Film capacitors

EMI suppression capacitors (MKP), X2 / 305 V AC

Series/Type: **B32922*7xx ... B32924*7xx**

Date: 2007-12-21
Version: 2

Typical applications

- For connection in series with the mains
- For severe ambient conditions

Climatic

- Maximum operating temperature: 105 ºC
- Climatic category (IEC 60068-1): 40/105/56

Construction

- Dielectric: Polypropylene (MKP)
- Plastic case (UL 94 V-0)
- Epoxy resin sealing (UL 94 V-0)

Features

- Very small dimensions
- Self-healing properties

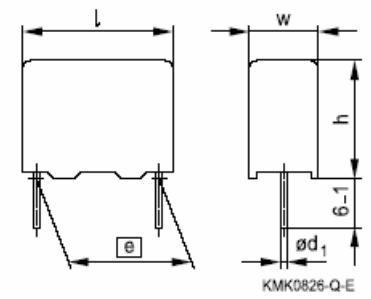
Terminals

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

Marking

Manufacturer's logo and lot number,
date code, rated capacitance (coded),
capacitance tolerance (code letter),
rated AC voltage,
series number, sub-class (X2),
dielectric code (MKP), climatic category,
passive flammability category, approvals.

Dimensional drawing

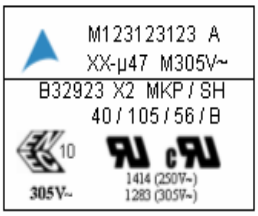


Dimensions in mm

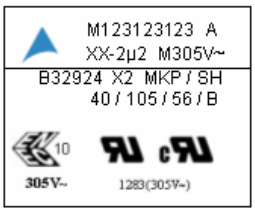
Lead spacing e ±0.4	Lead diameter d1	Type
15 … 27.5	0.8	B32922 … 24

Marking examples

27.5 ≥ e ≥ 15 mm
$C_R \leq 1$ µF



27.5 ≥ e ≥ 22.5 mm
$C_R > 1$ µF



Approvals

Marks of Conformity	Standards	Certificate
10	EN 132400 / IEC 60384-14	40005536 / 40010694
	UL1414 / UL1283	E97863 / E157153
	CSA C22.2 No.1 / CSA C22.2 No.8	E97863 / E157153

Ordering codes and packing units

Lead spacing	C_R	Max dimensions w × h × l	Ordering code (composition see below)	Ammo pack	Reel	Untaped
mm	µF	mm		pcs./unit	pcs./unit	pcs./unit
15	0.100	5.0 × 10.5 × 18.0	B32922C3104+***	1170	1300	1000
	0.150	6.0 × 12.0 × 18.0	B32922C3154+***	960	1100	1000
	0.220	7.0 × 12.5 × 18.0	B32922C3224+***	830	900	1000
	0.330	8.0 × 14.0 × 18.0	B32922C3334M***	730	750	500
	0.330	8.5 × 14.5 × 18.0	B32922D3334+***	680	700	500
	0.470	9.0 × 17.5 × 18.0	B32922C3474+***	640	700	500
22.5	0.33	6.0 × 15.0 × 26.5	B32923C3334M***	680	700	720
	0.33	7.0 × 16.0 × 26.5	B32923D3334+***	580	600	630
	0.47	8.5 × 16.5 × 26.5	B32923C3474+***	480	500	510
	0.56	8.5 × 16.5 × 26.5	B32923C3564+***	480	500	510
	0.68	10.5 × 16.5 × 26.5	B32923C3684+***	390	400	540
	0.82	10.5 × 18.5 × 26.5	B32923C3824M***	390	400	540
	1.00	11.0 × 20.5 × 26.5	B32923C3105+***	370	350	510
	1.50	12.0 × 22.0 × 26.5	B32923C3155M***	–	–	450
27.5	0.68	11.0 × 19.0 × 31.5	B32924C3684+***	–	350	320
	0.82	11.0 × 19.0 × 31.5	B32924C3824+***	–	350	320
	1.00	11.0 × 19.0 × 31.5	B32924C3105+***	–	350	320
	1.50	12.5 × 21.5 × 31.5	B32924C3155+***	–	300	280
	2.20	14.0 × 24.5 × 31.5	B32924C3225+***	–	–	260

Intermediate capacitance values are available on request.

Composition of ordering code

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

*** = Packaging code:
- 783 = 3.2 ±0.3 mm leads
- 784 = 4.0 ±0.3 mm leads
- 786 = 5.5 ±0.5 mm leads
- 787 = 26.0 ±2.0 mm leads
- 788 = Reel pack
- 789 = Ammo pack

Technical data

Maximum operating temperature $T_{op,max}$	105 °C		
Dissipation factor tan δ (in 10^{-3}) at 20 °C (upper limit values)		$C_R \leq 0.1$ µF	0.1 µF < $C_R \leq$ 2.2 µF
	at 1 kHz	1.0	1.0
	100 kHz	5	–
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
	100 000 MΩ		30 000 s
DC test voltage	2000 V, 2 s		
Passive flammability category to IEC 40 (CO) 752	B		
Capacitance tolerances (measured at 1 kHz)	±10% (K), ±20% (M)		
Rated AC voltage (IEC 60384-14)	305 V (50/60 Hz)		
Maximum continuous DC voltage (V DC)	630 V		
Operating AC voltage V_{op} at high temperature	$T_A \leq 105$ °C		$V_{op} = 1.25 \cdot V_{AC}$ (1000 h)
Damp heat test	Test conditions 1. Temperature: Relative humidity (RH): Test duration: or 2. Temperature: Relative humidity (RH): Test duration: Voltage value: or 3. Temperature: Relative humidity (RH): Test duration: Voltage value:		+40 °C ±2 °C 93% ±2% 1000 hours +85 °C ±2 °C 85% ±2% 200 hours 240 V AC, 50 Hz +40 °C ±2 °C 93% ±2% 500 hours 240 V AC, 50 Hz
Limit values after damp heat test	Capacitance change ($\Delta C/C$): Dissipation factor change ($\Delta \tan \delta$): Insulation resistance R_{ins} or time constant $\tau = C_R \cdot R_{ins}$:		≤ 5% ≤ $0.5 \cdot 10^{-3}$ (at 1 kHz) ≤ $1.0 \cdot 10^{-3}$ (at 10 kHz) ≥ 50% of minimum as-delivered values

dV/dt and k_0 values

Lead spacing (mm)	10	15	22.5	27.5
Version	C / D	C / D	C / D	C / D
dV/dt in (V/µs)	475	340	170	120
K_0 in (V^2/µs)	408500	292400	146200	103200

Note: The maximum values of dV/dt and K_0 must not be exceeded in order to avoid overheating of the capacitor.

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