

METAL FILM (PRECISION)



RNS 涂层绝缘型精密级金属膜固定电阻器 Coat-Insulated Precision Fixed Metal Film Resistors



外观颜色: 亮灰色 Coating color: Light gray
表示: 文字表示 Marking: Alphanumeric

特点 Features

- 阻值允许偏差±0.1%，对应T.C.R.±5×10⁻⁶/K的高精度品。
- 电阻值的长期稳定性优异。
- 可以自动插入。
- 符合欧盟RoHS。
- AEC-Q200相关数据已取得。(RNS1)
- High precision resistors with resistance tolerance ±0.1% and T.C.R. ±5×10⁻⁶/K.
- Excellent long term stability in resistance value.
- Automatic insertion is applicable.
- Products meet EU-RoHS requirements.
- AEC-Q200 qualified (RNS1).

取得标准 Approvals Awarded

MIL-R-10509G standard (USA)

二次加工对应表 Taping & Forming Matrix

形名 Type	轴向编带 Axial Taping			径向编带 Radial Taping		
	T26	T52	T521	VT	VTP	VTE
RNS1/8	○	○	-	○	○	○
RNS1/4	-	○	-	-	-	-
RNS1/2	-	○	-	-	-	-
RNS1	-	-	○	-	-	-

额定值 Ratings

型号 Type	额定功率 Power Rating	电阻温度系数 T.C.R. (×10 ⁻⁶ /K)	电阻值范围 Resistance Range (Ω)				最高使用电压 Max. Working Voltage	最高过载电压 Max. Overload Voltage	耐电压 Dielectric Withstanding Voltage	额定环境温度 Rated Ambient Temp.	使用温度范围 Operating Temp. Range
			B: ±0.1% E24 • E192	C: ±0.25% E24 • E192	D: ±0.5% E24 • E192	F: ±1% E24 • E96					
RNS1/8 (RN55)	0.125W	Y: ±5	100~100k	100~100k	100~100k	100~100k	200V	400V	500V	70°C	-25°C~ +85°C
		T: ±10	100~200k	100~200k	100~200k	100~200k					
		E: ±25	5.1~750k	5.1~1.62M	0.2~2M	0.2~2M					
		C: ±50									
RNS1/4 (RN60)	0.25W	E: ±25	5.1~1M	5.1~2M	0.2~2M	250V	500V	700V	70°C	-55°C~ +165°C	
		C: ±50	5.1~1.5M		0.2~5.1M						0.2~5.1M
RNS1/2 (RN65)	0.5W	E: ±25	5.1~1.5M	5.1~2.4M	0.2~2.4M	300V	600V	700V			
		C: ±50	5.1~2M		0.2~5.1M						0.2~5.1M
RNS 1 (RN70)	1W	E: ±25	5.1~2M	5.1~2.4M	0.2~5.1M	350V	700V	1000V			
		C: ±50	5.1~2.4M		0.2~5.1M				0.2~6.8M		

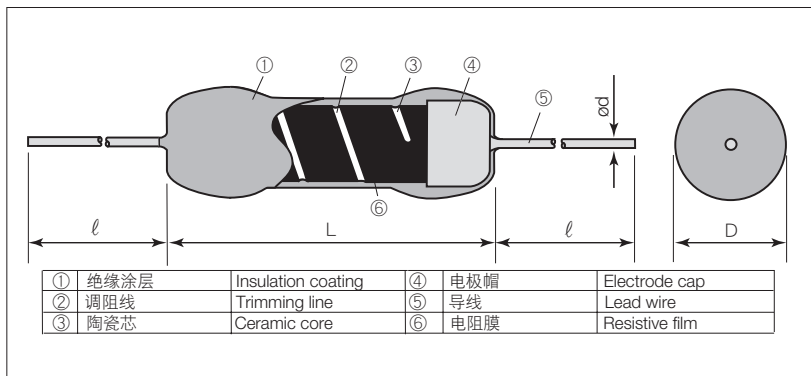
额定电压是√额定功率×公称电阻值所算出的值或表中最高使用电压两者中小的值为额定电压。

Rated voltage = √Power Rating × Resistance value or Max. working voltage, whichever is lower.

本样本册中记载的产品规格如有变更，恕不一一奉告。订购以及使用之前，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，请务必事先与我公司联系。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.
Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

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结构图 Construction



外形尺寸 Dimensions

型号 Type	尺寸 Dimensions (mm)				Weight (g/1000pcs)
	L±1	D±0.5	d (Nominal)	ℓ±3	
RNS1/8	6.4	2.3	0.6	38	220
RNS1/4	9.5	3.5			440
RNS1/2	13.5				520
RNS 1	15.5	5.5			0.8

※ 引线长度按照成型和编带而改变。

※ Lead length changes depending on taping and forming type.

品名构成 Type Designation

实例 Example

RNS	1/8	E	C	T52	A	1003	B
品种 Product Code	额定功率 Power Rating	电阻温度系数 T.C.R. (×10 ⁻⁶ /K)	端子表面材质 Termination Surface Material	二次加工 Taping & Forming	包装 Packaging	公称电阻值 Nominal Resistance	阻值允许偏差 Resistance Tolerance
	1/8: 0.125W 1/4: 0.25W 1/2: 0.5W 1: 1W	Y: ±5 T: ±10 E: ±25 C: ±50	C: SnCu	参照下述 See table below	A: AMMO包装 A: AMMO R: 卷 R: REEL 空栏: 箱子 Nil: BOX	4 digits	B: ±0.1% C: ±0.25% D: ±0.5% F: ±1%

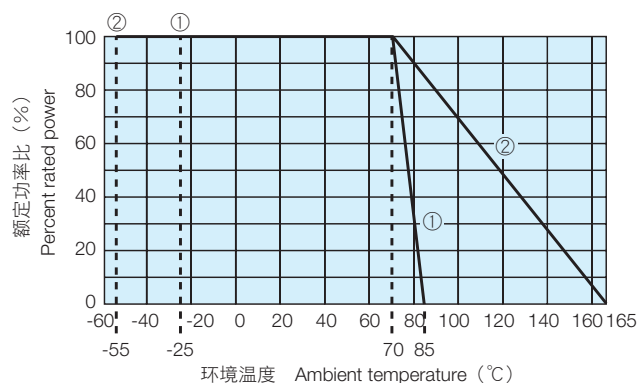
欲知关于此产品含有的环境负荷物质详情(除EU-RoHS以外)，请与我们联系。

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.

■ 负荷减轻特性曲线 Derating Curve



①电阻温度系数 T.C.R.: Y ($\pm 5 \times 10^{-6}/K$), T ($\pm 10 \times 10^{-6}/K$)

②电阻温度系数 T.C.R.: E ($\pm 25 \times 10^{-6}/K$), C ($\pm 50 \times 10^{-6}/K$)

在环境温度70°C以上使用时, 应按照上图负荷减轻特性曲线, 减小额定功率。

For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above derating curve.

■ 性能 Performance

试验项目 Test Items	标准值 Performance Requirements $\Delta R \pm (\% + 0.05 \Omega)$		试验方法 Test Methods
	保证值 Limit	代表值 Typical	
电阻值 Resistance	在规定的允许偏差内 Within specified tolerance	-	25°C
电阻温度系数 T.C.R.	在规定的允许偏差内 Within specified tolerance	-	Y, T: +25°C/+65°C E, C: +25°C/+125°C
过载(短时间) Overload (Short time)	0.25	0.15	额定电压×2.5倍或者最高过载电压, 取两者中低的一方施加5秒 Rated voltage × 2.5 or Max. overload vol., whichever is lower, for 5s.
耐焊接热 Resistance to soldering heat	0.2	0.075	350°C ± 10°C, 3.5s ± 0.5s
温度突变 Rapid change of temperature	0.2	0.075	-55°C (30min.) / +85°C (30min.) 5 cycles
耐湿负荷 Moisture resistance	0.75	0.5	40°C ± 2°C, 90%~95%RH, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle
在70°C时的耐久性 Endurance at 70°C	0.5	0.35	70°C ± 2°C, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle

■ 使用注意事项 Precautions for Use

- 助焊剂等在本产品和安装的印刷电路板上附着离子性杂质时, 其耐湿性·耐腐蚀性将受到影响。助焊剂内有时含有氯·酸等离子性物质, 为除去这些离子性物质应进行清洗。特别是使用无铅助焊剂时, 由于湿润性提高了, 有时会含有大量离子性物质, 所以在使用RMA系的焊锡或助焊剂时, 应充分进行清洗。并且, 保管环境和安装条件、环境等, 附着了汗·盐等离子性物质时, 其耐湿性·耐腐蚀性也将受到影响。对于这种污染, 为了除去这些离子性物质, 应当进行清洗。
- Ionic impurities such as flux etc. that are attached to these products or those mounted onto a PCB, negatively affect their moisture resistance, corrosion resistance, etc. The flux may contain ionic substances like chlorine, acid, etc. Please wash them to get rid of these ionic substances especially when using lead-free solder that may contain much of the said substances for improving a wetting characteristic. Using RMA solder or RMA flux, or well-washing is needed. Also, attaching ionic substances such as perspiration, salt etc. by storage environments or mounting conditions/environments negatively affects their moisture resistance, corrosion resistance etc. Please wash them to remove the ionic substances when they are polluted.