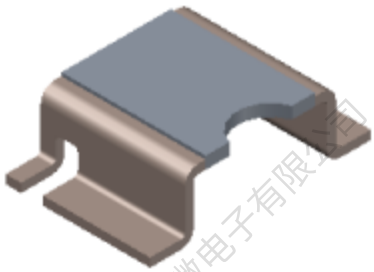
## 产品特点与应用 Features and applications



- **高功率、耐冲击及功耗小；**

  High power, shock resistant, low power loss;

- **耐高温、低温漂及高精度稳定性强；**

  High temperature endurance, ultra-low TCR, high precision & superior stability;

- **工作温度范围：-65℃ ~ +170℃；**

  Operating temperature range: -65℃ ~ +170℃;

- **无铅，符合 ROHS 要求，可非标定制；**

  Lead free, ROHS compliant, Customizable;

- **符合 AEC-Q200 特性测试。**

  AEC-Q200 qualified.

**主要应用于：Applications:**

- **电子电路中的电流采样和过流保护；**

  Current sampling and overcurrent protection in electronic circuits;

- **新能源汽车控制电路和充电桩电路/传统汽车控制电路；**

  New energy vehicle control circuit and charging station circuit/ traditional vehicle control circuit;

- **变频器及伺服电机控制电路；**

  Inverter and servo motor control circuit;

- **开关电源、测量及测试仪器；**

  Switching power, measuring and testing instruments;

- **锂电池、太阳能及通讯电源等控制电路；**

  Control circuits for lithium batteries, solar energy, and communication power sources;

- **家用电器等多个领域。**

  Household appliances, etc.

# ED4026 四端子合金贴片电阻产品规格书

ED4026 Four-Terminal Alloy Resistor specification



## 规格型号 Part Number Information

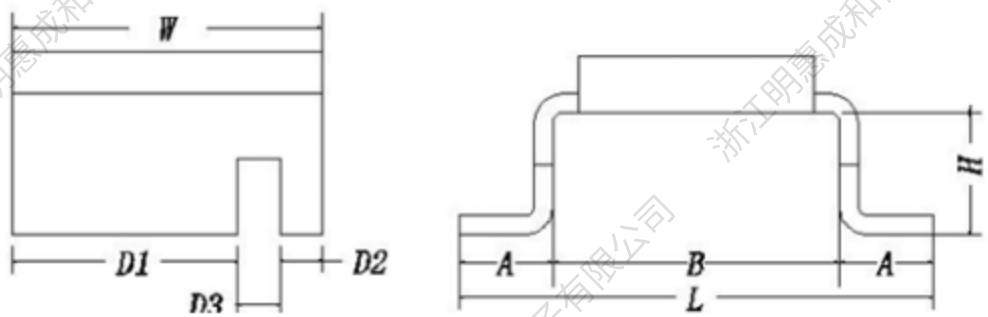
| ED | 40 | 0M50 | P1 | F | 7 | T |
|---|---|---|---|---|---|---|
| 【1】 | 【2】 | 【3】 | 【4】 | 【5】 | 【6】 | 【7】 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| 系列 Categor | 尺寸 Size | 电阻 Resistance | 功率 Power | 精度 Tolerance | 温度系数 TCR | 包装 Package |
| ED | 4026 | 0m10=0.1 mΩ<br>0m50=0.5 mΩ<br>R001=1 mΩ<br>R010=10 mΩ | P1=1W<br>P9=9W<br>PA=10W<br>PF=15W | D=±0.5%<br>F=±1%<br>G=±2%<br>J=±5% | 1=±10-19 ppm/℃<br>2=±20-29 ppm/℃<br>5=±50-59 ppm/℃<br>7=±70-7 ppm/℃ | B=散装 bulk<br>T=卷盘 reel<br>P=托盘 tray |

## 电气特性 Electrical characteristics

| 系列 Category | 尺寸 Size | 电阻(mΩ) Resistance | 材料 Material | P70℃ Power (W) | 温度系数（ppm/℃） TCR |
|---|---|---|---|---|---|
| ED | 4026 | 0.2 | MnSn | 12 | ±75 |
| | | 0.3 | | 11 | ±75 |
| | | 0.5 | Mn | 9 | ±75 |
| | | 0.7 | | 8 | ±75 |
| | | 0.75 | | 8 | ±75 |
| | | 1 | | 7 | ±75 |
| | | 2 | Ka/Fe | 6 | ±50 |
| | | 3 | | 5 | ±50 |
| | | 4 | | 4 | ±50 |
| | | 5 | | 3 | ±50 |

## 外形尺寸 Outline dimension




| 系列 Category | 尺寸 Size | L(mm) | W(mm) | H(mm) | A(mm) | B(mm) | D1(mm) | D2(mm) | D3(mm) |
|---|---|---|---|---|---|---|---|---|---|
| ED | 4026 | 10.1±0.2 | 6.60±0.2 | 2.6±0.2 | 1.95±0.1 | 6.2±0.2 | 4.9±0.2 | 0.7±0.1 | 1.0±0.1 |

## 标识方式 Marking

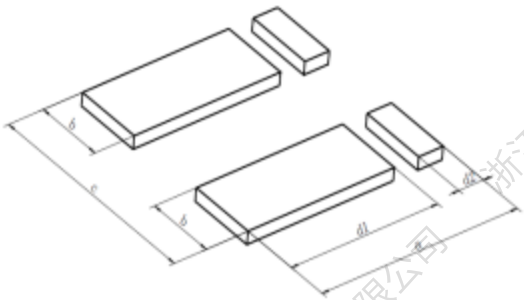



标识位数：4 位 Marker digit：4 digit

字码标识方式如下：Code identification as below：

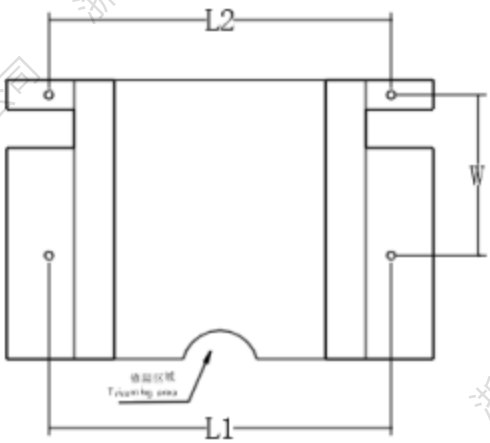
- 0M10=0.1mΩ; 0M20=0.2mΩ … 2M50=2.5mΩ
- R001=1mΩ: R002=2mΩ … R010=10mΩ

## 焊盘尺寸 Pad Size



| 系列 Category | 尺寸 Size | c/mm | b/mm | a/mm | d1/mm | d2/mm |
|---|---|---|---|---|---|---|
| ED | 4026 | 10.8 | 2.9 | 7.3 | 5.6 | 0.9 |

## 测试点位置 Test Point

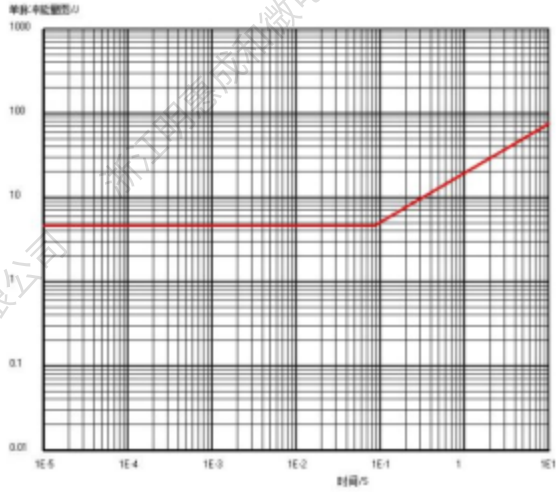



| 系列 Category | 尺寸 Size | L1(mm) | L2(mm) | W(mm) |
|---|---|---|---|---|
| ED | 4026 | 8.1 | 8.1 | 3.8 |

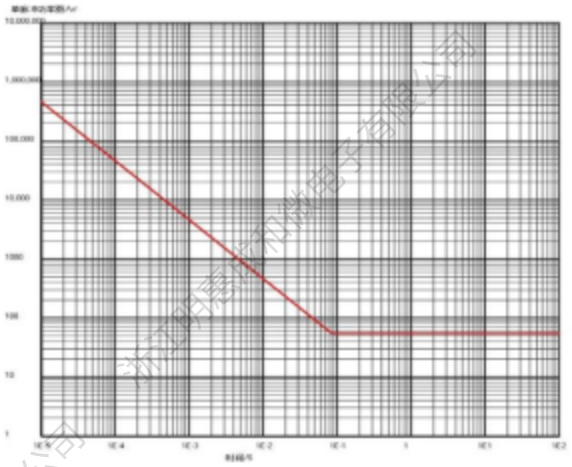
## 试验和要求 Tests and Requirements

| NO. | 测试项目 Test Item | 条件 Test Condition | 阻值变化极限 Limit | 参考标准 Reference |
|---|---|---|---|---|
| 1 | 阻值 Resistance | 在室温 25℃±5℃下测量电阻值 Measured at room temperature 25℃±5℃ | 在规定值内 Within Spec. | IEC60115-1 6.1 |
| 2 | 温度系数 TCR | 测量点 25℃和+125℃ Measurement 25℃,+125℃； reference+25℃ | 在规定值内 Within Spec. | MIL-STD-202 Method 304 |
| 3 | 短时过载 Short time overload | 5 倍额定功率，5s 5 times of the rated power for 5 seconds | -1%≤ΔR≤1% | IEC60115-1 8.1 |
| 4 | 高温存储 High Temperature Exposure | 1000 小时 170℃，不加载 1000 hours@170℃， Un-powered | -1%≤ΔR≤1% | MIL-STD-202 Method 108 |
| 5 | 温度循环 Temperature cycling | -55℃(15 min)+155℃(15min), 1000 循环 Dwell Time 15 minutes,1000 cycles | -1%≤ΔR≤1% | JESD22 Method JA-104 |
| 6 | 负荷寿命 Operational Life | 70℃± 2℃，额定功率通电 1.5H，断电 0.5H,1000H 70℃± 2℃,1000 hours at 70±2℃, applied rated power, 1.5 hours on, 0.5 hour off | -1%≤ΔR≤1% | MIL-STD-202 Method 108 |
| 7 | 机械冲击 Mechanical Shock | 100 g's，6 ms，半正波: 12.3ft/s Half-sine; Velocity change: 12.3ft/s 各方向 3 次（18 次） 3 shocks in each direction along the 3 mutually perpendicular axes(totally 18 times) | -1%≤ΔR≤1% | MIL-STD-202 Method 213 |
| 8 | 震动试验 Vibration | 10 Hz 到 2000 Hz，20min, 3 轴，12 周期 5g's for 20 minutes, 10Hz~2000Hz, 12cycles each of 3 orientations | -1%≤ΔR≤1% | MIL-STD-202 Method 204 |
| 9 | 耐焊接热 Resistance to Soldering Heat | 260±5℃，10±1s Immerse the specimen into the solder pot at 260±5℃ for 10±1s | -0.5%≤ΔR≤ 0.5% | MIL-STD-202 Method 210 |
| 10 | 可焊性 Solderability | 260℃， 5s | 覆盖率≥95% 95% Coverage Minimum | J-STD-002 |
| 11 | 高温高湿 Biased Humidity | +85℃, 85% RH, 10%额定功率, 1000 h 10 % of rated power, 1000h | -1%≤ΔR≤1% | MIL-STD-202 Method103 |
| 12 | 基板弯曲 Board Flex | 弯曲距离： 2mm,60+5s Distance:2mm,60+5s holding time | -1%≤ΔR≤1% | AEC-Q200-005 |

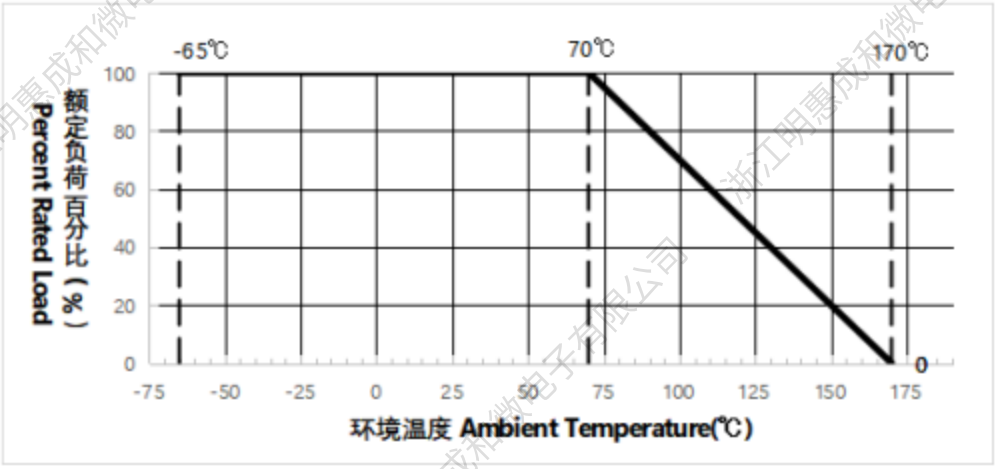
## 脉冲能量图 Pulse Energy Pattern （0.2mΩ）




## 脉冲功率图 Pulse Power Diagram （0.2mΩ）

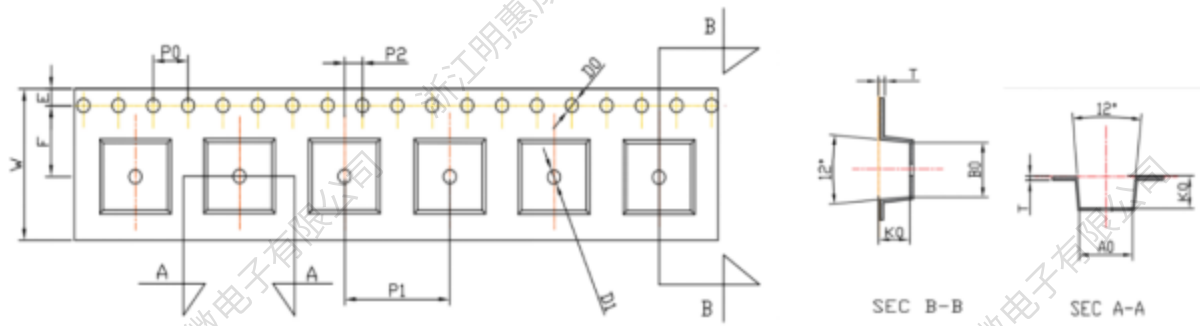


## 降耗曲线 Derating Curves of Dissipation



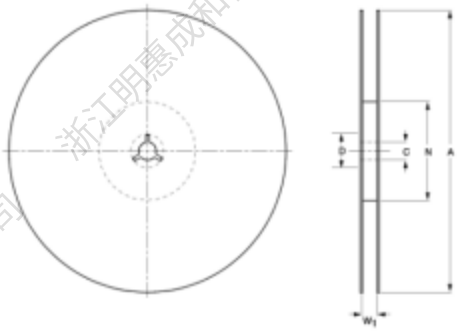
## 包装 Packaging

1. 载带尺寸 Embossed Tape Dimensions




| 系列 Category | 尺寸 Size | A0(mm) | B0(mm) | W(mm) | E (mm) | F (mm) | T(mm) |
|---|---|---|---|---|---|---|---|
| ED | 4026 | 6.90±0.10 | 10.40±0.10 | 24.00±0.30 | 1.75±0.10 | 11.50±0.10 | 0.40±0.05 |
| | | P0(mm) | P1(mm) | P2(mm) | D0(mm) | D1(mm) | K0(mm) |
| | | 4.00±0.10 | 12.00±0.10 | 2.00±0.10 | 1.50±0.10 | 1.50±0.10 | 3.60±0.10 |
| | | | | | | | 4.40±0.10 |

2. 卷盘尺寸 Reel Dimensions




| 系列 Category | 尺寸 Size | A(mm) | N(mm) | C(mm) | D(mm) | W1 (mm) |
|---|---|---|---|---|---|---|
| ED | 4026 | 330.0±2.0 | 100.0±1.0 | 13.5±0.5 | 21±0.8 | 24.4+2/-0 |

3. 包装数量 Quantity of Package

| 系列 Category | 尺寸 Size | 电阻(mΩ) Resistance | 卷盘尺寸 Reel size | 数量(pcs) Quantity |
|---|---|---|---|---|
| ED | 4026 | 0.2 | 330.0±2.0 | 1000 |
| | | 0.3 | | |
| | | 0.5 | | |
| | | 0.7 | | 1500 |
| | | 0.75 | | |
| | | 1 | | |
| | | 2 | | |
| | | 3 | | |
| | | 4 | | |
| | | 5 | | |

浙江明惠成和微电子有限公司