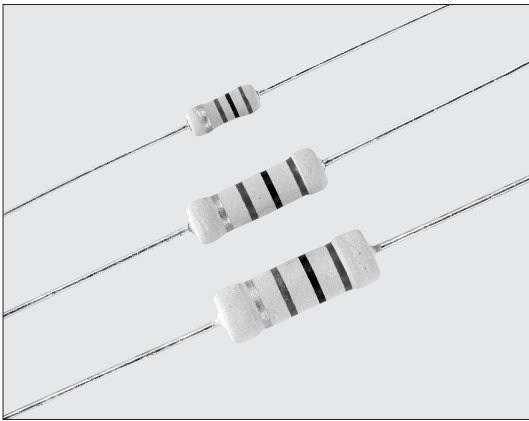


RESISTANCE TO POWER SURGE



PCF 冲击耐受电压耐浪涌陶瓷电阻器 Ceramic Resistors for Anti Pulse • Surge



外观颜色: 淡绿色 Coating color: Light green
表示: 色码 Marking: Color code

特点 Features

- KOA独自の陶瓷体电阻器。
- 冲击耐受电压特性优异。
- 相对于绕线和膜层电阻, 加强了不会断线。
- 符合欧盟RoHS。
- 阻燃性涂层。(相当UL-94 V-0)
- 无感型电阻器。
- KOA original bulk ceramic resistors.
- Excellent in anti-pulse characteristics.
- Higher reliability against disconnection compacted to wire wound resistors and film resistors
- Products meet EU-RoHS requirements.
- Flame retardant coating. (Equivalent to UL-94 V-0)
- Non-Inductive resistors.

用途 Applications

- X射线设备, 电子显微镜等的高电压线路用
- 加工设备的电源线路用
- High voltage circuits for X-ray generators and electron microscopes.
- Power supply circuits for machine tools, etc.

参考标准 Reference Standards

IEC 60115-1
JIS C 5201-1

额定值 Ratings

型号 Type	额定功率 Power Rating	电阻值范围 (Ω) Resistance Range		电阻温度系数 T.C.R. (×10 ⁻⁶ /K)	最高使用电压 Max. Working Voltage	最高过载电压 Max. Overload Voltage	最高脉冲电压 ^{※1} Max. Pulse Voltage	额定环境温度 Rated Ambient Temperature	编带和包装数 Taping & Q'ty (pcs)	
		K: ±10% E12	M: ±20% E6						T52	T631
PCF1/2C	0.5W	4.7~100k	4.7~100k	-900±300 : R < 100Ω -1300±300 : R ≥ 100Ω	200V	400V	10kV	500V	2,000	—
PCF1C	1.0W	3.3~390k	3.3~390k		300V	600V	14kV		—	1,000
PCF2C	2.0W				400V	800V	20kV	700V	—	500

额定环境温度 Rated Ambient Temperature: +70℃

使用温度范围 Operating Temperature Range: -40℃~+200℃

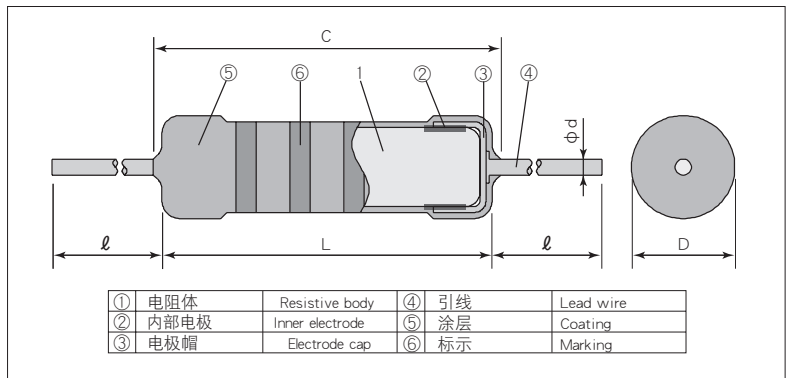
额定电压是 $\sqrt{\text{额定功率} \times \text{公称电阻值}}$ 所算出的值或表中最高使用电压两者中小的值为额定电压。

Rated voltage = $\sqrt{\text{Power Rating} \times \text{Resistance value}}$ or Max. working voltage, whichever is lower.

※1 性能表中高压脉冲实验条件下的最高脉冲电压

※1 The maximum pulse voltage in the "Resistance to pulse" examination condition of the performance column.

结构图 Construction



外形尺寸 Dimensions

型号 Type	尺寸 Dimensions (mm)					Weight (g) (1000pcs)
	L ±2	C Max.	D	d (Nominal)	ℓ ±3	
PCF1/2	9.0	11.1	3.5±0.5	0.7	30.0	450
PCF1	16.5	19.0	5.5±1.0	0.8	38.0	1340
PCF2	19.0	22.5	7.0±1.0			2240

品名构成 Type Designation

实例 Example	PCF	1	C	T631	R	103	K
品种 Product Code	PCF						
额定功率 Power Rating		1/2: 0.5W 1: 1.0W 2: 2.0W					
端子表面材质 Terminal Surface Material			C: SnCu				
二次加工 Taping				参照下述 See table Below			
包装 Packaging					R: 卷 R: REEL 空栏: 箱子 Nil: BOX		
公称电阻值 Nominal Resistance						3 digits	
阻值允许偏差 Resistance Tolerance							K: ±10% M: ±20%

欲知关于此产品含有的环境负荷物质详情(除EU-RoHS以外), 请与我们联系。
编带细节请参考卷末附录C。

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.

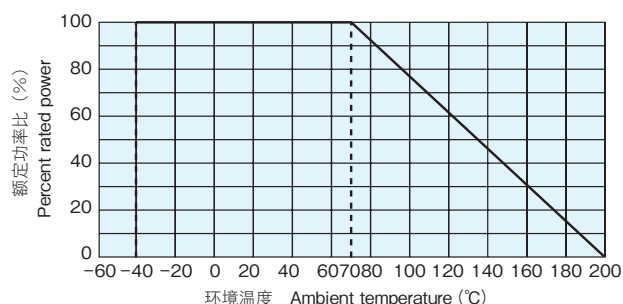
For further information on taping, please refer to APPENDIX C on the back pages.

二次加工对应表 Taping

型号 Type	轴向编带 Axial Taping	
	T52	T631
PCF1/2	○	—
PCF1	—	○
PCF2	—	○

高电压用陶瓷电阻器
High Voltage Type Resistors

■ 负荷减轻特性曲线 Derating Curve



在环境温度70℃以上使用时，7应按照左图负荷减轻特性曲线，减小额定功率。
For resistors operated at the ambient temperature of 70℃ or higher, the power rating shall be derated in accordance with the left derating curve.

■ 性能 Performance

试验项目 Test Items	标准值 Performance Requirements $\Delta R \pm$ (%+0.05 Ω)		试验方法 Test Methods	
	保证值 Limit	代表值 Typical		
电阻值 Resistance	在规定的容许差内 Within specified tolerance	—	25℃ 电阻值 Resistance	测定电压 Measuring voltage
			3.3 Ω ~8.2 Ω	0.3V
			10 Ω ~82 Ω	1.0V
			100 Ω ~390k Ω	3.0V
电阻温度系数 T.C.R.	-900 \pm 300 $\times 10^{-6}$ /K: R < 100 Ω -1300 \pm 300 $\times 10^{-6}$ /K: R \geq 100 Ω	—	+25℃/-40℃、+25℃/+75℃ and +25℃/+125℃	
电压系数 (在1k Ω 以上适用) Voltage coefficient (Apply for 1k Ω or over)	0~-0.20%/V	—	额定电压和额定电压 \times 10% Rated voltage and rated voltage \times 10%	
过载 (短时间) Overload (Short time)	2	0.4	额定电压 \times 2.5倍或最高过载电压中低的一方施加5秒 Rated voltage \times 2.5 or Max. overload vol., whichever is lower, for 5s.	
高压脉冲 Resistance to pulse	5	—	在试验电路中，从最高脉冲电压上充电的电容器，以1秒ON、1秒OFF，向10000循环电阻施加高压脉冲 The resistor mounted on to the test circuit as below is applied with high voltage impulse 10000 cycles.	
耐焊接热 Resistance to soldering heat	2	0.8	350℃ \pm 10℃、3.5s \pm 0.5s	
温度突变 Rapid change of temperature	2	0.4	-40℃ (30min.) / +85℃ (30min.) 5 cycles	
耐湿负荷 Moisture resistance	5	0.6	40℃ \pm 2℃, 90%~95%RH, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle	
额定负荷 Load life	5	0.4	70℃ \pm 2℃, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle	
耐溶剂性 Resistance to solvent	应外观无异常，表示可以容易地辨认 No abnormality in appearance. Marking shall be easily legible.	—	在异丙醇或二甲苯中浸3分钟，除去滴液后放置10分钟后，刷10次 Dipping in IPA or Xylene for 3 min. and leaving for 10 min. after removing drops, then brushing 10 times.	

高压用电阻器
High Voltage Type Resistors

■ 使用注意事项 Precautions for Use

- 在容易发生雷击等浪涌的环境中，在开放电路中使用的电阻器，直接连接输入、输出、接地的电阻器，在施加了脉冲的电路中所使用的电阻器，有可能被浪涌和脉冲所破坏，因而，对有可能性的电涌和脉冲，需要设想最坏状态，进行充分检验后，选定电阻器。
- 由于包装涂层是阻燃性特种涂料，对外部冲击比较弱，所以在使用上应注意。应在最小限度清洗。清洗后涂层膜会比较弱，因此，在充分干燥前，不要在涂层膜上施加外力。由于要在干燥后才能恢复到原来强度，因此应注意，在清洗后约20分钟内，在电阻的涂层膜上不要施加外力。特别不要进行基板的堆叠等。
- 本产品因为难断线，根据电路零部件的故障等过载若一直持续，电阻体持续过度加热会造成电阻器和周围的可燃性物质发烟，有引燃的可能性。通常使用中，及对异常发生时，电路设计时本产品表面温度不得超过200℃。
- Under the environment where surge like thunders etc. is apt to happen, the resistors used for open circuit, resistors connected directly to input, output or ground, and resistors used for the circuit pulse applied to, may be destructed by surge or pulse. Therefore, the resistors need to be selected after sufficient check on the supposition of the worst condition against possible surge and pulse.
- Be careful to handle these resistors because outer coatings are comparatively weak to outer shock due to flameproof special coats. Please wash them to a minimum. No external force is given to the coating films until they are well dried because the coating films become weaker right after washing. The original strength will be returned after they are dried, so please pay attention not to apply any external force onto the coating film of resistors for 20 minutes after drying. Especially no PC boards shall be piled up.
- When overload is impressed continuously by the trouble of the circuit part because this product is hard to be snapped, a resistor body continues being overheated and emits smoke from a resistor and neighboring flammable materials and may catch fire. In a steady use state and heterology, please design the circuit so that the surface temperature of this product is not as above 200 degrees Celsius.

本样本册中记载的产品规格如有变更，恕不一一奉告。订购及使用之前，请仔细确认规格表的内容。

用于车载设备、医疗设备、航空设备以及其它涉及人身安全、或可能引起重大损失的设备上时，请务必先与我公司联系。这些产品在这类用途中出现故障或失灵可能导致人身事故或严重损坏。

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

Contact our sales representatives before you use our products for applications including automobiles, medical equipment and aerospace equipment.

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