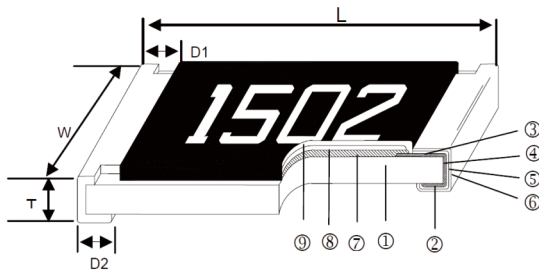


普通厚膜电流敏感贴片电阻(RR) Current Sensing Thick Film Chip Resistor

■ **Resume 摘要**

Low inductance/Highly reliable multilayer electrode construction/Higher component and equipment reliability/Reduced size of final equipment reliability.
低电感值, 高可靠度多层电极结构, 更高可靠度元件和设备, 高可靠度的终端设备小体积化.

■ **Construction 结构图**



- ① Alumina Substrate 陶瓷基板(氧化铝基板)
- ② Bottom Electrode(Ag) 下导电极(银)
- ③ Top Electrode(Ag-Pd) 上导电极(银-钯)
- ④ Edge Electrode(NiCr) 侧导电极(镍-铬)
- ⑤ Barrier Layer(Ni) 电镀介质层(镍)
- ⑥ External Electrode(Sn) 外部端电极(锡)
- ⑦ Resistor Layer(RuO₂/Ag) 电阻层(氧化钌/银)
- ⑧ Primary Overcoat(Glass) 基层密封层(玻璃)
- ⑨ Secondary Overcoat(Epoxy) 第二层密封层(树脂)

■ **Dimensions 尺寸**

Size 规格	L	W	T	D ₁	D ₂
0402	1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.20 ± 0.10
0603	1.60 ± 0.10	0.80 ± 0.15	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20
0805	2.00 ± 0.15	1.25 ± 0.15	0.50 ± 0.10	0.40 ± 0.20	0.40 ± 0.20
1206	3.10 ± 0.10	1.55 ± 0.10	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.25
1210	3.10 ± 0.10	2.60 ± 0.15	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.25
1812	4.50 ± 0.20	3.20 ± 0.20	0.55 ± 0.20	0.50 ± 0.20	0.60 ± 0.20
2010	5.00 ± 0.10	2.50 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.60 ± 0.30
2512	6.35 ± 0.10	3.10 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.60 ± 0.30

■ **Part Numbering 型号名称**

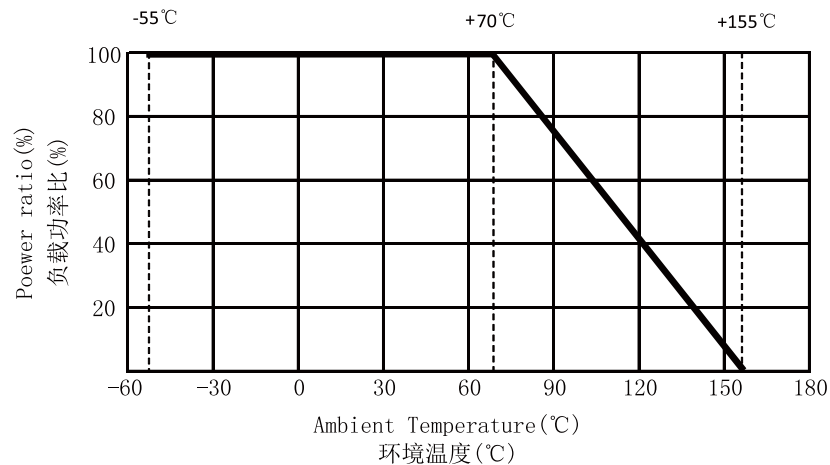
RR	2012 (0805)	LR010	J	T	V
Product Type 产品类型	Resistor Size 电阻规格	Resistance 阻值	Resistance Tolerance 阻值公差	Packing Code 包装形式	High Power 升功率
RR	1005 (0402) 1608 (0603) 2012 (0805) 3216 (1206) 3225 (1210) 4532 (1812) 5025 (2010) 6432 (2512)	LR100:0.1 Ω LR010:0.01 Ω LR001:1m Ω	F= ±1% J= ±5%	T: Taping Reel 卷装 B: Bulk 散装	S : 2W N : 1W Q : 3/4W U : 1/2W O : 1/3W V : 1/4W W : 1/8W X : 1/10W Y : 1/16W

■ Standard Electrical Specifications 标准规格表

Type 型号	Item 项目	Power Rating 额定功率	Operating Temp. Range 操作温度范围	Max. Operating Current 最大工作电流	Resistance Range 阻值范围	TCR 温度系数 (PPM/°C)
0402		1/16W *1/10W	-55~155°C	1.11A *1.40A	50mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500
0603		1/10W *1/8W	-55~155°C	2.23A *2.50A	20mΩ ~47mΩ	± 1200
					50mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500
0805		1/8W *1/4W	-55~155°C	3.53A *5.00A	10mΩ ~18mΩ	± 1500
					20mΩ ~47mΩ	± 1200
					50mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500
1206		1/4W *1/3W	-55~155°C	5.00A *5.77A	10mΩ ~18mΩ	± 1500
					20mΩ ~47mΩ	± 1200
					50mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500
1210		1/3W *1/2W	-55~155°C	5.77A *7.07A	10mΩ ~18mΩ	± 1500
					20mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500
1812		1/2W *3/4W	-55~155°C	7.07A *8.66A	10mΩ ~18mΩ	± 1500
					20mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500
2010		3/4W *1W	-55~155°C	8.66A *10.0A	10mΩ ~18mΩ	± 1500
					20mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500
2512		1W *2W	-55~155°C	10.0A *14.1A	10mΩ ~18mΩ	± 1500
					20mΩ ~91mΩ	± 800
					100mΩ ~976mΩ	± 500

*:High Power升功率

■ Derating Curve 功率衰减曲线图



■ Environmental Characteristics 信赖性试验项目

Item 项目	Requirement 条件		Test Method 测试方法
	± 1%	± 5%	
Temperature Coefficient of Resistance(T.C.R.) 温度系数(T.C.R.)	As Spec. 参考规格表		-55℃~+125℃, 25℃ is the reference temperature 参考温度
Short Time Overload 短时间过负载	± (1.0%+0.05 Ω)	± (2.0%+0.05 Ω)	RCWV*2.5 or Max.Overload voltage whichever is lower for 5 seconds,2 seconds for high power series 额定电压的2.5倍或最大负载电压5秒, 提升功率系列2秒
Insulation Resistance 绝缘阻抗	≥10G		Max.Overload voltage for 1 minute 施加最大负载电压1分钟
Endurance 负载寿命	± (1.0%+0.10 Ω)	± (2.0%+0.10 Ω)	70 ± 2℃,RCWV for 1000 hrs with 1.5 hrs"ON" and 0.5 hrs "OFF" 70 ± 2℃温度中施加额定电压,1.5 小时"开", 0.5小时"关", 共1000小时
Damp Heat with Load 耐湿负荷	± (1.0%+0.10 Ω)	± (2.0%+0.10 Ω)	40 ± 2℃,90~95%R.H.,RCWV for 1000 hrs with 1.5 hrs"ON" and 0.5 hrs "OFF" 在温度40 ± 2℃,相对湿度90~95%环境中施加额定电压, 1.5 小时"开", 0.5小时"关",共1000小时
Dry Heat 耐热性试验	± (1.0%+0.05 Ω)	± (1.5%+0.10 Ω)	at +125/+155℃ for 1000hrs 置于+125/+155℃ 温度中, 共1000小时
Bending Strength 弯折强度测试	± (1.0%+0.05 Ω)	± (1.0%+0.05 Ω)	Bending once for 5 seconds 2010,2512 sizes:2mm Other sizes:3mm 产品焊在测试板上,中央施力下压5秒 下压深度: 2010,2512 :2毫米 其它尺寸 :3毫米
Solderability 焊锡性	95% min. coverage 导体爬锡面积大于95%		245 ± 5℃ for 3 seconds 245 ± 5℃锡炉中,持续3秒
Resistance to Soldering Heat 抗焊锡热	± (0.5%+0.05 Ω)	± (1.0%+0.05 Ω)	260 ± 5℃ for 10 seconds 260 ± 5℃锡炉中,持续10 秒
Voltage Proof 耐电压	No breakdown or flashover 无击穿或跳火现象		1.42 times Max.Operating Voltage for 1 minute 最大操作电压*1.42倍, 持续1分钟
Leaching 溶蚀测试	Individual leaching area ≤5% Total leaching area ≤10% 导体各面溶蚀区域≤5% 导体总面积溶蚀区域≤10%		260 ± 5℃ for 30 seconds 260 ± 5℃锡炉中,持续30秒
Rapid Change of Temperature 冷热冲击	± (0.5%+0.05 Ω)	± (1.0%+0.05 Ω)	-55℃ to+155℃ 5 cycles -55℃ to+155℃ 5 次

Operating Voltage= $\sqrt{P \cdot R}$ or Max.Operating Voltage listed above,whichever is lower.
 Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$ or Max.Overload Voltage listed above,whichever is lower.
 RCWV(Rated Continuous Working Voltage)= $\sqrt{P \cdot R}$ or Max. Operating Voltage whichever is lower.
 Storage Temperature:25 ± 3℃; Humidity<80%RH
 Reference Standards:IEC 60115-1,60068-2-58;JIS-C 5201-1
 ■RCWV(额定持续工作电压)= $\sqrt{P \cdot R}$ 或者较小的最大操作电压。
 操作电压= $\sqrt{P \cdot R}$, 过负载电压= $2.5 \cdot \sqrt{P \cdot R}$,操作电流= $\sqrt{P/R}$
 ■储存温度:25 ± 3℃; 湿度 < 80%RH
 ■依据标准:IEC 60115-1,60068-2-58;JIS-C 5201-1