Film Capacitors

EMI Suppression Capacitors (MKT)

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

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

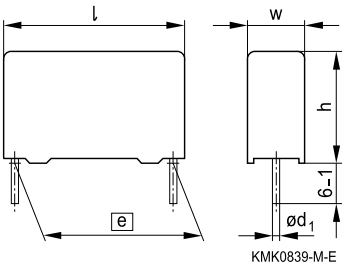
Marking

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".

Dimensional drawing

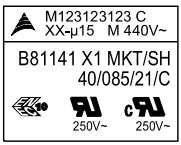


KMK0839-M-E

Dimensions in mm

Lead spacing e ±0.4	Lead diameter d_1
15 ... 27.5 mm	0.8

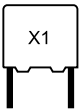
Marking example



KMK0816-I

Approvals

Marks of conformity	Standards	Certificate
	EN 132400, IEC 60384-14	138583
	UL 1414	E97863
	CSA C22.2 No.1	E97863



Overview of available types

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

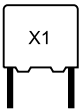
Further E series and intermediate capacitance values on request.

Composition of ordering code

+ = Capacitance tolerance code:
M = ±20%
K = ±10%

(Closer tolerances on request)

*** = Packaging code:
289 = Ammo pack
189 = Reel
000 = Untaped (lead length 6 −1 mm)



B81141

X1 / 440 VAC

Technical data

Max. operating temperature $T_{op,max}$	+85 °C		
Dissipation factor tan δ (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 ≤ 65% (minimum as-delivered values)	$C_R \leq 0.33$ µF	$C_R > 0.33$ µF	
	30 000 MΩ	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	$T_A \leq 85$ °C	$V_{op} = V_{AC}$	(continuously)
	$T_A \leq 85$ °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 $\lvert\Delta C/C\rvert$		≤ 5%
	Dissipation factor change (Δ tan δ)		≤ $5 \cdot 10^{-3}$ (at 1 kHz)
	Insulation resistance R_{ins}		≥ 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_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

Lead spacing	15 mm	22.5 mm	27.5 mm
dV/dt in V/µs	400	200	150
k_0 in $V^2/\mu s$	500 000	250 000	187 500

Impedance Z versus frequency f

(typical values)