



Aluminum Electrolytic Capacitors

Snap-in capacitors

Series/Type: B43508

Date: April 1, 2014

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EPCOS AG is a TDK Group Company.

Long-life grade capacitors

长寿命级电容器

Applications

应用

- Frequency converters
变频器
- Uninterruptible power supplies
不间断电源
- Switch mode power supplies in industrial electronics
工业电子产品中的开关电源
- Solar and wind power generator
太阳能和风力发电设备
- Medical applications
医疗设备

Features

特点

- Ultra compact
体积小
- High reliability
可靠性高
- High ripple current capability
耐高纹波电流能力
- RoHS-compatible
符合RoHS要求
- Useful life of 3000h at 105 °C
105 °C 3000h使用寿命

Construction

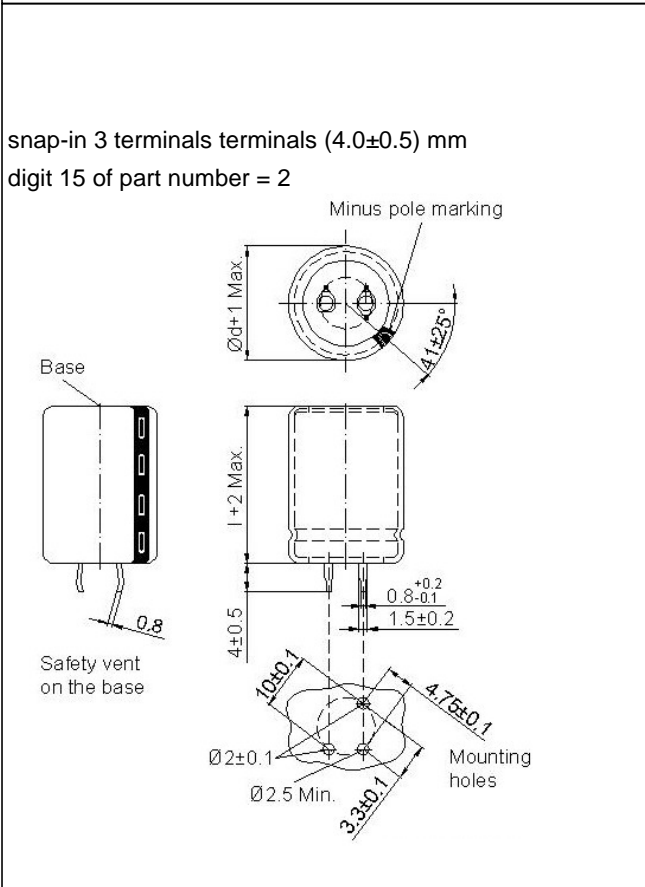
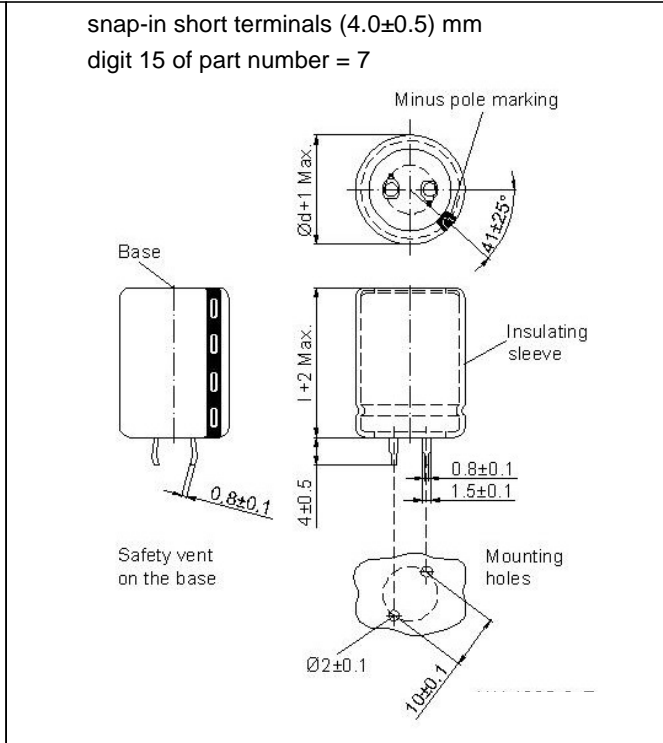
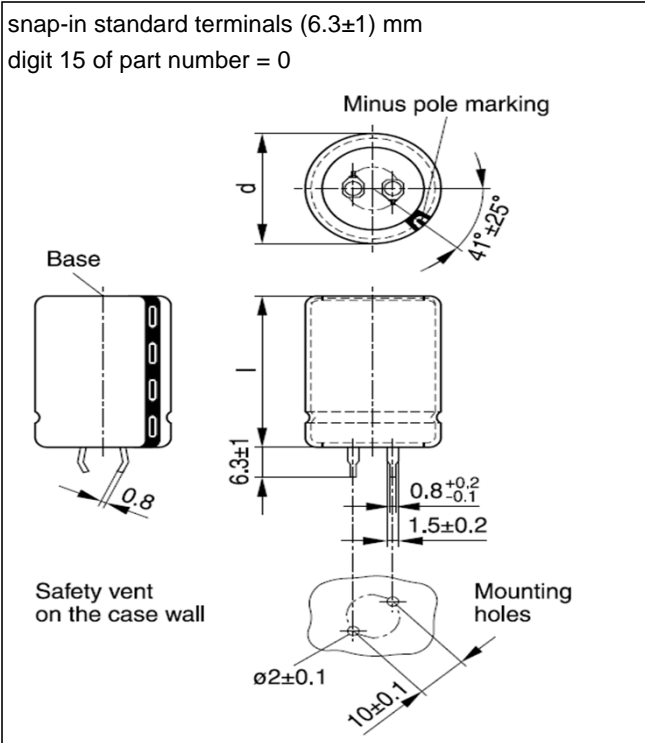
结构

- Charge/discharge-proof, polar
耐充放电，有极性
- 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	200...450 V DC							
Surge voltage V_S 浪涌电压 V_S	1.15 · V_R (for $V_R \leq 250$ V DC) 1.10 · V_R (for $V_R \geq 400$ V DC)							
Operating temperature range 工作温度范围	$V_R \leq 250$ V DC: -40 °C...+105 °C $V_R \geq 400$ V DC: -25 °C...+105 °C							
Rated capacitance C_R 额定电容量 C_R (20 °C, 120 Hz)	82...2700 μ F							
Capacitance tolerance 电容量公差	$\pm 20\%$ M							
Dissipation factor(max.) 损耗正切角(最大值) 20° C, 120Hz.	V_R (V DC)	200...250		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)	$I_{leak} \leq 0.3\mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right)^{0.7} + 4\mu A$							
Low temperature stability 低温稳定性 (max impedance ratio) (最大阻抗比率)	V_R (V DC)	200...250		400...450		120 Hz		
	Z (-25 °C) Z (+20 °C)	4		7				
	Z (-40 °C) Z (+20 °C)	7		13				
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 $\pm 20\%$						
		$\tan\delta \leq 2$ times initial specified limit 2倍初始规定值						
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)	d(mm)	50Hz	120Hz	1kHz	10kHz	20kHz
			200/250	22/25	0.72	1.00	1.40	1.50
30				0.81	1.00	1.20	1.26	1.27
35		0.84		1.00	1.14	1.19	1.20	
400		22/25	0.76	1.00	1.32	1.39	1.40	
		30	0.78	1.00	1.26	1.36	1.33	
		35	0.81	1.00	1.20	1.26	1.27	
450		22/25	0.76	1.00	1.32	1.39	1.40	
		30	0.76	1.00	1.32	1.39	1.4	
	35	0.78	1.00	1.26	1.32	1.33		
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	
	3.05	2.8	2.4		2.0		1.0	
Sectional specification 分规范	IEC 60384-4							

Dimensional drawing



Technical dates and ordering codes

V_R	C_R 120Hz 20 °C μF	Case dimensions d x l mm	ESR_{typ} 120 Hz 20 °C m Ω	Z_{max} 10 kHz 20 °C m Ω	$I_{AC,R}$ 120 Hz 60 °C A	$I_{AC,R}$ 120 Hz 85 °C A	$I_{AC,R}$ 120 Hz 105 °C A	Ordering code
200	330	22 x 25	340	480	2.94	2.19	1.08	B43508A2337M0*#
	390	22 x 30	290	400	3.33	2.49	1.23	B43508A2397M0*#
	390	25 x 25	290	400	3.29	2.46	1.22	B43508B2397M0*#
	470	22 x 35	240	340	3.79	2.83	1.40	B43508A2477M0*#
	470	25 x 30	240	340	3.76	2.81	1.39	B43508B2477M0*#
	560	22 x 35	200	280	4.14	3.09	1.52	B43508A2567M0*#
	560	25 x 30	200	280	4.11	3.07	1.51	B43508B2567M0*#
	680	22 x 40	160	230	4.70	3.51	1.74	B43508A2687M0*#
	680	25 x 35	160	230	4.69	3.50	1.73	B43508B2687M0*#
	680	30 x 25	160	230	4.14	3.09	1.52	B43508C2687M0*#
	820	22 x 50	140	200	5.44	4.07	2.01	B43508A2827M0*#
	820	25 x 40	140	200	5.31	3.98	1.97	B43508B2827M0*#
	820	30 x 30	140	200	4.74	3.54	1.75	B43508C2827M0*#
	820	35 x 25	140	200	4.03	3.01	1.48	B43508D2827M0*#
	1000	25 x 45	110	160	6.03	4.51	2.22	B43508A2108M0*#
	1000	30 x 35	110	160	5.42	4.05	2.01	B43508B2108M0*#
	1000	35 x 30	110	160	4.93	3.69	1.82	B43508C2108M0*#
	1200	25 x 50	95	130	6.77	5.07	2.50	B43508A2128M0*#
	1200	30 x 40	95	130	6.52	4.88	2.41	B43508B2128M0*#
	1200	35 x 30	95	130	5.40	4.04	2.00	B43508C2128M0*#
	1500	30 x 45	75	110	7.50	5.60	2.77	B43508A2158M0*#
	1500	35 x 35	75	110	6.25	4.68	2.32	B43508B2158M0*#
	1800	30 x 50	60	90	8.43	6.30	3.11	B43508A2188M0*#
	1800	35 x 40	60	90	7.07	5.28	2.62	B43508B2188M0*#
	2200	35 x 45	50	75	8.03	6.02	2.98	B43508A2228M0*#
	2700	35 x 55	40	60	9.34	6.98	3.46	B43508A2278M0*#
250	220	22 x 25	510	710	2.55	1.91	0.94	B43508E2227M0*#
	270	22 x 30	410	580	2.95	2.20	1.09	B43508E2277M0*#
	330	22 x 30	340	480	3.25	2.44	1.21	B43508E2337M0*#
	330	25 x 25	340	480	3.20	2.39	1.18	B43508F2337M0*#
	390	22 x 35	290	400	3.67	2.74	1.36	B43508E2397M0*#
	390	25 x 30	290	400	3.63	2.71	1.34	B43508F2397M0*#
	470	22 x 40	240	340	4.15	3.11	1.53	B43508E2477M0*#
	470	25 x 30	240	340	3.98	2.98	1.47	B43508F2477M0*#
	470	30 x 25	240	340	3.58	2.68	1.33	B43508G2477M0*#
	560	22 x 45	200	280	4.66	3.48	1.72	B43508E2567M0*#
	560	25 x 35	200	280	4.50	3.37	1.67	B43508F2567M0*#
	560	30 x 30	200	280	4.08	3.05	1.50	B43508G2567M0*#

* = Insulation feature

0 = PVC sleeve

6 = PET sleeve

= Terminal style

0 = snap-in standard terminals (6.3±1) mm

2 = snap-in 3 terminals (4.0±0.5) mm

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

Technical dates and ordering codes

V_R	C_R 120Hz 20 °C μF	Case dimensions d x l mm	ESR_{typ} 120 Hz 20 °C m Ω	Z_{max} 10 kHz 20 °C m Ω	$I_{AC,R}$ 120 Hz 60 °C A	$I_{AC,R}$ 120 Hz 85 °C A	$I_{AC,R}$ 120 Hz 105 °C A	Ordering code
250	680	22 x 50	160	230	5.26	3.93	1.95	B43508E2687M0*#
	680	25 x 40	160	230	5.12	3.83	1.90	B43508F2687M0*#
	680	30 x 30	160	230	4.50	3.37	1.66	B43508G2687M0*#
	680	35 x 25	160	230	3.77	2.82	1.39	B43508H2687M0*#
	820	25 x 45	140	200	5.78	4.33	2.13	B43508E2827M0*#
	820	30 x 35	140	200	5.12	3.83	1.90	B43508F2827M0*#
	820	35 x 30	140	200	4.59	3.43	1.70	B43508G2827M0*#
	1000	25 x 55	110	160	6.68	5.01	2.47	B43508E2108M0*#
	1000	30 x 40	110	160	6.21	4.65	2.30	B43508F2108M0*#
	1000	35 x 30	110	160	5.07	3.79	1.87	B43508G2108M0*#
	1200	30 x 45	95	130	6.99	5.23	2.59	B43508E2128M0*#
	1200	35 x 35	95	130	5.76	4.31	2.13	B43508F2128M0*#
	1500	30 x 55	75	110	8.20	6.14	3.04	B43508E2158M0*#
	1500	35 x 40	75	110	6.63	4.96	2.45	B43508F2158M0*#
	1800	35 x 50	60	90	7.66	5.74	2.83	B43508E2188M0*#
	2200	35 x 55	50	75	8.67	6.49	3.21	B43508E2228M0*#
400	100	22 x 25	1180	1730	1.68	1.26	0.62	B43508A9107M0*#
	120	22 x 30	990	1440	1.93	1.43	0.71	B43508A9127M0*#
	150	22 x 30	790	1150	2.15	1.61	0.79	B43508A9157M0*#
	150	25 x 25	790	1150	2.15	1.61	0.79	B43508B9157M0*#
	180	22 x 35	660	960	2.44	1.82	0.90	B43508A9187M0*#
	180	25 x 30	660	960	2.46	1.84	0.91	B43508B9187M0*#
	220	22 x 40	540	790	2.78	2.08	1.03	B43508A9227M0*#
	220	25 x 35	540	790	2.82	2.11	1.04	B43508B9227M0*#
	220	30 x 25	540	790	2.73	2.04	1.01	B43508C9227M0*#
	270	22 x 50	440	640	3.24	2.42	1.19	B43508A9277M0*#
	270	25 x 40	440	640	3.22	2.41	1.19	B43508B9277M0*#
	270	30 x 30	440	640	3.15	2.36	1.16	B43508C9277M0*#
	330	25 x 45	360	530	3.67	2.74	1.35	B43508A9337M0*#
	330	30 x 35	360	530	3.61	2.70	1.33	B43508B9337M0*#
	330	35 x 25	360	530	3.30	2.46	1.22	B43508C9337M0*#
	390	25 x 50	300	450	4.08	3.05	1.50	B43508A9397M0*#
	390	30 x 35	300	450	3.92	2.94	1.45	B43508B9397M0*#
	390	35 x 30	300	450	3.98	2.97	1.47	B43508C9397M0*#

* = Insulation feature

0 = PVC sleeve

6 = PET sleeve

= Terminal style

0 = snap-in standard terminals (6.3±1) mm

2 = snap-in 3 terminals (4.0±0.5) mm

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

Technical dates and ordering codes

V_R	C_R 120Hz 20 °C μF	Case dimensions d x l mm	ESR_{typ} 120 Hz 20 °C m Ω	Z_{max} 10 kHz 20 °C m Ω	$I_{AC,R}$ 120 Hz 60 °C A	$I_{AC,R}$ 120 Hz 85 °C A	$I_{AC,R}$ 120 Hz 105 °C A	Ordering code
400	470	30 x 40	250	370	4.73	3.54	1.75	B43508A9477M0*#
	470	35 x 35	250	370	4.52	3.38	1.67	B43508B9477M0*#
	560	30 x 50	210	310	5.45	4.07	2.02	B43508A9567M0*#
	560	35 x 40	210	310	5.09	3.81	1.88	B43508B9567M0*#
	680	30 x 55	170	260	6.14	4.59	2.27	B43508A9687M0*#
	680	35 x 45	170	260	5.77	4.32	2.13	B43508B9687M0*#
	820	35 x 50	140	210	6.50	4.86	2.40	B43508A9827M0*#
	1000	35 x 55	120	180	7.34	5.49	2.72	B43508A9108M0*#
450	82	22 x 25	1440	2100	1.63	1.22	0.60	B43508A5826M0*#
	100	22 x 30	1180	1730	1.87	1.40	0.69	B43508A5107M0*#
	100	25 x 25	1180	1730	1.87	1.40	0.69	B43508B5107M0*#
	120	22 x 35	990	1440	2.13	1.59	0.78	B43508A5127M0*#
	120	25 x 30	990	1440	2.14	1.60	0.79	B43508B5127M0*#
	150	22 x 40	790	1150	2.45	1.83	0.91	B43508A5157M0*#
	150	25 x 30	790	1150	2.40	1.79	0.89	B43508B5157M0*#
	150	30 x 25	790	1150	2.46	1.84	0.91	B43508C5157M0*#
	180	22 x 45	660	960	2.76	2.07	1.02	B43508A5187M0*#
	180	25 x 35	660	960	2.72	2.03	1.00	B43508B5187M0*#
	180	30 x 30	660	960	2.81	2.10	1.04	B43508C5187M0*#
	220	22 x 50	540	790	3.13	2.34	1.15	B43508A5227M0*#
	220	25 x 40	540	790	3.10	2.32	1.14	B43508B5227M0*#
	220	30 x 30	540	790	3.11	2.33	1.14	B43508C5227M0*#
	220	35 x 25	540	790	2.98	2.22	1.10	B43508D5227M0*#
	270	25 x 50	440	640	3.62	2.71	1.34	B43508A5277M0*#
	270	30 x 35	440	640	3.57	2.67	1.32	B43508B5277M0*#
	270	35 x 30	440	640	3.66	2.73	1.35	B43508C5277M0*#
	330	25 x 55	360	530	4.09	3.06	1.51	B43508A5337M0*#
	330	30 x 40	360	530	4.34	3.24	1.61	B43508B5337M0*#
	330	35 x 35	360	530	4.18	3.13	1.55	B43508C5337M0*#
	390	30 x 45	300	450	4.85	3.63	1.79	B43508A5397M0*#
	390	35 x 35	300	450	4.55	3.40	1.68	B43508B5397M0*#
	470	30 x 55	250	370	5.58	4.17	2.06	B43508A5477M0*#
	470	35 x 40	250	370	5.15	3.85	1.91	B43508B5477M0*#
	560	35 x 45	210	310	5.79	4.33	2.14	B43508A5567M0*#
	680	35 x 55	170	260	6.70	5.01	2.47	B43508A5687M0*#

* = Insulation feature

= Terminal style

0 = PVC sleeve

0 = snap-in standard terminals (6.3±1) mm

6 = PET sleeve

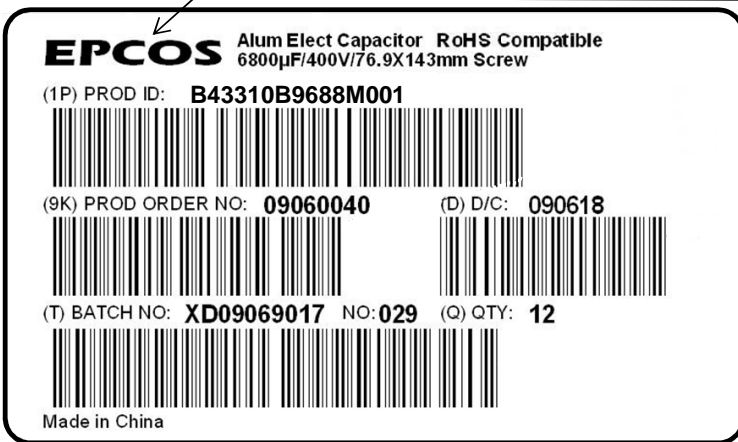
2 = snap-in 3 terminals (4.0±0.5) mm

7 = snap-in short terminals (4.0±0.5) 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		Brand Part number (ordering code) Rated capacitance, tolerance, rated voltage, Climatic category, month and year of production	品牌 料号 (订购代码) 额定电容、容差、额定电压 气候分类、月.年 (生产日期)
25mm		Brand Part number (ordering code) Rated capacitance, tolerance, rated voltage, Climatic category Month and year of production	品牌 料号 (订购代码) 额定电容、容差、额定电压 气候分类 月.年 (生产日期)
>25mm		Brand Part number (ordering code) Rated capacitance, tolerance, rated voltage, Climatic category Month and year of production	品牌 料号 (订购代码) 额定电容、容差、额定电压 气候分类 月.年 (生产日期)

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, EPCOS is 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 an EPCOS 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 lifesaving 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.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.
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7. The trade names EPCOS, Alu-X, CeraDiode, CeraLink, CeraPlas, CSMP, CSSP, CTVS, DeltaCap, DigiSiMic, DSSP, FilterCap, FormFit, LeaXield, MiniBlue, MiniCell, MKD, MKK, MLSC, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PQSine, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SIP5D, SIP5K, TFAP, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.