

无感片式固定电阻器

Low Resistance Chip Resistor

■ 特点 Features

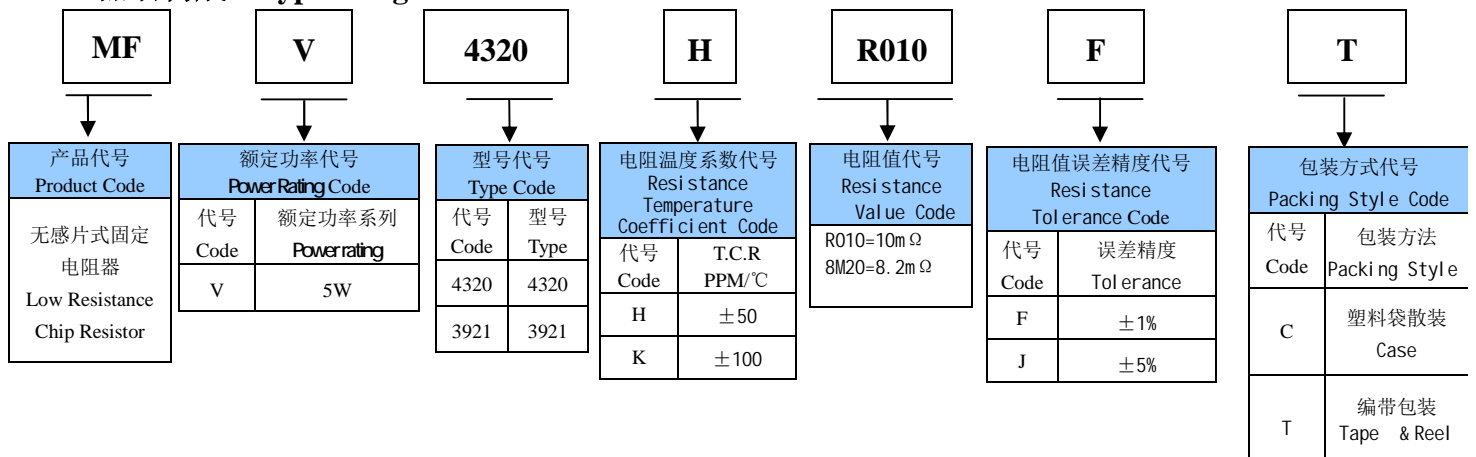
- 高功率可达 5 W
 - 可耐受更高的脉冲冲击
 - 适应再流焊与波峰焊
 - 适于作电流探测用电阻器
如电源电路、发动机用电路等
 - 机械强度高、高频特性优越
 - 符合 ROHS 指令要求
- High power up to 5W
 - High pulse power rating.
 - Suit for re-flow and wave flow solder.
 - Current detecting resistors for power supply, motor circuits, etc.
 - Superior mechanical and frequency characteristics
 - RoHS compliant



■ 应用领域 Applications

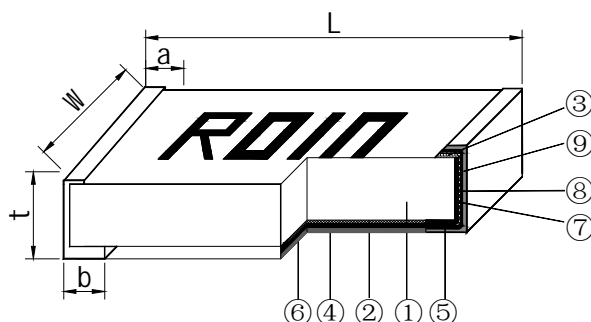
开关电源、音响设备的过电流保护、电压调节器、电源转换器、充电器、汽车引擎控制器、便携式设备等
 Switching Power Supply、Over Current Protection in Audio Application、Voltage Regulation Module(VRM)、DC-DC Converter、Charger、Automotive Engine Control、Portable Devices etc.

■ 品名构成 Type Designation



■ 结构及规格尺寸 Construction and dimension

◆ 结构图 Construction Figure

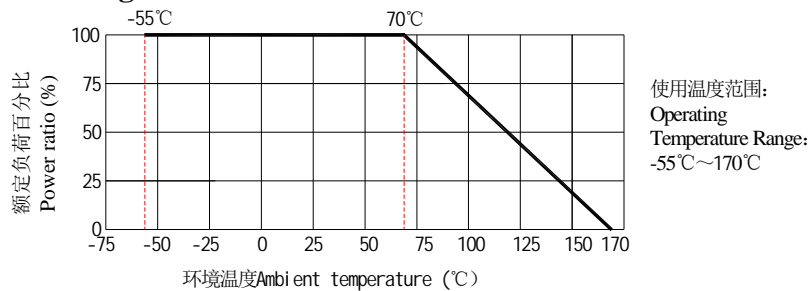


- ① 陶瓷基板 Ceramic Substrate
- ② 合金层 Alloy Plate
- ③ 面电极 Top Electrode
- ④ 一次保护 Primary Overcoat
- ⑤ 铜层 Cu Plating
- ⑥ 二次保护 Secondary Overcoat
- ⑦ 端电极 Edge Electrode
- ⑧ 中间电极 Barrier Layer
- ⑨ 外部电极 External Electrode

◆ 尺寸 Dimensions:

型号 Type	尺寸 Dimensions (mm)				
	L	W	t	a	b
MF4320	11.00±0.30	5.00±0.20	0.70±0.20	0.30±0.20	3.00±0.30
MF3921	10.50±0.30	5.20±0.20	0.70±0.20	0.30±0.20	3.00±0.30

■ 负荷下降曲线 Derating Curve



当电阻使用的环境温度超过 70°C 时，其额定负荷（额定功率）按上述曲线下降。

For resistors operated in ambient over 70°C, rated load (Rated power) shall be derated in accordance with the above figure.

■ 额定值 Ratings

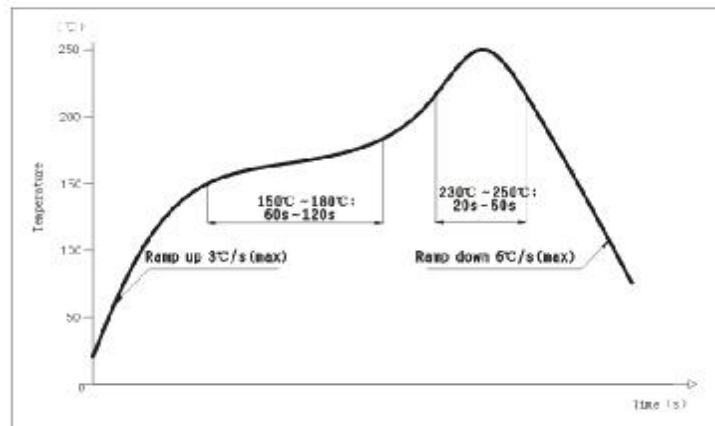
项目	数值
电阻值 Resistance values	5~30mΩ
精度 Tolerance	±1%、±5%
温度系数 TCR	<10 mΩ : ±50ppm/°C ≥10 mΩ : ±100ppm/°C
负载能力 Load Capacity	5W
寄生电感 Parasitism inductance	<3nH

■ 特性 Characteristics

项目 Item	标准 Specifications	测试方法 (IEC60115 标准) Test Methods (IEC60115)
可焊性 Solderability	可焊面积 ≥95% 95% Cover Min	IEC 60115-1 4.17 IEC: 245°C ±5°C 3s ±0.3s
基板弯曲试验 Substrate Bending Test	无可见损伤 No mechanical damage ΔR ≤ ±1%R	IEC 60115-1 4.33 弯曲距离 (Bending Distance): 2mm 保持时间 (duration): 60s ±5s
电阻温度系数 T.C.R	在规定值内 Within specified T.C.R	IEC 60115-1 4.8 +20°C / -55°C / +20°C / +125°C / +20°C
温度快速变化 Rapid Change of Temperature	无可见损伤 No mechanical damage ΔR ≤ ±1%R	IEC 60115-1 4.19 -55°C (30 分钟) ~ 常温 (5 分钟) ~ 125°C (30 分钟) 100 个循环。 -55 °C (30min) ~ normal temperature (5min) ~ 125 °C (30min) 100cycles

项目 Item	标准 Specifications	测试方法 (IEC60115 标准) Test Methods (IEC60115)
短时间过负载 Short Time Overload	无可见损伤 No mechanical damage $\Delta R \leq \pm 1\%R$	IEC 60115-1 4.13 4 倍额定功率, 保持 5 秒。 4×Rated Power, for 5 s
耐焊接热 Resistance to Soldering Heat	无可见损伤 No mechanical damage $\Delta R \leq \pm 1\%R$	IEC 60115-1 4.18 270°C ± 5°C 10s ± 1s
稳态湿热 Damp Heat, Steady State	无可见损伤 No mechanical damage $\Delta R \leq \pm 1\%R$	IEC 60115-1 4.24 40°C ± 2°C 90-95%RH 1000h
70°C 耐久性 Endurance at 70°C	无可见损伤 No mechanical damage $\Delta R \leq \pm 1\%R$	IEC 60115-1 4.25.1 70°C ± 2°C, 1000 小时, 额定电压或最大工作电压 (取最少者) 通 1.5 小时/断 0.5 小时。 70°C ± 2°C, 1000h, Rated voltage or the max working voltage whichever is lower 1.5h on/0.5h off
上限类别温度耐久性 Endurance at Upper Category Temperature	无可见损伤 No mechanical damage $\Delta R \leq \pm 1\%R$	IEC 60115-1 4.25.3 170°C ± 2°C, 1000 小时 170°C ± 2°C 1000h

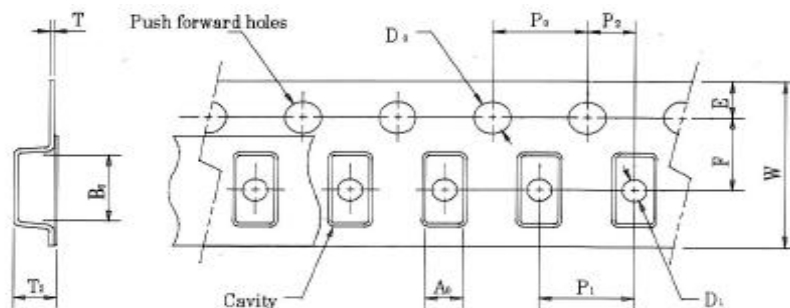
■ 推荐的回流焊曲线 Recommended re-flow profile



推荐的焊膏类型 Recommended solder alloy: 96.5Sn-3.0Ag-0.5Cu

■ 包装 Packaging

● 编带包装 Tape and Reel



Type	A0	B0	W	E	F	P ₀	P ₁	P ₂	D ₀	T	T ₂	Quantity (EA)
4320	5.8	11.4	24	1.75	11.5	4	12	4	1.5	0.3	1.55	3000
3921												