



# Aluminum Electrolytic Capacitors

## Snap-in capacitors

**Series/Type:** B43256  
**Date:** April 17, 2015

© 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.

## Long-life grade capacitors

### 长寿命电容器

## Applications

### 应用

- Professional power supplies in industrial electronics and in data processing equipment  
工业电子和服务器中的专业电源
- Solar and wind power generator  
太阳能和风力发电设备
- Uninterruptible power supplies  
不间断电源

## Features

### 特点

- RoHS-compatible  
符合RoHS要求
- High ripple current capability  
耐高纹波电流能力
- Compact size  
结构紧凑
- Useful life of 3000h at 105 °C  
105 °C 3000h使用寿命
- High reliability  
高可靠性

## Construction

### 结构

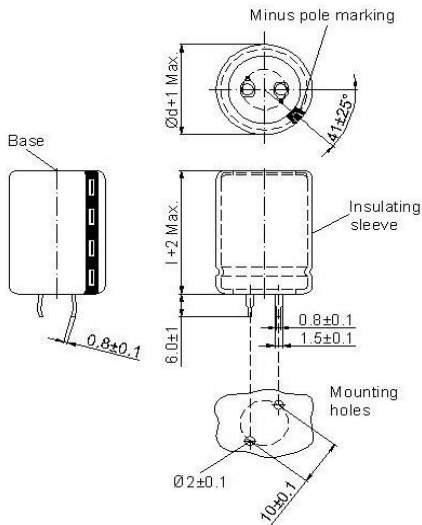
- Aluminum case, fully insulated  
铝质外壳，整体绝缘
- Minus pole marking on the insulating sleeve  
绝缘套管上标注负极
- Overload protection by safety vent on the base  
底部安全阀过载保护

**Specifications and characteristics in brief**
**规格性能参数一览表**

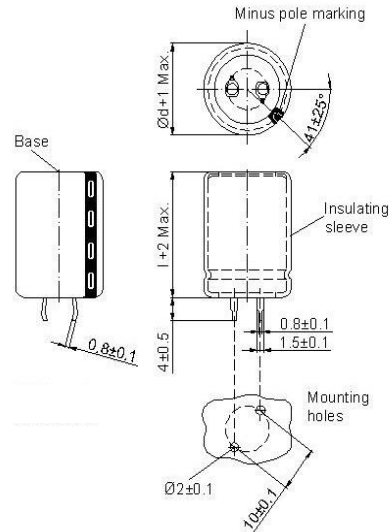
Rated voltage $V_R$ 额定电压 $V_R$	160...450 V DC						
Surge voltage $V_S$ 浪涌电压 $V_S$	1.15 · $V_R$ (for $V_R \leq 315V$ DC) 1.10 · $V_R$ (for $V_R > 315V$ DC)						
Operating temperature range 工作温度范围	$V_R \leq 250V$ DC: -40 °C...+105 °C $V_R \geq 350V$ DC: -25 °C...+105 °C						
Rated capacitance $C_R$ 额定电容量 $C_R$ (20 °C, 120 Hz)	82...3300 $\mu F$						
Capacitance tolerance 电容量公差	±20% M						
Dissipation factor(max.) 损耗正切角(最大值) 20°C, 120Hz.	$V_R$ (V DC)	160...400			450		
	$\tan\delta$	0.15			0.20		
Leakage current $I_{leak}$ (20 °C, after 5 minutes) 漏电流 $I_{leak}$ (20 °C, 5分钟后)	$I_{leak} \leq 3 \mu A \cdot \sqrt{\frac{C_R}{\mu F} \cdot \frac{V_R}{V}}$						
Low temperature stability 低温稳定性 (max impedance ratio) (最大阻抗比率)	$V_R$ (V DC)	160...250		350...450		120Hz	
	$\frac{Z(-25\text{ °C})}{Z(+20\text{ °C})}$	4		8			
	$\frac{Z(-40\text{ °C})}{Z(+20\text{ °C})}$	8		-			
Useful life 使用寿命 (105 °C, $V_R, I_{AC,R}$ )	3000 h	Requirements 要求:					
		$\Delta C/C \leq \pm 20\%$ of initial value 初始值的±20%					
		$\tan\delta \leq 2$ times initial specified limit 2倍初始规定值					
		$I_{leak} \leq$ initial specified limit 初始规定值					
Shelf life 储存寿命	After storage for 1000 h at 105 °C, the capacitors shall meet the requirement of useful life test after reforming process. After test: $V_R$ to be applied for 30 minutes, 24 to 48 hours before measurement. 105°C高温贮存1000小时, 并预处理后, 电容器必须符合使用寿命测试中对其电性能的要求。预处理方法: 先加额定电压充电30分钟, 恢复24至48小时后再测试。						
Frequency multiplier for rated ripple current 额定纹波电流频率系数	$V_R$ (V DC)	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz	50kHz~
	160~250	0.81	1.00	1.17	1.32	1.45	1.50
	350~450	0.77	1.00	1.16	1.30	1.41	1.43
Temperature multiplier for rated ripple current 额定纹波电流温度系数	+40 °C	+55 °C	+70 °C	+85 °C	+105 °C		
	2.7	2.5	2.1	1.7	1.0		
Sectional specification 分规范	IEC 60384-4						

Dimensional drawing

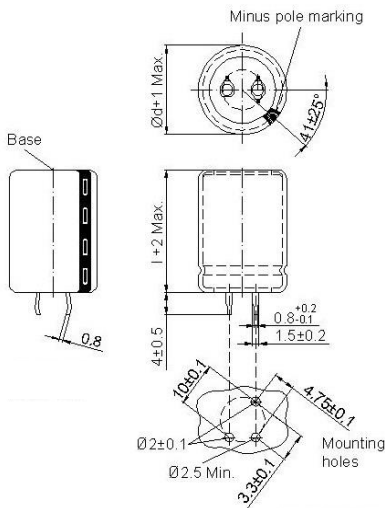
snap-in standard terminals (6.0±1) mm  
digit 15 of part number = 0



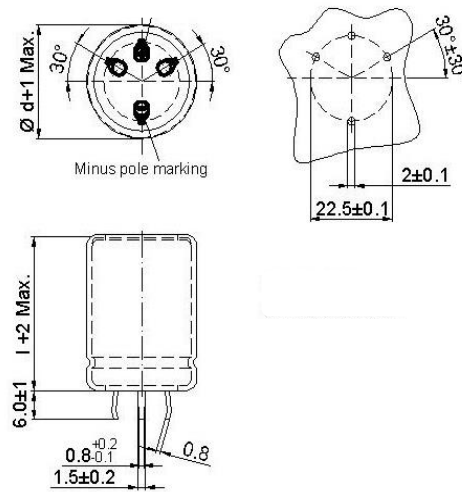
snap-in short terminals (4.0±0.5) mm  
digit 15 of part number = 7



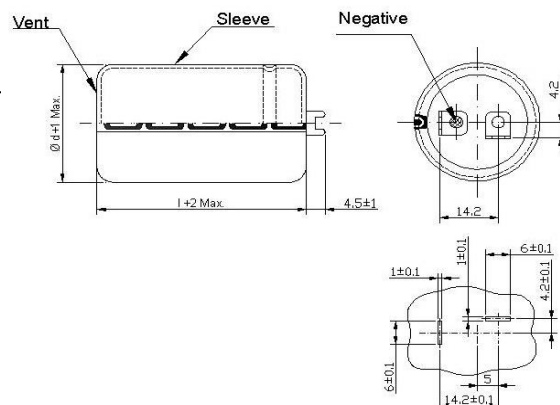
snap-in 3 terminals terminals (4.0±0.5) mm  
digit 15 of part number = 2



snap-in 4 terminal terminals (6.0±1) mm  
digit 15 of part number = 4



vibration-resistance terminals (4.5±1) mm  
digit 15 of part number = 8



**Technical dates and ordering codes**

V <sub>R</sub>	C <sub>R</sub>	Case dimensions d × l mm	I <sub>AC,R</sub>	Ordering code
	120Hz 20 °C μF		120 Hz 105 °C A	
160	470	22.0 × 25	1.40	B43256A1477M0*#
	560	22.0 × 30	1.50	B43256A1567M0*#
	680	22.0 × 35	1.70	B43256A1687M0*#
	680	25.4 × 25	1.70	B43256B1687M0*#
	820	22.0 × 35	2.00	B43256A1827M0*#
	820	25.4 × 30	2.00	B43256B1827M0*#
	820	30.0 × 25	2.00	B43256C1827M0*#
	1000	22.0 × 45	2.20	B43256A1108M0*#
	1000	25.4 × 35	2.20	B43256B1108M0*#
	1000	30.0 × 30	2.36	B43256D1108M0*#
	1200	25.4 × 40	2.30	B43256A1128M0*#
	1200	30.0 × 30	2.30	B43256B1128M0*#
	1200	35.0 × 25	2.30	B43256C1128M0*#
	1500	25.4 × 45	2.50	B43256A1158M0*#
	1500	30.0 × 35	2.50	B43256B1158M0*#
	1500	35.0 × 30	2.50	B43256C1158M0*#
	1800	30.0 × 40	2.70	B43256A1188M0*#
	1800	35.0 × 35	2.70	B43256B1188M0*#
	2200	30.0 × 45	2.90	B43256A1228M0*#
	2200	35.0 × 35	2.90	B43256B1228M0*#
2700	35.0 × 45	3.10	B43256A1278M0*#	
3300	35.0 × 50	3.30	B43256A1338M0*#	
200	270	22.0 × 25	1.04	B43256A2277M0*#
	330	22.0 × 25	1.20	B43256A2337M0*#
	390	22.0 × 25	1.31	B43256A2397M0*#
	390	22.0 × 30	1.31	B43256D2397M0*#
	470	22.0 × 30	1.48	B43256A2477M0*#
	470	25.4 × 25	1.48	B43256B2477M0*#
	560	22.0 × 35	1.60	B43256A2567M0*#
	680	22.0 × 40	1.75	B43256A2687M0*#
	680	25.4 × 30	1.75	B43256B2687M0*#
	680	30.0 × 25	1.75	B43256C2687M0*#
	820	22.0 × 45	2.04	B43256A2827M0*#
	820	25.4 × 35	2.04	B43256B2827M0*#
	1000	22.0 × 50	2.30	B43256A2108M0*#
	1000	25.4 × 45	2.30	B43256B2108M0*#
	1000	30.0 × 35	2.44	B43256G2108M0*#
	1000	35.0 × 30	2.46	B43256H2108M0*#

\* = Insulation feature

0 = PVC sleeve

6 = PET sleeve

# = Terminal style

0 = snap-in standard terminals (6.0±1) mm

2 = snap-in 3 terminals (4.0±0.5) mm

4 = snap-in 4 terminals (6.0±1) mm

7 = snap-in short terminals (4.0±0.5) mm

8 = vibration-resistance terminals (4.5±1) mm

**Technical dates and ordering codes**

V <sub>R</sub>	C <sub>R</sub>	Case dimensions d × l mm	I <sub>AC,R</sub>	Ordering code
	120Hz 20 °C μF		120 Hz 105 °C A	
200	1200	25.4 × 50	2.65	B43256A2128M0*#
	1200	35.0 × 30	2.65	B43256C2128M0*#
	1200	30.0 × 40	2.80	B43256F2128M0*#
	1500	30.0 × 40	2.80	B43256A2158M0*#
	1500	30.0 × 45	2.94	B43256D2158M0*#
	1800	30.0 × 50	3.08	B43256A2188M0*#
	1800	35.0 × 40	3.08	B43256B2188M0*#
	2200	35.0 × 50	3.67	B43256A2228M0*#
220	270	22.0 × 25	1.08	B43256A0277M0*#
	330	22.0 × 25	1.26	B43256A0337M0*#
	330	22.0 × 30	1.26	B43256B0337M0*#
	390	22.0 × 30	1.34	B43256A0397M0*#
	390	25.4 × 25	1.34	B43256B0397M0*#
	470	22.0 × 35	1.48	B43256A0477M0*#
	560	22.0 × 40	1.61	B43256A0567M0*#
	560	25.4 × 35	1.61	B43256B0567M0*#
	560	30.0 × 25	1.61	B43256C0567M0*#
	680	22.0 × 45	1.78	B43256A0687M0*#
	680	25.4 × 35	1.78	B43256B0687M0*#
	680	30.0 × 30	1.78	B43256C0687M0*#
	820	22.0 × 50	1.93	B43256A0827M0*#
	820	25.4 × 40	1.93	B43256B0827M0*#
	820	30.0 × 35	1.93	B43256C0827M0*#
	820	35.0 × 25	1.93	B43256D0827M0*#
	1000	25.4 × 50	2.33	B43256A0108M0*#
	1000	30.0 × 35	2.33	B43256B0108M0*#
	1000	35.0 × 30	2.33	B43256C0108M0*#
	1200	30.0 × 40	2.50	B43256A0128M0*#
	1200	35.0 × 35	2.50	B43256B0128M0*#
1500	30.0 × 50	2.76	B43256A0158M0*#	
1500	35.0 × 40	2.76	B43256B0158M0*#	
1800	35.0 × 50	3.11	B43256A0188M0*#	

\* = Insulation feature

0 = PVC sleeve

6 = PET sleeve

# = Terminal style

0 = snap-in standard terminals (6.0±1) mm

2 = snap-in 3 terminals (4.0±0.5) mm

4 = snap-in 4 terminals (6.0±1) mm

7 = snap-in short terminals (4.0±0.5) mm

8 = vibration-resistance terminals (4.5±1) mm

**Technical dates and ordering codes**

$V_R$	$C_R$ 120Hz 20 °C $\mu F$	Case dimensions d × l mm	$I_{AC,R}$ 120 Hz 105 °C A	Ordering code
250	220	22.0 × 25	1.00	B43256A2227M0*#
	270	22.0 × 25	1.10	B43256B2277M0*#
	270	22.0 × 30	1.10	B43256C2277M0*#
	330	22.0 × 30	1.20	B43256B2337M0*#
	330	25.4 × 25	1.20	B43256C2337M0*#
	390	22.0 × 35	1.30	B43256B2397M0*#
	390	25.4 × 30	1.30	B43256C2397M0*#
	470	22.0 × 40	1.40	B43256C2477M0*#
	470	25.4 × 35	1.40	B43256D2477M0*#
	470	30.0 × 25	1.40	B43256E2477M0*#
	560	22.0 × 45	1.50	B43256B2567M0*#
	560	25.4 × 35	1.50	B43256C2567M0*#
	560	30.0 × 30	1.50	B43256D2567M0*#
	680	22.0 × 50	1.70	B43256D2687M0*#
	680	25.4 × 40	1.70	B43256E2687M0*#
	680	30.0 × 30	1.70	B43256F2687M0*#
	680	35.0 × 25	1.70	B43256G2687M0*#
	820	25.4 × 45	2.00	B43256C2827M0*#
	820	30.0 × 35	2.00	B43256D2827M0*#
	820	35.0 × 30	2.00	B43256E2827M0*#
	1000	30.0 × 40	2.20	B43256E2108M0*#
	1000	35.0 × 35	2.20	B43256F2108M0*#
	1200	30.0 × 45	2.30	B43256D2128M0*#
1200	35.0 × 40	2.30	B43256E2128M0*#	
1500	35.0 × 45	2.50	B43256C2158M0*#	
1800	35.0 × 50	2.70	B43256C2188M0*#	
1800	35.0 × 55	2.81	B43256D2188M0*#	
350	120	22.0 × 25	0.75	B43256A4127M0*#
	150	22.0 × 30	0.82	B43256A4157M0*#
	180	22.0 × 30	0.90	B43256A4187M0*#
	180	25.4 × 25	0.90	B43256B4187M0*#
	220	22.0 × 35	1.00	B43256A4227M0*#
	220	25.4 × 30	1.00	B43256B4227M0*#
	270	22.0 × 40	1.10	B43256A4277M0*#
	270	25.4 × 35	1.10	B43256B4277M0*#
	270	30.0 × 25	1.10	B43256C4277M0*#

\* = Insulation feature

 0 = PVC sleeve  
 6 = PET sleeve

# = Terminal style

 0 = snap-in standard terminals (6.0±1) mm  
 2 = snap-in 3 terminals (4.0±0.5) mm  
 4 = snap-in 4 terminals (6.0±1) mm  
 7 = snap-in short terminals (4.0±0.5) mm  
 8 = vibration-resistance terminals (4.5±1) mm

**Technical dates and ordering codes**

V <sub>R</sub>	C <sub>R</sub> 120Hz 20 °C μF	Case dimensions d × l mm	I <sub>AC,R</sub> 120 Hz 105 °C A	Ordering code
350	330	22.0 × 45	1.20	B43256A4337M0*#
	330	25.4 × 40	1.20	B43256B4337M0*#
	330	30.0 × 30	1.20	B43256C4337M0*#
	390	25.4 × 45	1.30	B43256A4397M0*#
	390	30.0 × 35	1.30	B43256B4397M0*#
	470	25.4 × 50	1.40	B43256A4477M0*#
	470	30.0 × 40	1.40	B43256B4477M0*#
	470	35.0 × 30	1.40	B43256C4477M0*#
	560	30.0 × 45	1.50	B43256A4567M0*#
	560	35.0 × 35	1.50	B43256B4567M0*#
	680	30.0 × 50	1.70	B43256A4687M0*#
	680	35.0 × 40	1.70	B43256B4687M0*#
	820	35.0 × 45	1.90	B43256A4827M0*#
	400	100	22.0 × 25	0.68
120		22.0 × 30	0.73	B43256A9127M0*#
150		22.0 × 35	0.85	B43256A9157M0*#
180		22.0 × 35	0.95	B43256A9187M0*#
180		25.4 × 30	0.95	B43256B9187M0*#
180		30.0 × 25	0.95	B43256C9187M0*#
220		22.0 × 45	1.10	B43256A9227M0*#
220		25.4 × 35	1.10	B43256B9227M0*#
220		30.0 × 25	1.10	B43256C9227M0*#
270		22.0 × 50	1.22	B43256A9277M0*#
270		25.4 × 40	1.22	B43256B9277M0*#
270		30.0 × 30	1.22	B43256C9277M0*#
270		35.0 × 25	1.22	B43256D9277M0*#
330		25.4 × 45	1.44	B43256A9337M0*#
330		30.0 × 35	1.44	B43256B9337M0*#
390		25.4 × 50	1.55	B43256A9397M0*#
390		30.0 × 40	1.55	B43256B9397M0*#
390		35.0 × 30	1.55	B43256C9397M0*#
390		35.0 × 35	1.60	B43256D9397M0*#
470		30.0 × 45	1.68	B43256A9477M0*#
470		35.0 × 35	1.68	B43256B9477M0*#
560		30.0 × 50	1.90	B43256A9567M0*#
560		35.0 × 40	1.90	B43256B9567M0*#
680		35.0 × 45	2.12	B43256A9687M0*#

\* = Insulation feature

0 = PVC sleeve

6 = PET sleeve

# = Terminal style

0 = snap-in standard terminals (6.0±1) mm

2 = snap-in 3 terminals (4.0±0.5) mm

4 = snap-in 4 terminals (6.0±1) mm

7 = snap-in short terminals (4.0±0.5) mm

8 = vibration-resistance terminals (4.5±1) mm



**Technical dates and ordering codes**

V <sub>R</sub>	C <sub>R</sub> 120Hz 20 °C μF	Case dimensions d × l mm	I <sub>AC,R</sub> 120 Hz 105 °C A	Ordering code
450	82	22.0 × 25	0.64	B43256A5826M0*#
	100	22.0 × 30	0.69	B43256A5107M0*#
	100	25.4 × 25	0.69	B43256B5107M0*#
	120	22.0 × 35	0.72	B43256A5127M0*#
	120	25.4 × 30	0.72	B43256B5127M0*#
	150	22.0 × 40	0.79	B43256A5157M0*#
	150	25.4 × 30	0.79	B43256B5157M0*#
	150	30.0 × 25	0.79	B43256C5157M0*#
	180	22.0 × 45	0.87	B43256A5187M0*#
	180	25.4 × 35	0.87	B43256B5187M0*#
	180	30.0 × 30	0.87	B43256C5187M0*#
	220	25.4 × 40	1.05	B43256A5227M0*#
	220	30.0 × 30	1.05	B43256B5227M0*#
	220	35.0 × 25	1.05	B43256C5227M0*#
	270	25.4 × 50	1.23	B43256A5277M0*#
	270	30.0 × 35	1.23	B43256B5277M0*#
	270	35.0 × 30	1.23	B43256C5277M0*#
	330	30.0 × 40	1.38	B43256A5337M0*#
	330	35.0 × 35	1.38	B43256B5337M0*#
	390	30.0 × 50	1.61	B43256A5397M0*#
390	35.0 × 40	1.61	B43256B5397M0*#	
470	35.0 × 45	1.78	B43256A5477M0*#	
560	35.0 × 50	1.99	B43256A5567M0*#	

\* = Insulation feature

0 = PVC sleeve

6 = PET sleeve

# = Terminal style

0 = snap-in standard terminals (6.0±1) mm

2 = snap-in 3 terminals (4.0±0.5) mm

4 = snap-in 4 terminals (6.0±1) mm

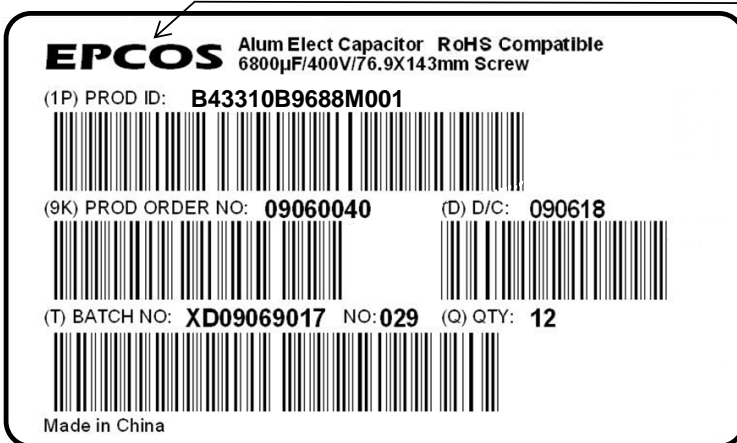
7 = snap-in short terminals (4.0±0.5) mm

8 = vibration-resistance terminals (4.5±1) mm

## Bar code label and marking of the capacitor 条形码标签和电容器标签

Below is an example of bar code label on package:

以下为包装箱上条形码标签示例:



Brand 品牌

(1P) Ordering code	订购代码
(9K) Product order number	订单号
(D) Date code (yywwdd)	日期代码 (年月日)
(T) Batch number	批号
(Q) Quantity	数量

The two examples below shows how the capacitor sleeve are marked according to case height:

以下两个示例说明不同壳体高度电容器套管上的标签内容:

Case height

壳体高度

20mm		<p>Brand</p> <p>Part number (ordering code)</p> <p>Rated capacitance, tolerance, rated voltage,</p> <p>Climatic category, month and year of production</p>	<p>品牌</p> <p>料号 (订购代码)</p> <p>额定电容、容差、额定电压</p> <p>气候分类、月.年 (生产日期)</p>
25mm		<p>Brand</p> <p>Part number (ordering code)</p> <p>Rated capacitance, tolerance, rated voltage,</p> <p>Climatic category</p> <p>Month and year of production</p>	<p>品牌</p> <p>料号 (订购代码)</p> <p>额定电容、容差、额定电压</p> <p>气候分类</p> <p>月.年 (生产日期)</p>
>25mm		<p>Brand</p> <p>Part number (ordering code)</p> <p>Rated capacitance, tolerance, rated voltage,</p> <p>Climatic category</p> <p>Month and year of production</p>	<p>品牌</p> <p>料号 (订购代码)</p> <p>额定电容、容差、额定电压</p> <p>气候分类</p> <p>月.年 (生产日期)</p>

The climatic category is specified according to IEC 60068-1. If there is not enough space on the case, the following codes may be used:

气候类别符合 IEC 60068 - 1。如果壳体上没有足够空间，可使用以下代码：

E.g.: 40/085/56, in coded form, would read GPF 例如：40/085/56的代码形式为GPF

1st letter (lower category temperature) 首字母 (下限类别温度)

Code letter 字母代码	F	G	H
Temperature 温度 (° C)	-55	-40	-25

2nd letter (upper category temperature) 第二字母 (上限类别温度)

Code letter 代码字母	K	M	P	S	U
Temperature 温度 (° C)	+125	+105(+100)	+85	+70	+60

3rd letter (humidity) 第三字母 (湿度)

Letter F: withstands IEC60068-2-78 Cab (damp heat, steady state), test duration 56 days.

字母F: 经受IEC 60068-2-78试验箱 (湿热、恒稳态), 试验周期56天。

## 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).

Release 2018-10