Film Capacitors

EMI Suppression Capacitors (MKP)

Series/Type: **B81122**
Date: August 2004

Typical applications

- Y2 class for interference suppression
- "Line to ground" applications

Climatic

- Max. operating temperature: 100 °C
- Climatic category (IEC 60068-1):
  40/100/21 e = 10 mm
  40/085/21 e ≥ 15 mm

Construction

- Dielectric: polypropylene (MKP)
- Internal series connection (for e ≥15 mm)
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

Features

- Very small dimensions
- Self-healing properties

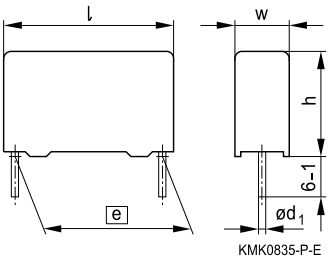
Terminals

- 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 (Y2),
dielectric code (MKP), climatic category,
passive flammability category, approvals.

Dimensional drawing



KMK0835-P-E

Dimensions in mm

Lead spacing e ±0.4	Lead diameter d_1
10 mm	0.6
15 ... 27.5 mm	0.8

Marking example

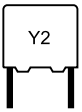
KMK0824-9

Delivery mode

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

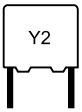
Approvals

Marks of conformity	Standards	Certificate
	EN 132400, IEC 60384-14	138600 (e = 10 mm) 138603 (e ≥ 15 mm)
	UL 1414	E97863
	CSA C22.2 No.1	E97863



Overview of available types

Lead spacing	10 mm	15 mm	22.5 mm	27.5 mm
C_R (µF)				
0.0010				
0.0015				
0.0022				
0.0033				
0.0047				
0.0056				
0.0068				
0.010				
0.015				
0.022				
0.027				
0.033				
0.047				
0.056				
0.068				
0.10				
0.15				
0.22				
0.33				



B81122

Y2 / 250 VAC

Ordering codes and packing units

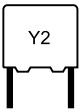
Lead spacing	C_R	Max. dimensions w × h × l	Ordering code (composition see	Ammo pack	Reel	Untaped
mm	µF	mm	below)	pcs./unit	pcs./unit	pcs./unit
10	0.0010	4.0 × 9.0 × 13.0	B81122C1102M***	1000	1700	1000
	0.0015	4.0 × 9.0 × 13.0	B81122C1152M***	1000	1700	1000
	0.0022	5.0 × 11.0 × 13.0	B81122C1222M***	830	1300	1000
	0.0033	5.0 × 11.0 × 13.0	B81122C1332M***	830	1300	1000
	0.0047	6.0 × 12.0 × 13.0	B81122C1472M***	680	1100	1000
	0.0056	6.0 × 12.0 × 13.0	B81122C1562M***	680	1100	1000
	0.0068	6.0 × 12.0 × 13.0	B81122C1682M***	680	1100	1000
15	0.010	6.0 × 11.0 × 18.0	B81122A1103M***	960	1100	1000
	0.015	7.0 × 12.5 × 18.0	B81122A1153M***	830	900	1000
	0.022	8.5 × 14.5 × 18.0	B81122A1223M***	680	700	500
	0.027	8.5 × 14.5 × 18.0	B81122A1273M***	680	700	500
	0.033	9.0 × 17.5 × 18.0	B81122A1333M***	640	700	500
22.5	0.047	7.0 × 16.0 × 26.5	B81122A1473M***	580	600	630
	0.056	8.5 × 16.5 × 26.5	B81122A1563M***	480	500	510
	0.068	10.5 × 16.5 × 26.5	B81122A1683M***	390	400	540
	0.10	10.5 × 20.5 × 26.5	B81122A1104M***	390	400	540
27.5	0.15	11.0 × 21.0 × 31.5	B81122A1154M***	–	350	320
	0.22	13.5 × 23.0 × 31.5	B81122A1224M***	–	250	260
	0.33	18.0 × 27.5 × 31.5	B81122A1334M***	–	–	200

Further E series and intermediate capacitance values on request.

Composition of ordering code

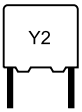
+ = Capacitance tolerance code:
M = ±20%

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



Technical data

Max. operating temperature $T_{op,max}$	+100 °C		
Dissipation factor tan δ (in 10^{-3}) at 20 °C (upper limit values)		$C_R \leq 0.1$ µF	$C_R > 0.1$ µF
	at 1 kHz	1.0	1.0
	100 kHz	5.0	–
Insulation resistance R_{ins} or time constant $\tau = C_R \cdot R_{ins}$ at 20 °C, rel. humidity ≤ 65% (minimum as-delivered values)	30 000 MΩ		
DC test voltage	2700 V, 2 s (e ≥ 15 mm)		
	2500 V, 2 s (e = 10 mm)		
Passive flammability category to IEC 40 (CO) 752	C		
Maximum continuous AC voltage (V_{AC})	405 V (50/60 Hz) (e ≥ 15 mm)		
	305 V (50/60 Hz) (e = 10 mm)		
Rated AC voltage (IEC 60384-14)	250 V (50/60 Hz)		
Maximum continuous DC voltage (V_{DC})	1000 V (e ≥ 15 mm)		
	1200 V (e = 10 mm)		
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 $\lvert\Delta C/C\rvert$	≤ 5%	
	Dissipation factor change Δ tan δ	$\leq 0.5 \cdot 10^{-3}$ (at 1 kHz)	
	Insulation resistance R_{ins}	$\leq 1.0 \cdot 10^{-3}$ (at 10 kHz)	
	or time constant $\tau = C_R \cdot R_{ins}$	≥ 50% of minimum as-delivered values	



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Y2 / 250 VAC

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 $V^2/\mu s$.

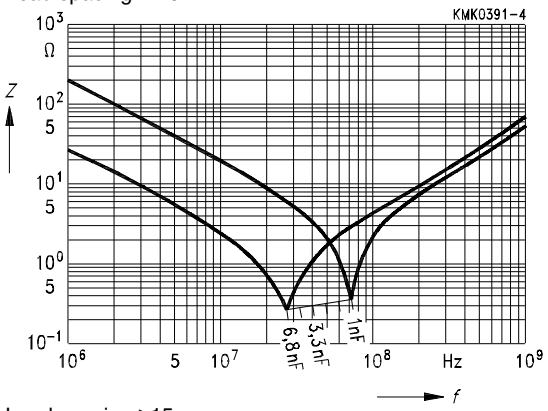
Note:
The values of dV/dt and k_0 provided below must not be exceeded in order to avoid damaging the capacitor.

dV/dt and k_0 values

Lead spacing	10 mm	15 mm	22.5 mm	27.5 mm
dV/dt in V/µs	550	400	200	150
k_0 in $V^2/\mu s$	388 000	282 000	141 000	106 000

Impedance Z versus frequency f
(typical values)

Lead spacing = 10 mm



Lead spacing ≥15 mm