

**X2 capacitors**

Rated ac voltage 300 V, 50/60 Hz

**Construction**

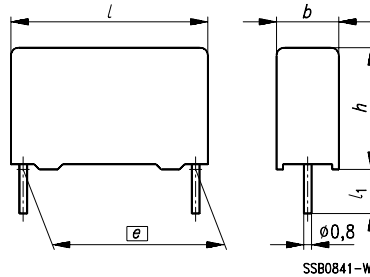
- Dielectric: polyester (MKT)
- Internal series connection
- Plastic case (UL 94 V-0)
- Epoxy resin sealing, flame-retardant

**Features**

- Self-healing properties

**Terminals**

- Parallel wire leads, tinned
- Two standard lead lengths available:  
6 mm and 26 mm  
Other lead lengths available upon request.



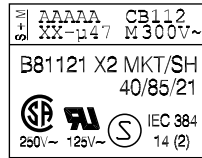
Lead length $l_1$ mm	6 - 1	26 ± 2
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**Marking**

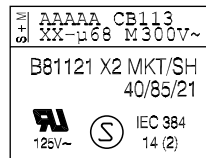
Manufacturer's logo, lot number, date code, rated capacitance (coded) capacitance tolerance (code letter), rated ac voltage, type number, interference suppression sub-class (X2), style (MKT), self-healing (SH), climatic category, awarded marks of conformity.

Capacitors  
22 nF ... 0,47  $\mu$ F

Capacitors  
0,68  $\mu$ F and 1,0  $\mu$ F



KMK0399-Z



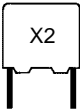
KMK0378-C

**Delivery mode**

Bulk (untaped)  
Taped (Ammo pack or reel)  
For notes on taping, refer to page 279.

**Marks of conformity**

Marks of conformity	Standards	Certificate
  	EN 132 400, IEC 384-14, 2nd edition UL 1414 (125 V) and UL 1283 CSA C22.2 No. 0; 1 ( $V_R = 250$ V, $C_R < 0,68$ $\mu$ F)	9550163 E157153 LR 59709



**B 81 121**  
**300 Vac**

**Not for new design**

**Ordering codes and packing units**

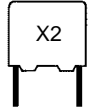
Lead spacing $e$ $\pm 0,4$ mm	$C_R$	Maximum dimensions $b \times h \times l$ (mm)	Ordering code <sup>1)</sup>	Packing units (pcs)			
				Ammo pack	Reel	Untaped Lead length	
						6 mm	26 mm
15	22 nF	5,0 × 10,5 × 18,0	B81121-C-*104	1170	1300	1000	1000
	33 nF	7,0 × 12,5 × 18,0	B81121-C-*105	830	900	1000	800
	47 nF	8,5 × 14,5 × 18,0	B81121-C-*106	680	700	500	500
	68 nF	8,5 × 14,5 × 18,0	B81121-C-*107	680	700	500	500
	0,10 μF	9,0 × 17,5 × 18,0	B81121-C-*108 <sup>2)</sup>	640	700	500	500
22,5	0,10 μF	7,0 × 16,0 × 26,5	B81121-C-*108	580	600	630	500
	0,15 μF	8,5 × 16,5 × 26,5	B81121-C-*109	480	500	510	450
	0,22 μF	10,5 × 18,5 × 26,5	B81121-C-*110	390	400	540	300
27,5	0,33 μF	11,0 × 21,0 × 31,5	B81121-C-*111	–	350	320	200
	0,47 μF	12,5 × 21,5 × 31,5	B81121-C-*112	–	300	280	200
	0,68 μF	15,0 × 24,5 × 31,5	B81121-C-*113	–	–	240	150
	1,0 μF	18,0 × 27,5 × 31,5	B81121-C-*114	–	–	200	100

Capacitance tolerance:  $\pm 20 \% \hat{=} M$  (closer tolerances upon request)

**Technical data**

Climatic category in accordance with IEC 68-1	40/085/21
Lower category temperature $T_{min}$	– 40 °C
Upper category temperature $T_{max}$	+ 85 °C
Damp heat test	21days/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 $R_{is} \geq 50 \%$ of minimum or time constant $\tau = C_R \cdot R_{is}$ as-delivered values
Permissible continuous ac voltage	300 V (50/60 Hz)
Permissible continuous dc voltage	800 V
DC test voltage	1800 V, 2 s

- 1) Replace the \* by the code letter for the required lead length or packing.  
B = lead length 6 mm (untaped)  
C = lead length 26 mm (untaped)  
P = taped, Ammo pack  
H = taped, reel
- 2) Replace the \* by the code letter for the required lead length or packing.  
D = lead length 6 mm (untaped)  
E = lead length 26 mm (untaped)  
Q = taped, Ammo pack  
J = taped, reel



Technical data

Dissipation factor $\tan \delta$ (in $10^{-3}$ ) at 20 °C (upper limit values)		$C_R \leq 0,1 \mu\text{F}$	$0,1 \mu\text{F} < C_R \leq 1 \mu\text{F}$	$C_R > 1 \mu\text{F}$
	at 1 kHz	8	8	10
	10 kHz	15	15	–
	100 kHz	30	–	–
Insulation resistance $R_{is}$ or time constant $\tau = C_R \cdot R_{is}$ at 20 °C, rel. humidity $\leq 65\%$ (minimum as-delivered values)	$C_R \leq 0,33 \mu\text{F}$	$C_R > 0,33 \mu\text{F}$		
	30 000 M $\Omega$	10 000 s		
Impedance $Z$ versus frequency $f$ (typical values)	KMK0388-J			

Pulse handling capability

Maximum permissible voltage change per unit of time for non-sinusoidal voltages (pulse, sawtooth).

$V_R$	Max. rate of voltage rise $V_{pp}/\tau$ (for $V_{pp} = \hat{V}_R$ )		
	Lead spacing		
	15 mm	22,5 mm	27,5 mm
300 Vac	75	35	20

For  $V_{pp} < \hat{V}_R$ , the permissible voltage rise rate  $V_{pp}/\tau$  may be multiplied by the factor  $\hat{V}_R/V_{pp}$ . Also refer to the calculation example on [page 250](#).

$V_R$	Pulse characteristic $k_0$ in $\text{V}^2/\mu\text{s}$ (for $V_{pp} \leq \hat{V}_R$ )		
	Lead spacing		
	15 mm	22,5 mm	27,5 mm
300 Vac	60 000	26 000	16 000