

## EMI Suppression Capacitors (MKP)

**Series/Type:**      **B81130\***

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B81130*	B3292*	2007-08-10	2008-09-30	2008-12-31

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at [www.epcos.com/sales](http://www.epcos.com/sales).

© EPCOS AG 2015. Reproduction, publication and dissemination of this publication, enclosures hereto and the information contained therein without EPCOS' prior express consent is prohibited.

EPCOS AG is a TDK Group Company.

**X2 / 275 VAC**
**Not for new design**
**Typical applications**

- X2 class for interference suppression
- "Across the line" applications

**Climatic**

- Max. operating temperature: 100 °C
- Climatic category (IEC 60068-1): 40/100/21

**Construction**

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

**Features**

- 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**

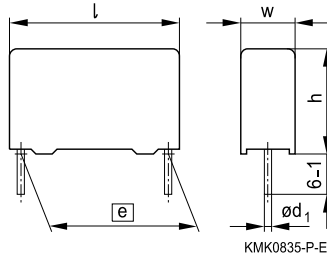
Manufacturer's logo, lot number, date code, rated capacitance (coded), cap. tolerance (code letter), rated AC voltage, series number, sub-class (X2), dielectric code (MKP), climatic category, passive flammability category, approvals.

**Delivery mode**

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

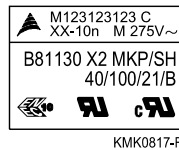
**Approvals**

Marks of conformity	Standards	Certificate
	EN 132400, IEC 60384-14	138554
	UL 1414 / UL 1283	E97863 / E157153
	CSA C22.2 No.1	E97863
	CQC (GB/T 14472-1998)	CQC02001001667

**Dimensional drawing**


Dimensions in mm

Lead spacing	Lead diameter $d_1$
$e \pm 0.4$	
10 mm	0.6
15 ... 27.5 mm	0.8

**Marking examples**
 $e = 10$  mm


KMK0817-R

 $e \geq 15$  mm/ $C_R \leq 1$   $\mu$ F

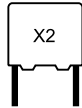

KMK0818-Z

 $e = 27.5$  mm/ $C_R > 1$   $\mu$ F


KMK0819-B

B81130

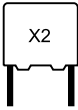
X2 / 275 VAC



Not for new design

**Overview of available types**

Lead spacing	10 mm	15 mm	22.5 mm	27.5 mm
$C_R$ ( $\mu\text{F}$ )				
0.010				
0.015				
0.022				
0.033				
0.047				
0.056				
0.068				
0.10				
0.15				
0.22				
0.33				
0.47				
0.68				
1.0				
1.5				
2.2				



**B81130**

**X2 / 275 VAC**

Not for new design

**Ordering codes and packing units**

Lead spacing mm	C <sub>R</sub> μF	Max. dimensions w × h × l mm	Ordering code (composition see below)	Ammo pack pcs./unit	Reel pcs./unit	Untaped pcs./unit
10	0.010	4.0 × 9.0 × 13.0	B81130C1103+***	1000	1700	1000
	0.015	4.0 × 9.0 × 13.0	B81130C1153+***	1000	1700	1000
	0.022	5.0 × 11.0 × 13.0	B81130C1223+***	830	1300	1000
	0.033	5.0 × 11.0 × 13.0	B81130C1333M***	830	1300	1000
	0.033	6.0 × 12.0 × 13.0	B81130A1333+***	680	1100	1000
	0.047	6.0 × 12.0 × 13.0	B81130C1473+***	680	1100	1000
15	0.022	5.0 × 10.5 × 18.0	B81130B1223+***	1170	1300	1000
	0.033	5.0 × 10.5 × 18.0	B81130B1333+***	1170	1300	1000
	0.047	5.0 × 10.5 × 18.0	B81130B1473+***	1170	1300	1000
	0.056	5.0 × 10.5 × 18.0	B81130C1563M***	1170	1300	1000
	0.068	6.0 × 11.0 × 18.0	B81130C1683+***	960	1100	1000
	0.10	6.0 × 12.0 × 18.0	B81130C1104M***	960	1100	1000
	0.10	7.0 × 12.5 × 18.0	B81130A1104+***	830	900	1000
	0.15	8.5 × 14.5 × 18.0	B81130C1154+***	680	700	500
	0.22	9.0 × 17.5 × 18.0	B81130C1224+***	640	700	500
22.5	0.15	6.0 × 15.0 × 26.5	B81130B1154+***	680	700	720
	0.22	7.0 × 16.0 × 26.5	B81130B1224+***	580	600	630
	0.33	8.5 × 16.5 × 26.5	B81130C1334+***	480	500	510
	0.47	10.5 × 16.5 × 26.5	B81130C1474M***	390	400	540
	0.47	10.5 × 18.5 × 26.5	B81130A1474+***	390	400	540
	0.68	11.0 × 20.5 × 26.5	B81130C1684+***	370	350	510
27.5	0.47	11.0 × 21.0 × 31.5	B81130B1474+***	–	350	320
	0.68	11.0 × 21.0 × 31.5	B81130B1684+***	–	350	320
	1.0	12.5 × 21.5 × 31.5	B81130C1105M***	–	300	280
	1.0	13.5 × 23.0 × 31.5	B81130A1105+***	–	250	260
	1.5	15.0 × 24.5 × 31.5	B81130C1155M***	–	–	240
	1.5	18.0 × 27.5 × 31.5	B81130A1155+***	–	–	200
	2.2	18.0 × 27.5 × 31.5	B81130C1225M***	–	–	200
	2.2	19.0 × 30.0 × 31.5	B81130A1225+***	–	–	180

Further E series and intermediate capacitance values on request.

**Composition of ordering code**

+ = Capacitance tolerance code:

M = ±20%

K = ±10%

\*\*\* = Packaging code:

289 = Ammo pack

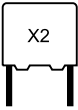
189 = Reel

000 = Untaped (lead length 6 – 1 mm)

(Closer tolerances on request)

**Not for new design**
**Technical data**

Max. operating temperature $T_{op,max}$	+100 °C		
Dissipation factor $\tan \delta$ (in $10^{-3}$ ) at 20 °C (upper limit values)		$C_R \leq 0.1 \mu F$	$C_R > 0.1 \mu F$
	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 $\leq 65\%$ (minimum as-delivered values)	$C_R \leq 0.33 \mu F$	$C_R > 0.33 \mu F$	
	100 000 M $\Omega$	30 000 s	
DC test voltage	2121 V, 2 s		
Passive flammability category to IEC 40 (CO) 752	B		
Maximum continuous AC voltage ( $V_{AC}$ )	310 V (50/60 Hz)		
Rated AC voltage (IEC 60384-14)	275 V (50/60 Hz)		
Maximum continuous DC voltage ( $V_{DC}$ )	760 V		
Operating AC voltage $V_{op}$ at high temperature	$T_A \leq 100 \text{ °C}$	$V_{op} = V_{AC}$ (continuously)	
	$T_A \leq 100 \text{ °C}$	$V_{op} = 1.25 \cdot V_{AC}$ (1000 h)	
Damp heat test Limit values after damp heat test	21 days / 40 °C / 93% relative humidity Capacitance change $ \Delta C/C  \leq 5\%$ Dissipation factor change $\Delta \tan \delta \leq 0.5 \cdot 10^{-3}$ (at 1 kHz) Insulation resistance $R_{ins} \leq 1.0 \cdot 10^{-3}$ (at 10 kHz) or time constant $\tau = C_R \cdot R_{ins} \geq 50\%$ of minimum as-delivered values		



**B81130**

**X2 / 275 VAC**

Not for new design

**Pulse handling capability**

"dV/dt" represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/ $\mu$ s.

"k<sub>0</sub>" represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in V<sup>2</sup>/ $\mu$ s.

Note:

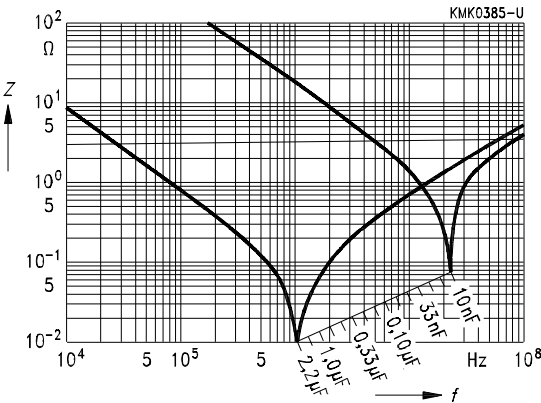
The values of dV/dt and k<sub>0</sub> provided below must not be exceeded in order to avoid damaging the capacitor.

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

Lead spacing	10 mm	15 mm	22.5 mm	27.5 mm
dV/dt in V/ $\mu$ s	550	400	200	150
k <sub>0</sub> in V <sup>2</sup> / $\mu$ s	429 000	312 000	156 000	117 000

**Impedance Z versus frequency f**

(typical values)



## Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet ([www.tdk-electronics.tdk.com/material](http://www.tdk-electronics.tdk.com/material)). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.  
  
We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.
6. Unless otherwise agreed in individual contracts, **all orders are subject to our General Terms and Conditions of Supply**.
7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard**. The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements ("CSR") TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System**. For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.
8. The trade names EPCOS, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, ExoCore, FilterCap, FormFit, LeaXield, MiniBlue, MiniCell, MKD, MKK, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at [www.tdk-electronics.tdk.com/trademarks](http://www.tdk-electronics.tdk.com/trademarks).