipation factor change $\Delta \tan \delta$	$\leq 3 \cdot 10^{-3}$ (at 1 kHz) $\leq 5 \cdot 10^{-3}$ (at 10 kHz)	
	Insulation resistance $R_{ins}$	$\geq 20\%$ of minimum as-delivered values	
Reliability: Failure rate $\lambda$ Service life $t_{SL}$	10 fit ( $\leq 10 \cdot 10^{-9}/h$ ) at $0.5 \cdot V_R, 40$ °C 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 $ \Delta C/C $	$> 10\%$	
	Dissipation factor $\tan \delta$	$> 2 \cdot$ upper limit value	
	Insulation resistance $R_{ins}$	$< 150$ M $\Omega$	



B32237

High voltage (wound)

**Pulse handling capability**

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

"k<sub>0</sub>" represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in V<sup>2</sup>/μs.

Note:

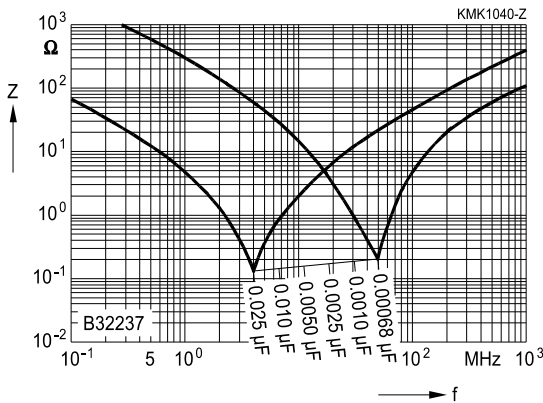
The values of dV/dt and k<sub>0</sub> provided below must not be exceeded in order to avoid damaging the capacitor.

**dV/dt and k<sub>0</sub> values**

V <sub>R</sub> (VDC)	V <sub>rms</sub> (VAC)	dV/dt in V/μs	k <sub>0</sub> in V <sup>2</sup> /μs
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<sub>rms</sub> versus frequency f**

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