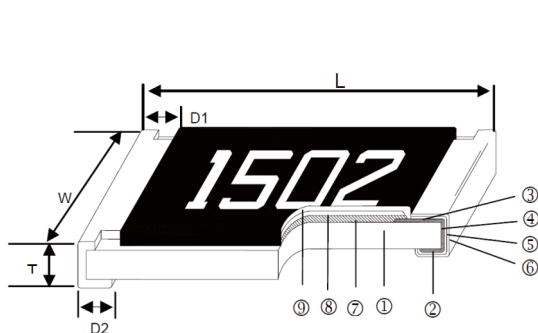


高压贴片电阻(HVR)High Voltage Chip Resistor

■ Resume 摘要

Tolerance from $\pm 1\% \sim \pm 5\%$ / High reliability / Improved working voltage ratings /
Standard package sizes of 0402~2512
容量从 $\pm 1\% \sim \pm 5\%$ / 高可靠性/良好的抗高压性能/0402~2512的标准封装方式。

■ 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(RuO_2/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 ± 0.15	1.55 ± 0.15	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.20
1210	3.10 ± 0.10	2.60 ± 0.15	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.20
2010	5.00 ± 0.10	2.50 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20
2512	6.35 ± 0.10	3.10 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20

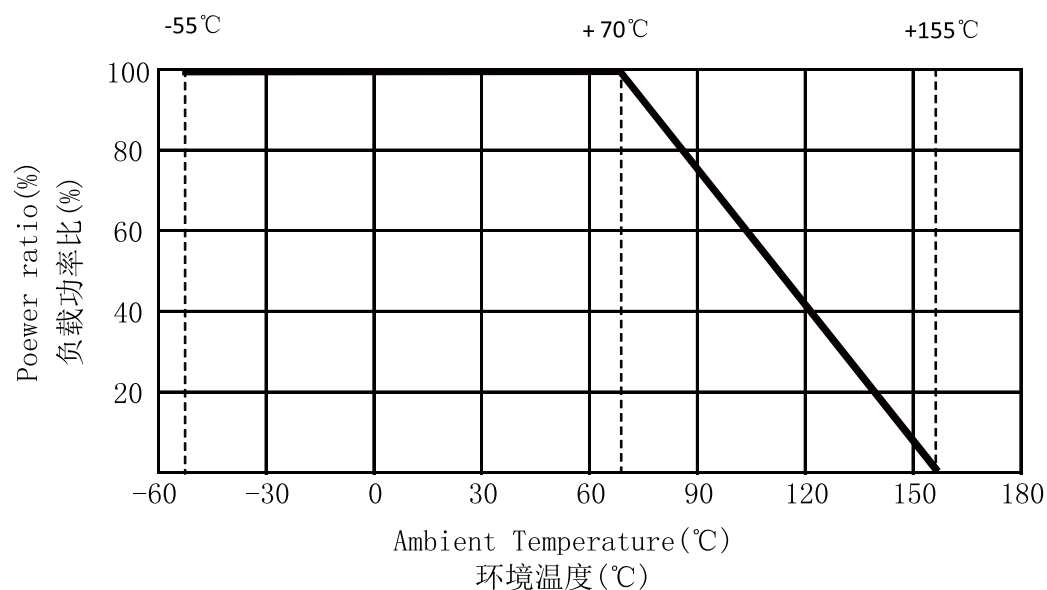
■ Part Numbering 型号名称

HVR	5025 (2010)	L1003	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
HVR	1005 (0402) 1608 (0603) 2012 (0805) 3216 (1206) 3225 (1210) 5025 (2010) 6432 (2512)	$\pm 5\%$ L182:1.8K Ω L180:18 Ω $\pm 1\%$ L1003:100K Ω L10R0:10 Ω	F= $\pm 1\%$ J= $\pm 5\%$	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		TCR 温度系数 (PPM/°C)
					±1%	±5%	
0402	1/16W	-55~155°C	100V	200V	39KΩ~1MΩ		±100
					1.02M~10MΩ	1.1M~20MΩ	±200
					—	22M~100MΩ	±400
0603	1/10W	-55~155°C	200V	400V	56KΩ~1MΩ		±100
					1.02M~10MΩ	1.1M~20MΩ	±200
					—	22M~100MΩ	±400
0805	1/8W	-55~155°C	400V	800V	100KΩ~1MΩ		±100
					1.02M~10MΩ	1.1M~20MΩ	±200
					—	22M~100MΩ	±400
1206	1/4W	-55~155°C	500V	1000V	100KΩ~1MΩ		±100
					1.02M~10MΩ	1.1M~20MΩ	±200
					—	22M~100MΩ	±400
1210	1/2W	-55~155°C	800V	1500V	50KΩ~10MΩ		±200
2010	1/2W	-55~155°C	2000V	3000V	51KΩ~1MΩ		±100
					1.02M~20MΩ	1.1M~20MΩ	±200
					—	22M~100MΩ	±400
2512	1W	-55~155°C	3000V	4000V	30KΩ~1MΩ		±100
					1.02M~20MΩ	1.1M~20MΩ	±200
					—	22M~100MΩ	±400

■ Standard Electrical Specifications 标准规格表



■ 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 refence 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	± (2.0%+0.10 Ω)	± (3.0%+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	± (2.0%+0.10 Ω)	± (3.0%+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)		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