



## Film Capacitors

### EMI Suppression Capacitors (MKP)

**Series/Type:** B81123  
**Date:** June 2006

**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**

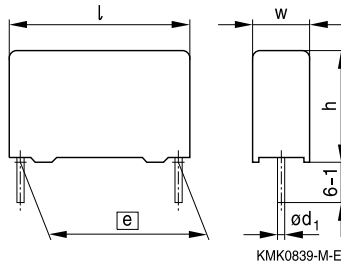
Manufacturer's logo, lot number, date code, rated capacitance (coded), cap. tolerance (code letter), rated AC voltage, series number, sub-class (Y1), dielectric code (MKP), climatic category, passive flammability category, approvals.

**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

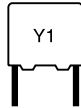
**Dimensional drawing**


Dimensions in mm

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

**Marking example**


KMK1169-9


**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

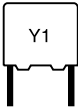
Further E series and intermediate capacitance values on request.

**Composition of ordering code**

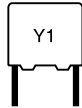
+ = Capacitance tolerance code:  
M =  $\pm 20\%$

\*\*\* = 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	1
	100 kHz	5
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 Limit values after damp heat test	21 days / 40 °C / 93% relative humidity Capacitance change $ \Delta C/C  \leq 5\%$ Dissipation factor change $\Delta \tan \delta \leq 0.5 \cdot 10^{-3}$ (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:*

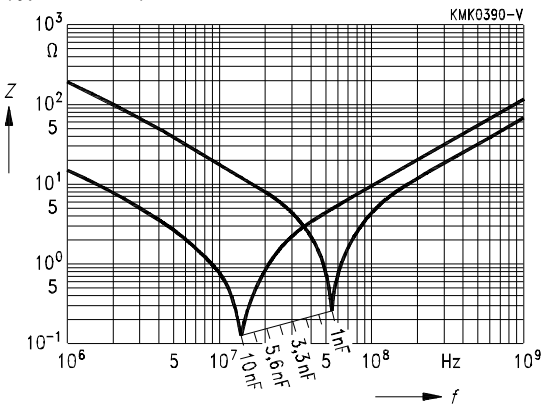
*The values of dV/dt and k<sub>0</sub> provided below must not be exceeded in order to avoid damaging the capacitor.*

### 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)



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