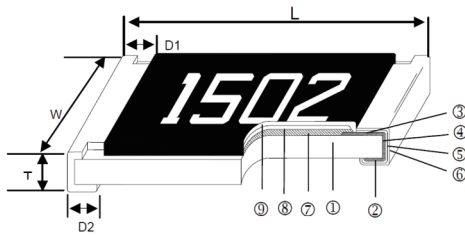


薄膜贴片电阻(TCRG) Thin Film Chip Resistor

■ **Resume 摘要**

Advanced thin film technology/Wide resistance range 1Ω~2.49MΩ
先进的薄膜技术, 阻值范围1Ω~2.49MΩ

■ **Construction 结构图**



- ① Alumina Substrate 陶瓷基板(氧化铝基板)
- ② Bottom Electrode(Ag) 下导电电极(银)
- ③ Top Electrode(Ag-Pd) 上导电电极 (银-钯)
- ④ Edge Electrode(NiCr) 侧导电电极 (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(NiCr) 电阻层(镍铬)
- ⑧ Overcoat(Epoxy) 基层密封层(环氧树脂)
- ⑨ Marking (丝印)

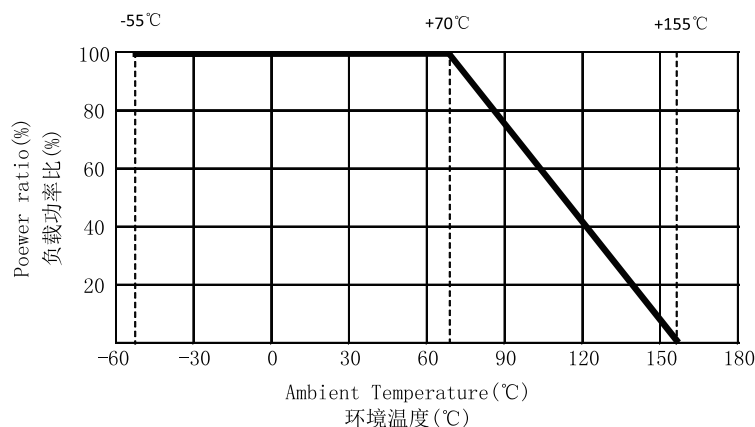
■ **Dimensions 尺寸**

Size 规格	L	W	T	D ₁	D ₂
0402	1.00 ± 0.05	0.50 ± 0.05	0.30 ± 0.10	0.20 ± 0.10	0.20 ± 0.10
0603	1.60 ± 0.10	0.80 ± 0.10	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	0.30 ± 0.20	0.40 ± 0.20
1206	3.10 ± 0.15	1.55 ± 0.15	0.55 ± 0.10	0.42 ± 0.20	0.35 ± 0.25

■ **Part Numbering 型号名称**

TCRG	3216 (1206)	L182	D	T	50PPM
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	PPM/°C
TCRG	1005 (0402) 1608 (0603) 2012 (0805) 3216 (1206)	L1801:1.8KΩ L1R30:1.3Ω	B= ± 0.1% C= ± 0.25% D= ± 0.5% F= ± 1%	T: Taping Reel 卷装 B: Bulk 散装	25PPM 50PPM

■ **Derating Curve 功率衰减曲线图**



■ Standard Electrical Specifications 标准规格表

Item Type 项目 型号	Power Rating 额定功率	Operating Temp. Range 操作温度范围	Max. Operating Voltage 最大工作电压	Max. Overload Voltage 最大负载电压	Resistance Range 阻值范围				TCR 温度系数 (PPM/°C)
					±0.1%	±0.25%	±0.5%	±1%	
0402	1/16W	-55~155°C	50V	100V	4.7Ω~255KΩ				±25 ±50
0603	1/10W	-55~155°C	75V	150V	1Ω~1MΩ				±25 ±50
0805	1/8W	-55~155°C	150V	300V	1Ω~2MΩ				±25 ±50
1206	1/4W	-55~155°C	200V	400V	1Ω~2.49MΩ				±25 ±50

■ Environmental Characteristics 信赖性试验项目

Item 项目	Requirement 条件		Test Method 测试方法
	±1%及以下	Jumper 跳线	
Temperature Coefficient of Resistance(T.C.R.) 温度系数(T.C.R.)	As Spec. 参考规格表		-55°C~+155°C, 25°C is the reference temperature 参考温度
Short Time Overload 短时间过负载	ΔR ± 0.5%		RCWV*2.5 or Max. Overload voltage whichever is lower for 5 seconds 额定电压的2.5倍或最大负载电压5秒
Insulation Resistance 绝缘阻抗	≥1G		Apply 100Vdc for 1 minute 施加电压100V 1分钟
Endurance 负载寿命	ΔR ± 0.5%		70 ± 2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" 70 ± 2°C 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	ΔR ± 0.5%		40 ± 2°C, 90~95% R.H., RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" 在温度40 ± 2°C, 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
Bending Strength 弯折强度测试	ΔR ± 0.25%		Bending amplitude 3mm for 10 seconds 产品焊在测试板上, 中央施力下压10秒下压深度: 3毫米
Solderability 焊锡性	95% min. coverage 导体爬锡面积大于95%		245 ± 5°C for 3 seconds 245 ± 5°C 锡炉中, 持续3秒
Resistance to Soldering Heat 抗焊锡热	ΔR ± 0.5%		260 ± 5°C for 10 seconds 260 ± 5°C 锡炉中, 持续10 秒
Voltage Proof 耐电压	By Type 依据型号		Max. Overload Voltage for 1 minute 最大过负载电压, 持续1分钟
Low Temperature Operation 低温操作	ΔR ± 0.5%		1 hour, -65°C, followed by 45 minutes of RCWV 在45分钟RCWV之后, 在-65°C 温度下持续1小时
Thermal Shock 热冲击	ΔR ± 0.5%		-55°C 到 +125/+150°C, 100cycles, 100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°C; 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°C; 湿度 < 80% RH
 ■ 依据标准: IEC 60115-1, 60068-2-58; JIS-C 5201-1