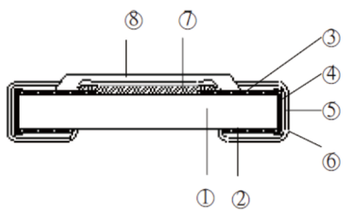
薄膜贴片排阻(TCRA)Thin Film Chip Resistor Arrays

■ Resume 摘要

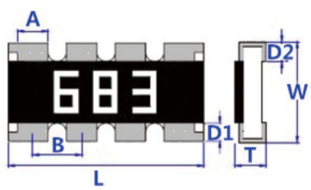
Advanced thin film technology 先进的薄膜技术
Very tight tolerance down to ±0.1% 极高的公差精度±0.1%
Extremely low TCR down to ±10PPM 极低的温度系数±10PPM

■ 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(Ag) 侧导电极(银)
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) 密封层(树脂)

■ Dimensions 尺寸



Size 规格	L	W	T	D_1	D_2	A	B
0603	3.20±0.15	1.60±0.15	0.55±0.10	0.30±0.15	0.30±0.15	0.50±0.15	0.80±0.05

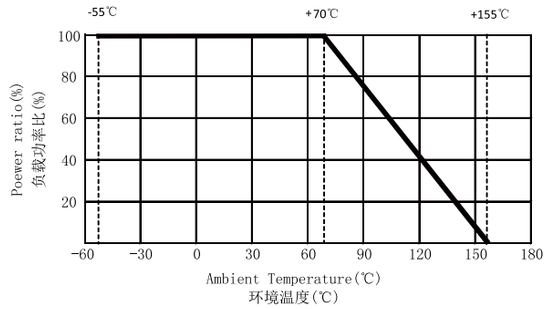
■ Part Numbering 型号名称

TCRA	8P4R(0603)	L4R70	F	T
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
TCRA	8P4R(0603)	L1801:1.8KΩ L4R70:4.7Ω	B=±0.1% C=±0.25% D=±0.5% F=±1%	T: Taping Reel 卷装 B: Bulk 散装

■ Standard Electrical Specifications 标准规格表

Item 项目 / Type 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 ±1%及以下	TCR 温度系数 (PPM/℃)
0603	1/16W	−55~155℃	50V	100V	24.9Ω~100KΩ	±25 ±50
					24.9Ω~2KΩ	±10 ±15

■ 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
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	△R±0.1%	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 100V(DC) for 1 minute 施加电压100V(DC) 1分钟
Endurance 负载寿命	1000Hr:△R±0.15% 8000Hr:△R±0.3% 1000小时:△R±0.15% 8000小时:△R±0.3%	70±2℃,RCWV 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	△R±0.25%	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	1000Hr:△R±0.25% 8000Hr:△R±0.5% 1000小时:△R±0.25% 8000小时:△R±0.5%	At +125℃ 在温度+125℃下
Bending Strength 弯折强度测试	△R±0.2%	Bending amplitude 3 mm 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℃ for 3 seconds 245±5℃温度下持续3秒

Operating Voltage=√(P*R) or Max.Operating Voltage listed above,whichever is lower.
Overload Voltage=2.5*√(P*R) or Max.Overload Voltage listed above,whichever is lower.
RCWV(Rated Continuous Working Voltage)=√(P*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)=√(P*R) 或者较小的最大操作电压.
操作电压=√(P*R) , 过负载电压=2.5*√(P*R) ,操作电流=√(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

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