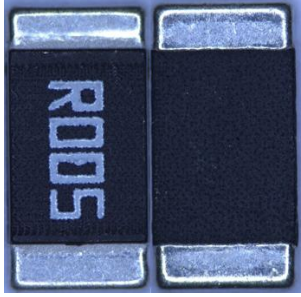
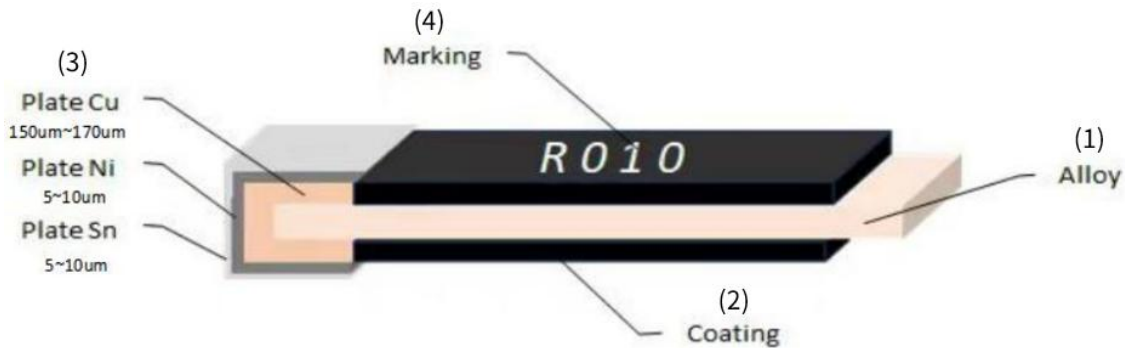


■ 产品系列:	两端子金属板电流感测电阻
■ Product Family:	2-Terminal Metal Strip Current Sense Resistors
■ 产品型号:	PMSH2512-系列
■ Part Number Series:	PMSH2512-Series



 PMSH2512--Series	结构 / Construction: - 金属合金电阻体 / Metal alloy resistor - 环氧树脂防焊 / Epoxy-resin overcoat - 电极镀镍锡 / Electrode nickel tin plating - 小电极 / Small electrode - 无卤素、铍 / Halogen Free and Beryllium Free - 符合 RoHS 标准，无豁免 / RoHS compliant without exemptions	特性 / Features: 2512英制尺寸 / 2512 English case size - 部分功率高达 3W / Partial power of up to 3W - 阻值范围: $0.5\text{m}\Omega < R \leq 500\text{m}\Omega$ / Resistance Range: $0.5\text{m}\Omega < R \leq 500\text{m}\Omega$ - 部分 TCR 低至 $\pm 50\text{ppm}/^\circ\text{C}$ / Partial TCR down to $\pm 50\text{ppm}/^\circ\text{C}$ - 电感低至 5nH / Inductance down to 5nH
说明 / Description: These low resistance, metal strip, current sensing chip resistors exhibit excellent performance with a very low height profile. They are useful in many current sensing applications. 这些低阻值、金属带式电流检测贴片电阻具有极低的厚度外形，性能卓越。它们适用于许多电流检测应用。		

产品结构 / Product Construction



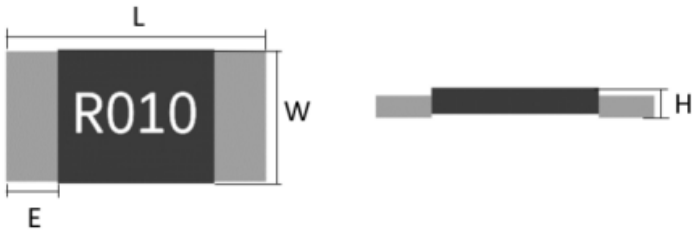
(示意图仅供参考 / Diagram for reference)

编号 / Number	说明 / Description
1	电阻本体: 锰铜、卡玛 / Resistive Element: MnCu, KaMa
2	防焊层: 防火剂环氧树脂, 符合UL94 V-0要求(黑色) / Protective coating: Flame-retardant epoxy, meets UL94 V-0 requirements (black)
3	电极: 铜、锡、镍 / Terminal Electrode: Cu, Sn, Ni
4	文印: 环氧树脂 / Marking: Epoxy resin

零件编号 / Part Numbering: Ex: PMSH2512M3W00M50F

系列名称 / Series Name	英制尺寸 / English Size	材料 / Material	功率 / Power	电阻值 / Resistance Value	电阻公差 / Resistance Tolerance
PMSH	2512	M	3W0=3.00W	0M50=0.5mΩ	F=±1.0%

产品尺寸 / Product Dimensions



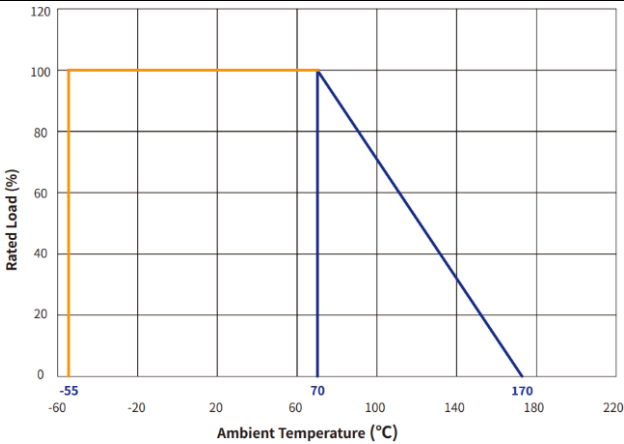
Unit: inches (mm)
(示意图仅供参考 / Diagram for reference)

尺寸(公制) / Dimension (Metric)	功率 / Power Rating	阻值范围 / Resistance Range	材质 / Material	W	L	H	E
PMSH2512(6432)	2W/3W	0.5mΩ<R≤220mΩ	MnCu	0.126±0.008 (3.20±0.20)	0.252±0.008 (6.40±0.20)	0.031±0.004 (0.80±0.10)	0.039±0.008 (1.00±0.20)
	2W	220mΩ<R≤400mΩ	MnCu				
		400mΩ<R≤500mΩ	KaMa				

电气特性 / Electrical Specifications

类型 / Type	PMSH2512		
公制尺寸 / Metric Size(mm)	6432		
额定功率) / Power Rating (W)	2.0, 3.0		2.0
电阻范围 / Resistance Range(mΩ)	0.5<R≤1.5	2≤R≤220	220<R≤500
电阻公差 / Resistance Tolerance% (code)	±1.0(F), ±2.0(G), ±5.0(J)		
TCR (ppm/°C)	±350	±50	
电感 / Inductance (nH)	<5		
工作温度范围 / Operating Temp. Range (°C)	-55~+170 (Derating from 70°C)		

功率降额曲线 / Power Derating Curve



可靠性 / Reliability Specifications

电气特性 / Electrical Characteristics

测试项目 / Test Item	测试方法 / Test Method	判定标准 / Specification
阻值 / Resistance Data IEC60115-1 6.1	25°C下的阻值。 Resistance data at 25°C.	必须符合规格书要求 Must meet datasheet requirements
温度系数 / TCR Data IEC60115-1 6.2	测试温度25°C、125°C， $TCR = (R_b - R_a) / R_a \times 1 / (T_b - T_a) \times 10^6$ 。 Tested at 25°C and 125°C， $TCR = (R_b - R_a) / R_a \times 1 / (T_b - T_a) \times 10^6$ 。	必须符合规格书要求 Must meet datasheet requirements
瞬时过载测试 / Short Time Overload IEC60115-1 8.1	通5.0倍功率，测试时间5s。 Applied power: 5.0X rated power. Test duration: 5 seconds.	$\Delta R \leq \pm(1.0\% + 0.5m\Omega)$

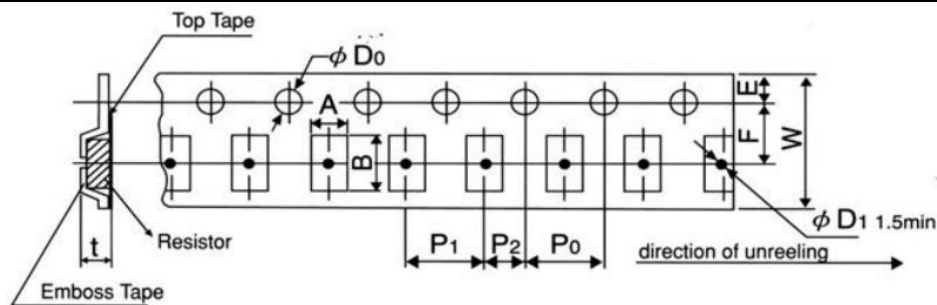
机械特性 / Mechanical Characteristics

测试项目 / Test Item	测试方法 / Test Method	判定标准 / Specification
弯曲测试 / Substrate Bending IEC60115-1 9.8	两支撑点间距90mm，弯曲2mm，测试基板厚度1.6mm。 90mm span between fulcrums, 2mm bend, Glass-Epoxy test board thickness: 1.6mm.	$\Delta R \leq \pm(1.0\% + 0.5m\Omega)$

环境特性 / Environmental Characteristics

测试项目 / Test Item	测试方法 / Test Method	判定标准 / Specification
寿命测试 / Load Life IEC60115-1 7.1	70°C环境下, 通以额定功率, 通电90分钟, 断电30分钟, 测试1000小时。 Test Temperature: 70°C, Applied power: rated power, Test period: 1,000 hours with power cycling as follows: 90 min. power ON/30 min. power OFF.	$\Delta R \leq \pm(2.0\%+0.5m\Omega)$
长期耐湿 / Moisture with Load	85°C $\pm$ 2°C, 85% $\pm$ 3%RH, 持续 1000 小时, 额定功率, 通1.5小时/断0.5小时 85°C $\pm$ 2°C, 85% $\pm$ 3%RH, 1000 hours, rated power, 1.5 hours on / 0.5 hours off	$\Delta R \leq \pm(1.0\%+0.5m\Omega)$
冷热冲击 / Thermal Shock IEC60115-1 10.1	-55°C (30分钟), 转换时间5分钟, +155°C (30分钟), 转换时间5分钟, 重复1000个循环。 -55°C 30min. $\rightarrow$ R.T. 5min. $\rightarrow$ +155°C 30min. $\rightarrow$ R.T. 5min. Repeat 1000 cycles as follows.	$\Delta R \leq \pm(1.0\%+0.5m\Omega)$
高温测试 / High Temp. Exposure IEC60115-1 7.3	测试温度+170°C $\pm$ 2°C, 测试周期 1000h。 Test Temperature: +170°C $\pm$ 2°C, Test period: 1,000 hours.	$\Delta R \leq \pm(1.0\%+0.5m\Omega)$
低温测试 / Low Temp. Storage IEC60115-1 4.25	测试温度-55°C $\pm$ 2°C, 测试周期 1000h。 Test Temperature: -55°C $\pm$ 2°C, Test period: 1,000 hours.	$\Delta R \leq \pm(1.0\%+0.5m\Omega)$
抗焊接热 / Resistance To Solder Heat IEC60115-1 11.2	过三次回流焊。 Parts are subjected to 3 reflow cycles. T = 260 $\pm$ 5°C, t = 20 $\pm$ 1sec.	$\Delta R \leq \pm(1.0\%+0.5m\Omega)$
可焊性 / Solderability IEC60115-1 11.1	浸入245 $\pm$ 5°C的锡炉, 3 $\pm$ 0.5秒。 Dipped into molten solder for 3 $\pm$ 0.5 seconds at 245 $\pm$ 5°C.	锡覆盖率 $\geq$ 95% New solder coverage of 95% minimum

塑料带尺寸 / Plastic Tape Dimensions

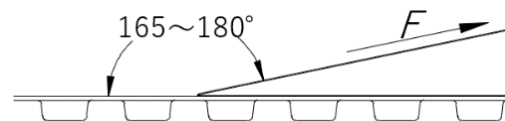


单位 / Unit: mm
(示意图仅供参考 / Diagram for reference)

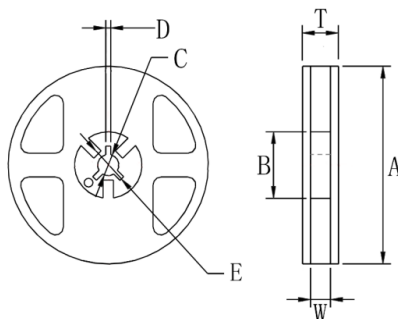
Size	W	P0	P1	P2	A	B	D0	F	E	t
2512	12.00 $\pm$ 0.20	4.00 $\pm$ 0.05	4.00 $\pm$ 0.10	2.00 $\pm$ 0.05	3.50 $\pm$ 0.15	6.80 $\pm$ 0.10	1.50 ~1.60	5.50 $\pm$ 0.05	1.75 $\pm$ 0.10	1.00 $\pm$ 0.10

热封上带剥离强度要求 / Peeling Strength of Seal Tape

F = 剥离强度: 0.1 – 1.0N (10 - 100gf)
 F = Peeling Strength: 0.1 – 1.0N (10 - 100gf)



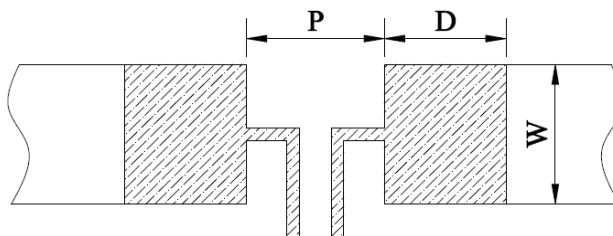
卷盘尺寸 / Reel Dimensions



单位 / Unit: mm
 (示意图仅供参考 / Diagram for reference)

Size / 尺寸(mm)	2512
数量 / Quantity	4,000 颗每卷 / 4,000 pcs per reel
A	178±2.0
B	60.0±1.0
C	13.0±1.0
D	2.0±0.5
E	>22
W	13.3±0.5
T	15.4±0.5

推荐焊盘结构 / Recommended Land Pattern

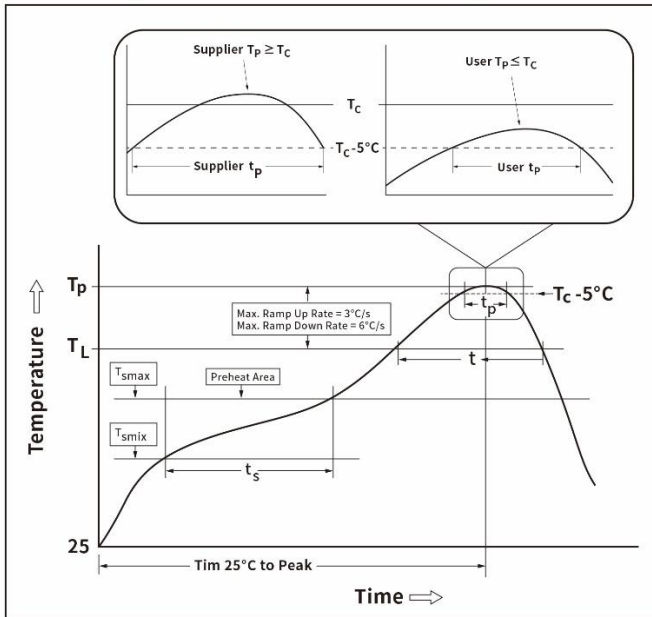


单位 / Unit: mm
 (示意图仅供参考 / Diagram for reference)

Size	Resistance Range	P	W	D
2512(PMSH)	0.5mΩ < R ≤ 500mΩ	4.1	4.0	2.1

焊接曲线 / Soldering Profile

Soldering Parameters-Reflow Soldering



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T_{Smax} to T_p)	3 °C / second max
Preheat Temperature Minimum (T_{Smin})	150 °C
Temperature Maximum (T_{Smax})	200 °C
Time (T_{Smin} to T_{Smax})	60-120 seconds
Time maintained above Temperature Minimum (T_L) Time (t_L)	217 °C 60-150 seconds
Peak Temperature (T_p)	260 +0 °C
Time within 5 °C of Actual Peak Temperature (t_p)	30 seconds
Ramp-Down Rate	6 °C / second Maximum
Time 25 °C to Peak Temperature	8 minutes Maximum

允许烙铁焊接条件(热风设备) / Rework temperature (hot air equipment) : 350°C, 4~6seconds

焊接热源方式可用电烙铁, 热风. / Electric soldering iron, hot air oven

如果焊锡温度超过允许最高温度, 则产品本身会有功能损坏的疑虑. / If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

储存条件 / Storage Conditions

环境条件 / Environment Conditions:

产品应在以下环境条件下储存 / Products should be stored under the following environmental conditions.

- 温度: +5至+35°C / Temperature: +5 to +35°C
- 湿度: 45%~75%相对湿度 / Humidity: 45%~75% relative humidity
- 在密闭条件下可存放1年 / Under airtight can store 1 year.
- 不要将产品存放在可能受到颗粒污染或有害气体(如硫酸或氯化氢)污染的环境中, 因为这可能会导致电极氧化, 从而导致可焊性差. /

Do not keep products in environments where they may be subject to particulate contamination or harmful gases such as sulfuric acid or hydrogen chloride as it may cause oxidization on electrodes, resulting in poor solderability.

- 产品应存放在不暴露于高温、振动或阳光直射的空间内. / Products should be stored in a space that does not expose it to high temperatures, vibration, or direct sunlight.
- 产品在使用前应存放在原始的气密包装中. / Products should be stored in the original airtight packaging until use.