



## Film Capacitors

### EMI Suppression Capacitors (MKP)

**Series/Type:** B81123  
**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**

- Y1 class for interference suppression
- "Line to ground" applications

**Climatic**

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

**Construction**

- Dielectric: polypropylene (MKP)
- Internal series connection
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

**Features**

- Self-healing properties

**Terminals**

- Parallel wire leads, lead-free tinned
- Standard lead lengths: 6 – 1 mm
- Special lead lengths available on request



**Marking**

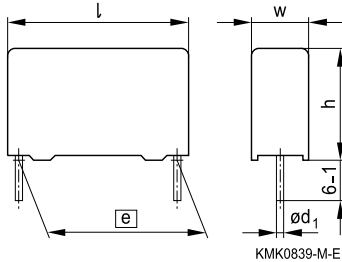
Manufacturer's logo, lot number, date code, rated capacitance (coded), cap. tolerance (code letter), rated AC voltage, series number, sub-class (Y1), dielectric code (MKP), climatic category, passive flammability category, approvals.

**Delivery mode**

Bulk (untaped)  
 Taped (Ammo pack or reel)  
 For taping details, refer to chapter "Taping and packing".

**Approvals**

Marks of conformity	Standards	Certificate
	EN 132400, IEC 60384-14	138584
	UL 1414 (double protection)	E97863

**Dimensional drawing**


Dimensions in mm

Lead spacing	Lead diameter $d_1$
$e \pm 0.4$	
15 mm, 22.5 mm	0.8

**Marking example**


KMK0825-H

**Overview of available types**

Lead spacing	15 mm	22.5 mm
$C_R$ ( $\mu\text{F}$ )		
0.0010		
0.0015		
0.0022		
0.0033		
0.0047		
0.0056		
0.0068		
0.010		

**Ordering codes and packing units**

Lead spacing	$C_R$	Max. dimensions $w \times h \times l$	Ordering code (composition see below)	Ammo pack	Reel	Untaped
mm	$\mu\text{F}$	mm		pcs./unit	pcs./unit	pcs./unit
15	0.0010	$5.0 \times 10.5 \times 18.0$	B81123C1102M***	1170	1300	1000
	0.0015	$6.0 \times 11.0 \times 18.0$	B81123C1152M***	960	1100	1000
	0.0022	$7.0 \times 12.5 \times 18.0$	B81123C1222M***	830	900	1000
	0.0033	$8.5 \times 14.5 \times 18.0$	B81123C1332M***	680	700	500
	0.0047	$9.0 \times 17.5 \times 18.0$	B81123C1472M***	640	700	500
22.5	0.0056	$7.0 \times 16.0 \times 26.5$	B81123C1562M***	580	600	630
	0.0068	$8.5 \times 16.5 \times 26.5$	B81123C1682M***	480	500	510
	0.010	$10.5 \times 16.5 \times 26.5$	B81123C1103M***	390	400	540

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M =  $\pm 20\%$

K =  $\pm 10\%$

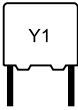
\*\*\* = Packaging code:

289 = Ammo pack

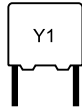
189 = Reel

000 = Untaped (lead length 6 – 1 mm)

(Closer tolerances on request)


**B81123**
**Y1 / 250 VAC**
**Technical data**

Max. operating temperature $T_{op,max}$	+100 °C	
Dissipation factor $\tan \delta$ (in $10^{-3}$ ) at 20 °C (upper limit values)	at 1 kHz 100 kHz	1.0 5.0
Insulation resistance $R_{ins}$ or time constant $\tau = C_R \cdot R_{ins}$ at 20 °C, rel. humidity $\leq 65\%$ (minimum as-delivered values)	30 000 M $\Omega$	
DC test voltage	4800 V, 2 s	
Passive flammability category to IEC 40 (CO) 752	C	
Maximum continuous AC voltage $V_{AC}$	750 V (50/60 Hz)	
Rated AC voltage (IEC 60384-14)	250 V (50/60 Hz)	
Maximum continuous DC voltage $V_{DC}$	3000 V	
Operating AC voltage $V_{op}$ at high temperature	$T_A \leq 100$ °C	$V_{op} = V_{AC}$ (continuously)
	$T_A \leq 100$ °C	$V_{op} = 1.25 \cdot V_{AC}$ (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 $\Delta \tan \delta$	$\leq 0.5 \cdot 10^{-3}$ (at 1 kHz)
	Insulation resistance $R_{ins}$	$\leq 1.0 \cdot 10^{-3}$ (at 100 kHz)
	or time constant $\tau = C_R \cdot R_{ins}$	$\geq 50\%$ 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.

"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**

Lead spacing	15 mm	22.5 mm
dV/dt in V/μs	3 000	1 000
k <sub>0</sub> in V <sup>2</sup> /μs	2 100 000	700 000

**Impedance Z versus frequency f**

(typical values)

