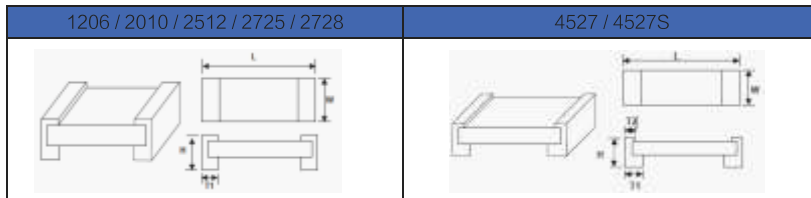


**合金低阻贴片电阻 (MRE) Metal Alloy Low-Resistance Resistors**

**■ Resume 摘要**

- |                       |                                      |
|-----------------------|--------------------------------------|
| 1、高精度 (0.5%、1%、5%)    | Tight tolerance (0.5%、1%、5%)         |
| 2、高温特性 (最高温度170℃)     | High temperature (Max.170℃)          |
| 3、低温漂 (最低可15PPM/℃)    | Low TCR (Min.15PPM/℃)                |
| 4、大阻值范围 (0.2mΩ~330mΩ) | More resistance values (0.2mΩ~330mΩ) |
| 5、高功率                 | High power                           |

**■ Dimensions 尺寸**



| Size 规格 | 功率 (W)      | 阻值范围 (mΩ)            | 尺寸 Dimensions (mm) |             |                            |                |                |              |             |             |             |             |
|---------|-------------|----------------------|--------------------|-------------|----------------------------|----------------|----------------|--------------|-------------|-------------|-------------|-------------|
|         |             |                      | L                  | W           | H                          | T <sub>1</sub> | T <sub>2</sub> |              |             |             |             |             |
| 0805    | 0.5         | 3-50                 | 2.032±0.20         | 1.270±0.20  | 0.30±0.05                  | 0.35±0.20      |                |              |             |             |             |             |
| 1206    | 0.5/1.0     | 0.3                  | 3.000±0.254        | 1.600±0.254 | 1.000±0.254                | 0.550±0.254    |                |              |             |             |             |             |
|         |             | 0.5~0.6              |                    |             | 0.725±0.254                |                |                |              |             |             |             |             |
|         |             | 1.0                  |                    |             | 0.645±0.254                | 0.508±0.254    |                |              |             |             |             |             |
|         |             | 2.0~4.0              |                    |             | 0.545±0.254                | 0.600±0.254    |                |              |             |             |             |             |
|         |             | 5.0                  |                    |             | 0.508±0.254                | 0.508±0.254    |                |              |             |             |             |             |
|         | 1.5         | 0.3                  |                    |             | 1.000±0.254                | 0.550±0.254    |                |              |             |             |             |             |
|         |             | 0.5~0.6              |                    |             | 0.725±0.254                | 0.725±0.254    |                |              |             |             |             |             |
|         |             | 1.0                  |                    |             | 0.645±0.254                | 0.508±0.254    |                |              |             |             |             |             |
|         |             | 0.5~0.9              |                    |             | 1.440±0.254                | 1.440±0.254    |                |              |             |             |             |             |
|         |             | 1.0~3.0              |                    |             | 1.295±0.254                | 1.295±0.254    |                |              |             |             |             |             |
| 2010    | 1&1.5&2.0   | 3.1~4.0<br>4.1~100.0 | 5.080±0.254        | 2.540±0.254 | 0.787±0.254<br>0.645±0.254 | 0.787±0.254    |                |              |             |             |             |             |
| 2512    | 1.0&1.5     | 0.3                  | 6.248±0.254        | 3.202±0.254 | 1.000±0.254                | 2.02±0.254     |                |              |             |             |             |             |
|         |             | 0.5~3.0              |                    |             | 0.787±0.254                | 1.880±0.254    |                |              |             |             |             |             |
|         |             | 3.1~4.0              |                    |             | 0.645±0.254                | 1.118±0.254    |                |              |             |             |             |             |
|         |             | 4.1~75.0             |                    |             | 0.645±0.254                | 0.868±0.254    |                |              |             |             |             |             |
|         | 2.0         | 0.3                  |                    |             | 1.000±0.254                | 2.02±0.254     |                |              |             |             |             |             |
|         |             | 0.5~3.0              |                    |             | 0.787±0.254                | 1.880±0.254    |                |              |             |             |             |             |
|         |             | 3.1~4.0              |                    |             | 0.645±0.254                | 1.118±0.254    |                |              |             |             |             |             |
|         |             | 4.1~75.0             |                    |             | 1.000±0.254                | 2.02±0.254     |                |              |             |             |             |             |
|         | 3.0         | 0.3                  |                    |             | 1.880±0.254                | 1.880±0.254    |                |              |             |             |             |             |
|         |             | 0.5                  |                    |             | 1.374±0.254                | 1.374±0.254    |                |              |             |             |             |             |
|         |             | 0.75                 |                    |             | 1.118±0.254                | 1.118±0.254    |                |              |             |             |             |             |
|         |             | 0.6~0.7<br>0.8~2.9   |                    |             | 1.874±0.254                | 1.874±0.254    |                |              |             |             |             |             |
|         |             | 3.0                  |                    |             | 1.676±0.254                | 1.676±0.254    |                |              |             |             |             |             |
|         |             | 3.1~4.0              |                    |             | 0.645±0.254                | 1.118±0.254    |                |              |             |             |             |             |
| 2725    | 4.0&5.0     | 0.2~0.5              | 6.807±0.254        | 6.452±0.254 | 0.991±0.254                | 2.159±0.254    |                |              |             |             |             |             |
|         |             | 0.6                  |                    |             | 1.803±0.254                |                |                |              |             |             |             |             |
|         |             | 1.0                  |                    |             | 1.092±0.254                |                |                |              |             |             |             |             |
|         |             | 1.5                  |                    |             | 0.991±0.254                | 2.159±0.254    |                |              |             |             |             |             |
|         |             | 2.0                  |                    |             | 1.803±0.254                |                |                |              |             |             |             |             |
|         |             | 2.25~2.5             |                    |             | 0.889±0.254                | 1.651±0.254    |                |              |             |             |             |             |
|         |             | 3.0                  |                    |             | 1.295±0.254                |                |                |              |             |             |             |             |
|         |             | 4.0~5.0              |                    |             | 1.143±0.254                |                |                |              |             |             |             |             |
| 2728    | 3.0&3.5&4.0 | 4.0~100.0            | 6.706±0.254        | 7.188±0.254 | 0.991±0.254                | 1.143±0.254    |                |              |             |             |             |             |
|         |             | 0.5                  |                    |             |                            | 3.465±0.254    |                |              |             |             |             |             |
|         |             | 0.6~3.0              |                    |             |                            | 3.215±0.254    |                |              |             |             |             |             |
|         |             | 4.0~5.0              |                    |             |                            | 1.815±0.254    |                |              |             |             |             |             |
|         |             | 5.1~200              |                    |             |                            | 3.465±0.254    |                |              |             |             |             |             |
|         |             | 2.0                  |                    |             |                            | 0.5            |                | 11.430±0.254 | 6.850±0.254 | 1.400±0.254 | 3.215±0.254 | 0.965±0.254 |
|         |             |                      |                    |             |                            | 0.6~3.0        |                |              |             |             | 3.215±0.254 |             |
|         |             |                      |                    |             |                            | 4.0~5.0        |                |              |             |             | 1.815±0.254 |             |
|         |             |                      |                    |             |                            | 5.1~27         |                |              |             |             | 3.465±0.254 |             |
|         |             |                      |                    |             |                            | 0.5            |                |              |             |             | 3.465±0.254 |             |
|         |             | 3.0                  |                    |             |                            | 0.6~3.0        |                |              |             |             | 3.215±0.254 |             |
|         |             |                      |                    |             |                            | 4.0~5.0        |                |              |             |             | 1.815±0.254 |             |
|         |             |                      |                    |             |                            | 5.1~7.5        |                |              |             |             | 1.815±0.254 |             |
|         |             |                      |                    |             |                            | 0.5            |                |              |             |             | 3.215±0.254 |             |
| 0.6~3.0 | 3.215±0.254 |                      |                    |             |                            |                |                |              |             |             |             |             |
| 4.0~5.0 | 4.0~5.0     | 1.500±0.254          | 1.500±0.254        | 1.500±0.254 | 3.215±0.254                |                |                |              |             |             |             |             |
|         | 5.1~200     |                      |                    |             | 1.815±0.254                |                |                |              |             |             |             |             |
|         | 0.5         |                      |                    |             | 3.215±0.254                |                |                |              |             |             |             |             |
|         | 0.6~3.0     |                      |                    |             | 3.215±0.254                |                |                |              |             |             |             |             |

■ **Part Numbering 型号名称**

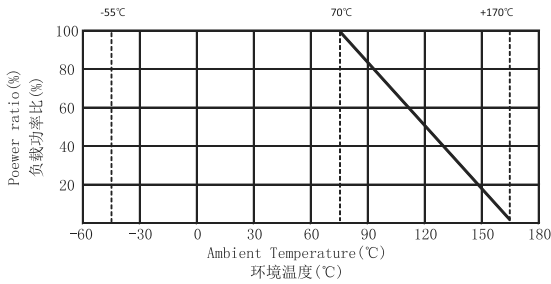
| MRE                  | 2012(0805)  | LR3M5  | F                              | T                                     | S   |
|----------------------|---|--|--------------------------------|---------------------------------------|---|
| Product Type<br>产品类型 | Resistor Size<br>电阻规格   | Resistance<br>阻值   | Resistance Tolerance<br>阻值公差   | Packing Code<br>包装形式                  | High Power<br>升功率   |
| MRE                  | 2012(0805)<br>3216(1206)<br>5025(2010)<br>6432(2512)<br>2725<br>2778<br>4527S<br>4527 | ±5%<br>LR001:0.001Ω<br>LR010:0.01Ω<br>LR3M5:0.0035Ω<br>±1%<br>LR002:0.002Ω<br>LR050:0.05Ω<br>LR3M5:0.0035Ω | D=0.5%<br>F=1%<br>G=2%<br>J=5% | T: Taping Reel<br>卷装<br>B: Bulk<br>散装 | U: 0.5W<br>N:1W<br>A:1.5W<br>S:2W<br>R:3W<br>C:3.5W<br>H:4W<br>Z:5W |

■ **Standard Electrical Specifications 标准规格表**

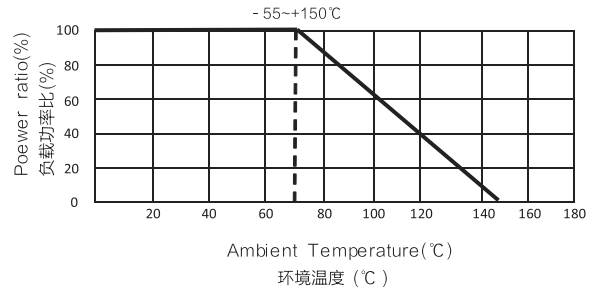
| Item Type<br>项目<br>型号 | Power Rating<br>额定功率 | Operating Temp. Range<br>操作温度范围 | Max. Rating Current<br>最大工作电流 | Resistance Range阻值范围 (mΩ) |                                    | TCR温度系数 (PPM/°C)  |
|-----------------------|----------------------|---------------------------------|-------------------------------|---------------------------|------------------------------------|---|
|                       |                      |                                 |                               | ±0.5%                     | ±1% ±2% ±5%                        |   |
| 0805                  | 0.5W                 | -55°C~150°C                     | 12.9A                         | /                         | 3≤R<5<br>5≤R<50                    | ≤100<br>≤50   |
| 1206                  | 0.5W                 | -55°C~170°C                     | 40.82A                        | 7.0~50.0                  | 0.3~50                             | 0.3mΩ: ≤±450<br>0.5~0.9mΩ: ≤±175<br>1.0~15.0mΩ: ≤±75<br>15.1~50mΩ: ≤±50 |
|                       | 1W                   |                                 | 57.74A                        | 7.0~50.0                  | 0.3~50                             | 0.3mΩ: ≤±450<br>0.5~0.9mΩ: ≤±175<br>1.0~15.0mΩ: ≤±75<br>15.1~50mΩ: ≤±50 |
|                       | 1.5W                 |                                 | 70.71A                        | /                         | 0.3~1.0                            | 0.3mΩ: ≤±450<br>0.5~0.9mΩ: ≤±175<br>1.0mΩ: ≤±75                         |
| 2010                  | 1W                   |                                 | 44.72A                        | 7~49                      | 0.5~100                            | 0.5~0.9mΩ: ≤±100<br>1.0~1.9mΩ: ≤±75<br>2.0~6.9mΩ: ≤±50<br>7~100mΩ: ≤±25 |
|                       | 1.5W                 |                                 | 54.77A                        | 7~40                      | 0.5~40                             | 0.5~0.9mΩ: ≤±100<br>1.0~1.9mΩ: ≤±75<br>2.0~6.9mΩ: ≤±50<br>7~40mΩ: ≤±25  |
|                       | 2W                   |                                 | 63.25A                        | 7~12                      | 0.5~12                             | 0.5~0.9mΩ: ≤±100<br>1.0~1.9mΩ: ≤±75<br>2.0~6.9mΩ: ≤±50<br>7~12mΩ: ≤±25  |
| 2512                  | 1W                   |                                 | 57.74A                        | 7~50                      | 0.3~100                            | 0.3mΩ: ≤±150<br>0.5~1.0mΩ: ≤±75<br>1.1~3.0mΩ: ≤±50<br>3.1~100mΩ: ≤±25   |
|                       | 1.5W                 |                                 | 70.71A                        |                           |                                    | 0.3mΩ: ≤±150<br>0.5~1.0mΩ: ≤±75<br>1.1~3.0mΩ: ≤±50<br>3.1~100mΩ: ≤±25   |
|                       | 2W                   |                                 | 81.65A                        | 7~50                      | 0.3~75.0                           | 0.5~1.0mΩ: ≤±75<br>1.1~3.0mΩ: ≤±50<br>3.1~100mΩ: ≤±25                   |
|                       | 3W                   |                                 | 77.46A                        | 7~10                      | 0.5~10                             | 0.5~1.0mΩ: ≤±75<br>1.1~2.5mΩ: ≤±50<br>2.6~10mΩ: ≤±25                    |
| 2725                  | 4W                   |                                 | 126.49A                       | /                         | 0.20~3.0                           | 0.2mΩ: ≤±100<br>0.25~3.0mΩ: ≤±50  |
|                       | 5W                   |                                 | 158.11A                       |                           |                                    | 0.20~0.5  |
| 2728                  | 3W                   | 27.39A                          | 4.0~19.0                      | 4.0~100                   | 4.0~100mΩ: ≤±25                    |   |
|                       | 3.5W                 | 29.58A                          | 4.0~19.0                      | 4.0~100                   | 4.0~100mΩ: ≤±25                    |   |
|                       | 4W                   | 31.62A                          | 4.0~19.0                      | 4.0~50.0                  | 4.0~50mΩ: ≤±25                     |   |
| 4527S                 | 2W                   | 63.25A                          | 7.0~100                       | 0.5~200                   | 0.5~1.0mΩ: ≤±75<br>1.1~200mΩ: ≤±50 |   |
|                       | 3W                   | 77.5A                           | 7.0~27                        | 0.5~27                    | 0.5~1.0mΩ: ≤±75<br>1.1~27mΩ: ≤±50  |   |
|                       | 5W                   | 100A                            | 7.0~7.5                       | 0.5~7.5                   | 0.5~1.0mΩ: ≤±75<br>1.1~7.5mΩ: ≤±50 |   |
| 4527                  | 5W                   | 100A                            | 7.0~120                       | 0.5~120                   | 0.5~1.0mΩ: ≤±75<br>1.1~200mΩ: ≤±50 |   |

■ **Derating Curve 功率衰减曲线图**

Type 1206、2010、2512、2725、2728、4527、4527S



Type 0805



■ **Material of Alloy 合金材质**

| 型号<br>Type | 功率<br>Watts | 材质<br>Material                         | 阻值范围<br>Resistance Range |
|------------|-------------|--|--------------------------|
| 1206       | 0.5 1.0 1.5 | 锰铜合金<br>Copper-Manganese Alloy         | $\cong 4m\Omega$         |
|            |             | 铁铬铝合金<br>Iron-Chromium Aluminium Alloy | $> 4m\Omega$             |
| 2010       | 1.0 1.5 2.0 | 锰铜合金<br>Copper-Manganese Alloy         | $\cong 4m\Omega$         |
|            |             | 铁铬铝合金<br>Iron-Chromium Aluminium Alloy | $> 4m\Omega$             |
| 2512       | 1.0 1.5 2.0 | 锰铜合金<br>Copper-Manganese Alloy         | $\cong 3.5m\Omega$       |
|            |             | 铁铬铝合金<br>Iron-Chromium Aluminium Alloy | $> 3.5m\Omega$           |
|            | 3.0         | 锰铜合金<br>Copper-Manganese Alloy         | $\cong 2.5m\Omega$       |
|            |             | 铁铬铝合金<br>Iron-Chromium Aluminium Alloy | $\cong 3m\Omega$         |
| 2725       | 4.0 5.0     | 锰铜合金<br>Copper-Manganese Alloy         | $\cong 0.5m\Omega$       |
|            |             | 铁铬铝合金<br>Iron-Chromium Aluminium Alloy | $> 0.5m\Omega$           |
| 2728       | 3.0 3.5 4.0 | 铁铬铝合金<br>Iron-Chromium Aluminium Alloy | 所有<br>All                |
| 4527       | 2.0 3.0 5.0 | 锰铜合金<br>Copper-Manganese Alloy         | $\cong 3.0m\Omega$       |
|            |             | 铁铬铝合金<br>Iron-Chromium Aluminium Alloy | $\cong 4m\Omega$         |

■ Environmental Characteristics 信赖性试验项目

| Item 项目  | Requirement 条件   | Test Method 测试方法   |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
|--|--|--|---------|---------------------|--------------------------------|------|------|---------------|----|------|----|--|------|----|---------------|------|----|------|----|---------------|----|------|----|---------------|------|----|-------|----|--|------|----|--|
| 温度系数<br>Temperature<br>Coefficient of<br>Resistance<br>(TCR) | 参照规格表<br>Refer to<br>specifications  | $TCR (ppm/^{\circ}C) = (R2-R1) / [R1 (T2-T2)]$<br>室温下量测之阻值( $\Omega$ )<br>● R2: 150 ° C 下量测之阻值( $\Omega$ ) resistance of 150 ° C<br>● T1:室温之温度( $^{\circ}C$ ) resistance of room temperature<br>● T2: 150 ° C<br>● 依据JIS C 5201-1 4.8 Refer to JIS C 5201-1 4.8  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 短时间过负荷<br>Short Time<br>Overbad                              | $\leq \pm 0.5\%$<br>$\leq \pm 2.0\%$ ( 4527 & 4527S series)<br>外观无损伤, 无短路或烧毁现象<br>No evidence of mechanical damage | 施加过负荷5秒, 静置30分钟以上再量测阻值变化率。<br>(过负荷条件下表)<br>Applied Overload for 5 seconds and release the load for<br>about 30 minutes, then measure its resistance variance<br>rate. (Overload condition refer to below): <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>型号 Type</th> <th>额定功率<br/>Rated Power</th> <th>额定功率倍<br/>数 # of rated<br/>power</th> </tr> </thead> <tbody> <tr> <td rowspan="2">1206</td> <td>0.5W</td> <td rowspan="2">4倍<br/>4 times</td> </tr> <tr> <td>1W</td> </tr> <tr> <td>2010</td> <td>1W</td> <td></td> </tr> <tr> <td rowspan="3">2512</td> <td>1W</td> <td rowspan="3">5倍<br/>5 times</td> </tr> <tr> <td>1.5W</td> </tr> <tr> <td>2W</td> </tr> <tr> <td rowspan="2">2725</td> <td>3W</td> <td rowspan="2">3倍<br/>3 times</td> </tr> <tr> <td>4W</td> </tr> <tr> <td rowspan="3">2728</td> <td>3W</td> <td rowspan="3">3倍<br/>3 times</td> </tr> <tr> <td>3.5W</td> </tr> <tr> <td>4W</td> </tr> <tr> <td>4527S</td> <td>3W</td> <td></td> </tr> <tr> <td>4527</td> <td>5W</td> <td></td> </tr> </tbody> </table> Refer to JIS C 5201-1 4.13 | 型号 Type | 额定功率<br>Rated Power | 额定功率倍<br>数 # of rated<br>power | 1206 | 0.5W | 4倍<br>4 times | 1W | 2010 | 1W |  | 2512 | 1W | 5倍<br>5 times | 1.5W | 2W | 2725 | 3W | 3倍<br>3 times | 4W | 2728 | 3W | 3倍<br>3 times | 3.5W | 4W | 4527S | 3W |  | 4527 | 5W |  |
| 型号 Type  | 额定功率<br>Rated Power  | 额定功率倍<br>数 # of rated<br>power   |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 1206   | 0.5W   | 4倍<br>4 times  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
|  | 1W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 2010   | 1W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 2512   | 1W   | 5倍<br>5 times  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
|  | 1.5W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
|  | 2W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 2725   | 3W   | 3倍<br>3 times  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
|  | 4W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 2728   | 3W   | 3倍<br>3 times  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
|  | 3.5W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
|  | 4W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 4527S  | 3W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 4527   | 5W   |  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 绝缘电阻试验<br>Insulation<br>Resistance                           | $\geq 10^9 \Omega$   | 将金属板微电阻置于治具上, 在正负极施加100VDC 一<br>分钟后, 测量电极与保护层及电极与基板(底材)间之绝缘<br>电阻值依据 JIS-C5201-1 4.6<br>Put the resistor in the fixture, add 100 VDC in + , -<br>terminal for 60secs then measured the insulation<br>resistance between electrodes and insulating enclosure<br>or between electrodes and base material.<br>Refer to JIS-C5201-1 4.6  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 绝缘耐电压<br>Dielectric<br>Withstanding<br>Voltage               | 无短路或烧毁现象。<br>No short or burned on the appearance.   | 将金属板微电阻置于治具上, 在正、负极施加500VAC。<br>限制突波电流: 50mA(max.)<br>依据JIS-C5201-1 4.7<br>Applied 500VAC for 1 minute, and Limit surge current 50<br>mA (max.)<br>Refer to JIS-C5201-1 4.7  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 抗焊锡热<br>Resistance to<br>Solder Heat                         | $\leq \pm 0.5\%$<br>外观无损伤<br>No evidence of mechanical damage  | 将金属板微电阻浸渍于260 ± 5 °C之锡炉中10 ± 1秒, 取出静<br>置60分钟以上, 再量测阻值变化率。<br>依据JIS-C5201-1 4.18<br>The tested resistor be immersed 25 mm/sec into molten<br>solder of 260 ± 5 for 10 °C ± 1secs. Then the resistor is left<br>in the room for 1 hour, and measured its resistance<br>variance rate.<br>Refer to JIS-C5201-1 4.18  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |
| 焊锡性<br>Solderability   | 导体吃锡面积应大于95%。<br>Solder coverage over 95%  | 将金属板微电阻浸渍于245 ± 5 °C之炉中3 ± 1 秒后取出置<br>于显微镜下观察焊锡面积<br>Add flux into tested resistors, immersion into solder bath<br>in temperature 245 ± 5 °C for 3 ± 1secs.  |         |                     |                                |      |      |               |    |      |    |  |      |    |               |      |    |      |    |               |    |      |    |               |      |    |       |    |  |      |    |  |

| Item 项目  | Requirement 条件  | Test Method 测试方法   |                             |                           |                            |                            |                             |                            |
|--|---|--|-----------------------------|---------------------------|----------------------------|----------------------------|-----------------------------|----------------------------|
| 低温放置<br>Low Temperature Exposure (Storage)             | $\leq \pm 0.5\%$<br>外观无损伤<br>No evidence of mechanical damage   | 将金属板微电阻放置 $-55 \pm 2^\circ\text{C}$ 恒温箱中1000小时，取出后静置60分钟以上后再量测阻值变化率。<br>依据 JIS-C5201-1 4.23.4<br>Put the tested resistor in chamber under temperature $-55 \pm 2^\circ\text{C}$ for 1,000 hours. Then leaving the tested resistor in room temperature for 60 minutes, and measure its resistance variance rate.<br>Refer to JIS-C5201-1 4.23.4   |                             |                           |                            |                            |                             |                            |
| 高温放置<br>High Temperature Exposure (Storage)            | $\leq \pm 1.0\%$<br>外观无损伤<br>No evidence of mechanical damage   | 将金属板微电阻置于 $170 \pm 5^\circ\text{C}$ 之烤箱中1000小时，取出静置1小时以上再量测阻值变化率。<br>依据 JIS-C5201-1 4.23.2<br>Put tested resistor in chamber under temperature $170 \pm 5^\circ\text{C}$ for 1,000 hours. Then leaving the tested resistor in room temperature for 60 minutes, and measure its resistance variance rate.<br>Refer to JIS-C5201-1 4.23.2  |                             |                           |                            |                            |                             |                            |
| 温度循环<br>Temperature Cycling (Rapid Temperature Change) | $\leq \pm 0.5\%$<br>外观无损伤<br>No evidence of mechanical damage   | 将金属板微电阻置入冷热循环机中，温度为 $-55^\circ\text{C}/15$ 分钟， $+150^\circ\text{C}/15$ 分钟，共计循环1000次后取出，静置60分钟以上再量测阻值变化率。<br>Put the tested resistor in the chamber under the temperature cycling which shown in the following table shall be repeated 1,000 times consecutively. Then leaving the tested resistor in the room temperature for 60 minutes, and measure its resistance variance rate. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>测试温度<br/>Testing Temperature</th> <th>测试条件<br/>Testing Condition</th> </tr> </thead> <tbody> <tr> <td>最低温度<br/>Lowest Temperature</td> <td><math>-55 +0/-10^\circ\text{C}</math></td> </tr> <tr> <td>最高温度<br/>Highest Temperature</td> <td><math>150 +10/-0^\circ\text{C}</math></td> </tr> </tbody> </table> 依据JIS-C5201-1 4.19<br>Refer to JIS-C5201-1 4.19 | 测试温度<br>Testing Temperature | 测试条件<br>Testing Condition | 最低温度<br>Lowest Temperature | $-55 +0/-10^\circ\text{C}$ | 最高温度<br>Highest Temperature | $150 +10/-0^\circ\text{C}$ |
| 测试温度<br>Testing Temperature                            | 测试条件<br>Testing Condition   |  |                             |                           |                            |                            |                             |                            |
| 最低温度<br>Lowest Temperature                             | $-55 +0/-10^\circ\text{C}$  |  |                             |                           |                            |                            |                             |                            |
| 最高温度<br>Highest Temperature                            | $150 +10/-0^\circ\text{C}$  |  |                             |                           |                            |                            |                             |                            |
| 耐湿试验<br>Moisture Resistance (Climatic Sequence)        | $\leq \pm 0.5\%$<br>外观无损伤<br>No evidence of mechanical damage   | 将金属板微电阻置于恒温恒湿循环机中,并依步骤1至步骤7(参考图一)施加10个湿热循环，取出静置24小时以上再量测阻值变化率。<br>依据MIL-STD 202 Method 106<br>Put the tested resistor in chamber and subject to 10 cycles of damp heat and without power. Each one of which consists of the steps 1 to 7 (Figure 1). Then leaving the tested resistor in room temperature for 24 hr, and measure its resistance variance rate.<br>Refer to MIL-STD 202 Method 106  |                             |                           |                            |                            |                             |                            |
| 负荷寿命<br>Load Life                                      | $\leq \pm 1.0\%$<br>$\leq \pm 2.0\%$ (4527 & 4527S series)<br>外观无损伤<br>No evidence of mechanical damage | 将金属板微电阻置于 $70 \pm 2^\circ\text{C}$ 之烤箱中施加额定电流，90分钟ON，30分钟OFF，共1,000小时取出静置60分钟以上再量测阻值变化率。<br>依据 JIS-C5201-1 4.25<br>Put the tested resistor in chamber under temperature $70 \pm 2^\circ\text{C}$ and load the rated $^\circ\text{C}$ current for 90 minutes on 30 minutes off, total 1000 hours. Then leaving the tested resistor in room temperature for 60 minutes, and measure its resistance variance rate.<br>Refer to JIS-C5201-1 4.25   |                             |                           |                            |                            |                             |                            |
| 高温高湿<br>Bias Humidity                                  | $\leq \pm 0.5\%$<br>外观无损伤<br>No evidence of mechanical damage   | 将金属板微电阻置于 $85^\circ\text{C} \pm 5^\circ\text{C} / 85 \pm 5\% \text{RH}$ 之恒温恒湿循环机中施加额定电流，90分钟ON，30分钟OFF，共1,000小时取出静置60分钟以上再量测阻值变化率。<br>依据 JIS-C5201-1 4.24<br>Put the tested resistor in chamber under $85 \pm 5^\circ\text{C}$ and $85 \pm 5\% \text{RH}$ with 10% bias and load the rated current for 90 minutes on, 30 minutes off, total 1,000 hours. Then leaving the tested resistor in room temperature for 60 minutes, and measure its resistance variance rate.<br>Refer to JIS-C5201-1 4.24   |                             |                           |                            |                            |                             |                            |