



## Film Capacitors

### EMI Suppression Capacitors (MKT)

**Series/Type:** B81141  
**Date:** August 2004

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**Typical applications**

- X1 class for interference suppression
- "Across the line" applications

**Climatic**

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

**Construction**

- Dielectric: polyester (MKT)
- 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**

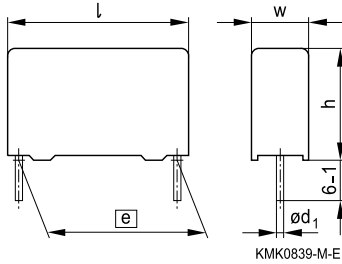
Manufacturer's logo, lot number, date code, rated capacitance (coded), cap. tolerance (code letter), rated AC voltage, series number, sub-class (X1), dielectric code (MKT), climatic category, passive flammability category, approvals.

**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	138583
	UL 1414	E97863
	CSA C22.2 No.1	E97863

**Dimensional drawing**


Dimensions in mm

Lead spacing	Lead diameter
$e \pm 0.4$	$d_1$
15 ... 27.5 mm	0.8

**Marking example**


KMK0816-I

**Overview of available types**

Lead spacing	15 mm	22.5 mm	27.5 mm
$C_R$ ( $\mu\text{F}$ )			
0.010			
0.022			
0.033			
0.047			
0.068			
0.10			
0.15			
0.22			
0.33			
0.47			

**Ordering codes and packing units**

Lead spacing	$C_R$	Max. dimensions $w \times h \times l$ mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
mm	$\mu\text{F}$	mm				
15	0.010	$5.0 \times 10.5 \times 18.0$	B81141C1103M***	1170	1300	1000
	0.022	$7.0 \times 12.5 \times 18.0$	B81141C1223M***	830	900	1000
	0.033	$8.5 \times 14.5 \times 18.0$	B81141C1333M***	680	700	500
	0.047	$9.0 \times 17.5 \times 18.0$	B81141C1473M***	640	700	500
22.5	0.068	$8.5 \times 16.5 \times 26.5$	B81141C1683+***	480	500	510
	0.10	$10.5 \times 16.5 \times 26.5$	B81141C1104+***	390	400	540
	0.15	$11.0 \times 20.5 \times 26.5$	B81141C1154+***	370	350	510
27.5	0.22	$12.5 \times 21.5 \times 31.5$	B81141C1224+***	–	300	280
	0.33	$14.0 \times 24.5 \times 31.5$	B81141C1334+***	–	–	260
	0.47	$18.0 \times 27.5 \times 31.5$	B81141C1474+***	–	–	200

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M =  $\pm 20\%$

K =  $\pm 10\%$

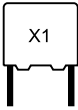
\*\*\* = Packaging code:

289 = Ammo pack

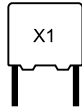
189 = Reel

000 = Untaped (lead length 6 – 1 mm)

(Closer tolerances on request)


**B81141**
**X1 / 440 VAC**
**Technical data**

Max. operating temperature $T_{op,max}$	+85 °C	
Dissipation factor $\tan \delta$ (in $10^{-3}$ ) at 20 °C (upper limit values)	at 1 kHz	8.0
	100 kHz	15.0
Insulation resistance $R_{ins}$ or time constant $\tau = C_R \cdot R_{ins}$ at 20 °C, rel. humidity $\leq 65\%$ (minimum as-delivered values)	$C_R \leq 0.33 \mu F$	$C_R > 0.33 \mu F$
	30 000 M $\Omega$	10 000 s
DC test voltage	2500 V, 2 s	
Passive flammability category to IEC 40 (CO) 752	C	
Maximum continuous AC voltage ( $V_{AC}$ )	440 V (50/60 Hz)	
Rated AC voltage (IEC 60384-14)	440 V (50/60 Hz)	
Maximum continuous DC voltage ( $V_{DC}$ )	1000 V	
Operating AC voltage $V_{op}$ at high temperature	$T_A \leq 85 \text{ °C}$	$V_{op} = V_{AC}$ (continuously)
	$T_A \leq 85 \text{ °C}$	$V_{op} = 1.25 \cdot V_{AC}$ (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 ( $\Delta \tan \delta$ )	$\leq 5 \cdot 10^{-3}$ (at 1 kHz)
	Insulation resistance $R_{ins}$	$\geq 50\%$ of minimum
	or time constant $\tau = C_R \cdot R_{ins}$	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:*

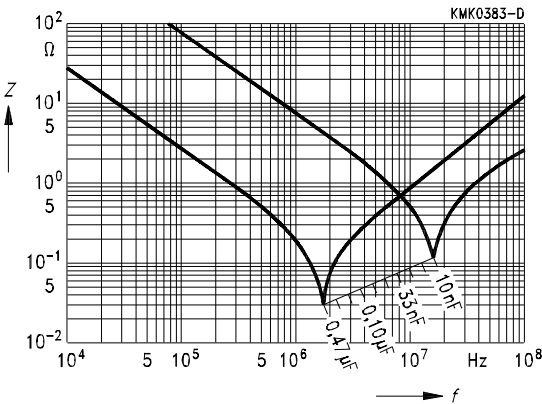
*The values of dV/dt and k<sub>0</sub> provided below must not be exceeded in order to avoid damaging the capacitor.*

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

Lead spacing	15 mm	22.5 mm	27.5 mm
dV/dt in V/μs	400	200	150
k <sub>0</sub> in V <sup>2</sup> /μs	500 000	250 000	187 500

**Impedance Z versus frequency f**

(typical values)



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