

|      |            |
|------|------------|
| 系列号  | HoYLR      |
| 修订日期 | 2022-12-12 |
| 版本号  | Ho-A0      |

# 规格书 Specification

制造商:深圳市毫欧电子有限公司

HoYLR2512

适用:本规格书适用于深圳市毫欧电子有限公司封体合金电阻 HoYLR2512系列产品选型。

## ■ 产品型号Product number

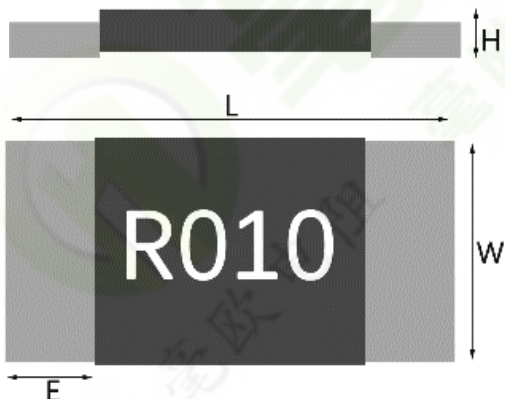
例: HoYLR2512-2mR-1%

| Ho   | YLR  | 2512 | 2mR         | 1%                      |
|------|------|------|-------------|-------------------------|
| ↓    | ↓    | ↓    | ↓           | ↓                       |
| 制造商  | 产品类别 | 封装   | 阻值          | 精度                      |
| 毫欧电子 | 封体合金 | 2512 | 0.5mR~500mR | F=±1%<br>G=±2%<br>J=±5% |

注:

功率默认为3W,料号无需显示功率

## ■ 产品结构及尺寸 Product structure and size (Unit:mm)



$R \leq 4mR, H = 0.8 \pm 0.2mm$ ,  $R > 4mR, H = 0.65 \pm 0.2mm$

| 封装   | 阻值           | L             | W             | E             | H              |
|------|--------------|---------------|---------------|---------------|----------------|
| 2512 | $R \leq 4mR$ | $6.4 \pm 0.2$ | $3.2 \pm 0.2$ | $1.0 \pm 0.2$ | $0.8 \pm 0.2$  |
|      | $R > 4mR$    |               |               |               | $0.65 \pm 0.2$ |



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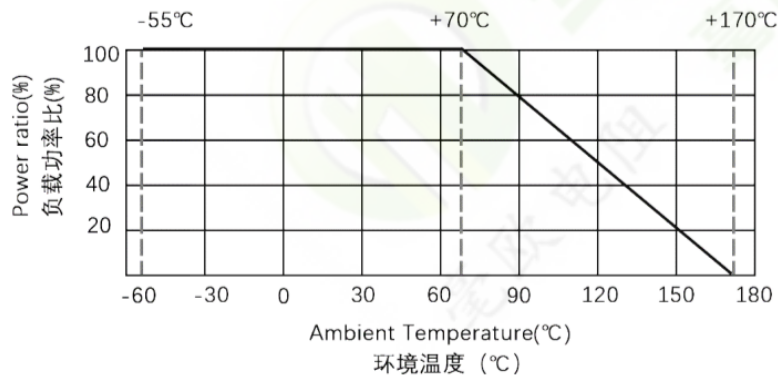
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| <br>毫欧电阻 毫欧制造 | HoYLR2512封体合金系列规格书 | 系列号  | HoYLR      |
|                                                                                                |                    | 修订日期 | 2022-12-12 |
|                                                                                                |                    | 版本号  | Ho-A0      |

## ■ 电气规格 Electrical Specifications :

| 类型<br>type | 功率<br>power | 阻值范围<br>Resistance<br>range                     | 温度系数<br>TCR                        | 工作温度范围<br>Operating<br>temperature<br>range | 阻值精度<br>Resistance<br>tolerance | 绝缘阻抗<br>Insulation<br>resistance | 最大工作电压<br>Maximum<br>operating<br>voltage (V) |
|------------|-------------|-------------------------------------------------|------------------------------------|---------------------------------------------|---------------------------------|----------------------------------|-----------------------------------------------|
| 2512       | 3W          | $0.5\text{m}\Omega \leq R < 1\text{m}\Omega$    | $\pm 350\text{ppm}/^\circ\text{C}$ | $-55^\circ\text{C} \sim +170^\circ\text{C}$ | F: 1%<br>G: 2%<br>J: 5%         | Over 100M<br>$\Omega$            | $(P \cdot R)^{1/2}$                           |
|            |             | $1\text{m}\Omega \leq R < 2\text{m}\Omega$      | $\pm 100\text{ppm}/^\circ\text{C}$ |                                             |                                 |                                  |                                               |
|            |             | $2\text{m}\Omega \leq R \leq 500\text{m}\Omega$ | $\pm 50\text{ppm}/^\circ\text{C}$  |                                             |                                 |                                  |                                               |

## ■ 功率曲线 Power curve

操作温度范围 - 50 ~ +170 °C 电阻温度达到 70°C 时降功率 示意图



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## HoYLR2512封体合金系列规格书

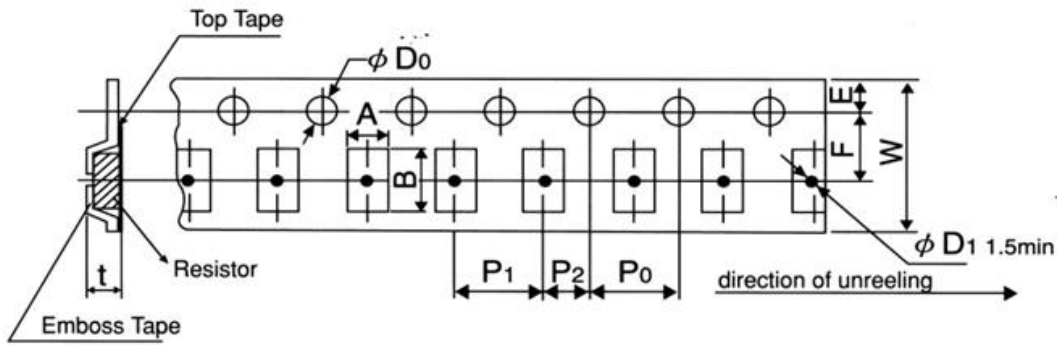
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### ■ 可靠性测试 Reliability Tests

| 项目<br>Project                         | 检测方法Test Method<br>(依据标准Refer to IEC 60115,60068; JIS-C 5201-1)                                                                                                                                                                          | 规格和要求<br>Specifications and Requirements                                                 |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| 温度系数<br>Temperature coefficient (TCR) | 25°C (T1、R1)、125°C(T2、R2)条件下分别测量阻值, 计算<br>$TCR=(R2-R1)/(R1(T2-T1)) * 10^6$<br>Resistance values were measured at 25°C(T1, R1) and 125°C(T2, R2), and TCR was calculated as $(R2-R1)/(R1(T2-T1)) * 10^6$                                  | 参考物理特性TCR规格<br>Refer to TCR specifications for physical features                         |
| 短时间过载<br>ShortTimeOverload            | 5倍额定功率, 保持5s<br>5 times rated power, maintain 5s                                                                                                                                                                                         | $\Delta R \leq \pm (1\%+0.05m\Omega)$                                                    |
| 绝缘电阻<br>Insulation resistance         | 在电极与基片间施加100V±15V直流电压, 保持60s, 然后测绝缘电阻<br>Apply 100V±15V DC voltage between electrode and substrate, hold for 60 seconds, then measure insulation resistance                                                                              | > 100 mΩ                                                                                 |
| 耐电压<br>Withstand voltage              | 在电极与基片之间以大约100V/S的速率施加有效值为最大过负荷电压的交流电, 保持60±5s<br>An alternating current with an effective value of the maximum overload voltage is applied between the electrode and the substrate at a rate of approximately 100V/S, maintaining 60±5s | 无击穿或飞弧<br>No breakdown or arc                                                            |
| 焊锡性<br>solderability                  | 245°C±5°C 锡槽, 保持2s±0.5s<br>245°C±5°C tin tank, hold 2s±0.5s                                                                                                                                                                              | 电极上锡面积>95%<br>At least 95% of surface area of electrode shall be covered with new solder |
| 耐热性<br>Resistance to Soldering Heat   | 270°C±5°C 锡槽, 保持10s±1s<br>270°C±5°C tin tank, hold for 10s±1s                                                                                                                                                                            | $\Delta R \leq \pm (0.5\%+0.05m\Omega)$ ,<br>无可见损伤<br>no visible damage                  |
| 弯曲测试<br>Bending test                  | 弯曲距离2mm, 保持时间60s±5s<br>Bending distance 2mm, hold time 60s±5s                                                                                                                                                                            | $\Delta R \leq \pm (0.5\%+0.05m\Omega)$<br>无机械损伤<br>no mechanical damage                 |
| 耐溶测试<br>Solvent resistance            | 异丙醇(IPA), 23°C±5°C, 浸10小时<br>Isopropanol (IPA) at 23°C±5°C for 10 hours                                                                                                                                                                  | 外观无明显损伤<br>No obvious damage to appearance                                               |
| 长期高温<br>High Temperature Exposure     | 高温170°C放置1000H<br>170°C±2°C, 1000H, stand for 1H, test the resistance value                                                                                                                                                              | $\Delta R \leq \pm (1.0\%+0.05m\Omega)$                                                  |
| 长期低温<br>Low Temperature Exposure      | 低温-55°C放置1000H<br>-55°C±2°C, 1000H, stand for 1H, test the resistance value                                                                                                                                                              | $\Delta R \leq \pm (0.5\%+0.05m\Omega)$                                                  |
| 温度循环<br>Rapid change of Temperature   | -55°C 30分钟~常温 5分钟~155°C 30分钟, 1000个循环<br>-55°C 30 minutes ~ normal temperature 5 minutes ~155°C 30 minutes, 1000 cycles                                                                                                                  | $\Delta R \leq \pm (0.5\%+0.05m\Omega)$                                                  |
| 长期耐久<br>Load Life                     | 70°C±2°C, 1000小时, 额定功率, 通1.5小时/断0.5小时<br>70°C±2°C, 1000 hours, rated power, 1.5 hours on / 0.5 hours off                                                                                                                                 | $\Delta R \leq \pm (1.0\%+0.05m\Omega)$                                                  |
| 长期耐湿<br>Moisture with Load            | 85°C±2°C, 85%±3%RH, 持续 1000 小时, 额定功率, 通1.5小时/断0.5小时<br>85°C±2°C, 85%±3%RH, 1000 hours, rated power, 1.5 hours on / 0.5 hours off                                                                                                         | $\Delta R \leq \pm (1.0\%+0.05m\Omega)$                                                  |

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■ 载带尺寸TAPE PACKAGING DIMENSIONS:



| A        | B       | W        | F        | E        | P <sub>1</sub> | P <sub>2</sub> | P <sub>0</sub> | D <sub>0</sub> | t       |
|----------|---------|----------|----------|----------|----------------|----------------|----------------|----------------|---------|
| 3.5±0.15 | 6.8±0.1 | 12.0±0.2 | 5.5±0.05 | 1.75±0.1 | 4.0±0.1        | 2.0±0.05       | 4.0±0.05       | 1.5~1.6        | 1.0±0.1 |

■ 卷盘尺寸Reel Dimensions:



| 型号<br>Type | A       | B      | C      | D       | E   | T        | W        |
|------------|---------|--------|--------|---------|-----|----------|----------|
| 2512       | 178±2.0 | 60±1.0 | 13±1.0 | 2.0±0.5 | >22 | 15.4±0.5 | 13.3±0.5 |

■ 包装方式 Packing

编带盘装：4000PCS/盘

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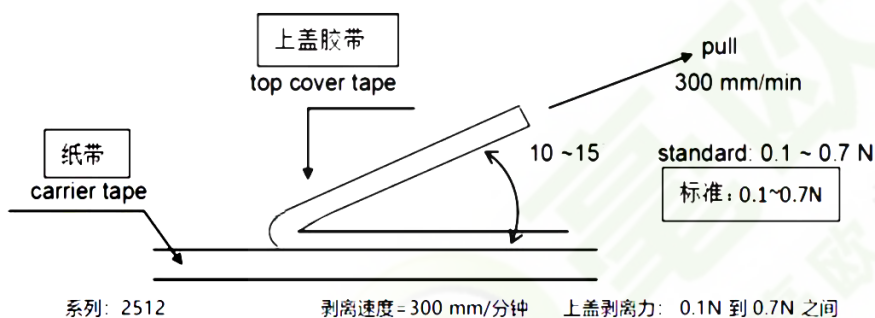
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■ 焊盘尺寸 : Pad size

| 焊盘<br>Pattern | 尺寸Size |
|---------------|--------|
| A             | 4.0    |
| B             | 2.1    |
| L             | 4.1    |



■ 载带拉力 : Pad size



■ 注意事项 : matters needing attention

- 1, 储存时应注意温度和湿度 (温度 5 ~ 35°C, 相对湿度 45 ~ 75% RH). 湿度尽可能保持在范围内;  
Chip resistor shall be stored in a room where temperature and humidity must be controlled.  
(temperature 5 to 35°C, humidity 45 to 75% RH) However, a humidity keep it low, as it is possible.
- 2, 不能阳光长时间直接照射产品; Chip resistor shall be stored as direct sunshine doesn't hit on it.
- 3, 不能存储在潮湿, 灰尘及导致焊接性能变差的有害气体环境中(氯化氢气体、亚硫酸气体、硫化氢气体); Chip resistor shall be stored with no moisture, dust, a material that will make solder ability inferior, and a harmful gas (Hydrogen chloride, sulfurous acid gas, and Hydrogen sulfide)
- 4, 保存期限: 1 年; Storage life: 1 year;

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