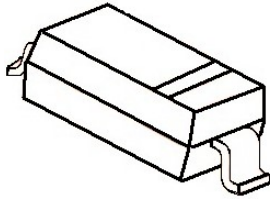


**SOD-123**

**特征 Features**

- 齐纳击穿阻抗低; Low Zener Impedance
- 最大功率耗散 500mW; Power Dissipation of 500mW
- 高稳定性和可靠性。High Stability and High Reliability

**机械数据 Mechanical Data**

- 封装: SOD-123 封装 SOD-123 Small Outline Plastic Package
- 极性: 色环端为负极 Polarity: Color band denotes cathode end
- 环氧树脂 UL 易燃等级 Epoxy UL: 94V-0
- 安装位置: 任意 Mounting Position: Any

极限值和温度特性(TA = 25°C 除非另有规定)

**Maximum Ratings & Thermal Characteristics** (Ratings at 25°C ambient temperature unless otherwise specified.)

| 参数 Parameters                  | 符号 Symbol | 数值 Value          | 单位 Unit |
|--------------------------------|-----------|-------------------|---------|
| 功率消耗 Power Dissipation         | Pd        | 500 <sup>1)</sup> | mW      |
| 正向压降 Forward Voltage @IF=10mA  | Vf        | 0.9 <sup>2)</sup> | V       |
| 存储温度 Storage temperature range | Ts        | -65-+150          | °C      |

1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>

2) Short duration test pulse used to minimize self-heating effect

3) f=1KHz

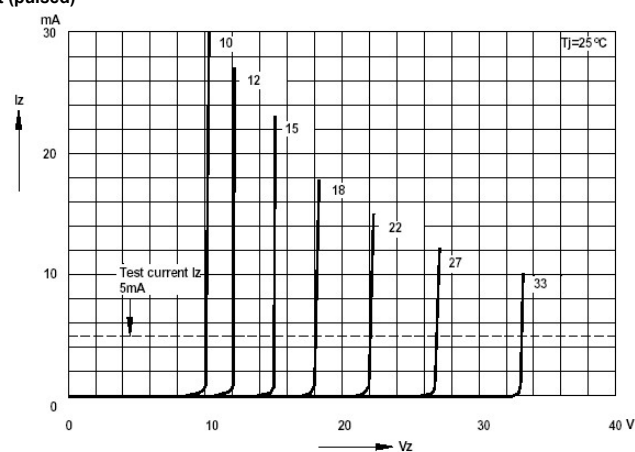
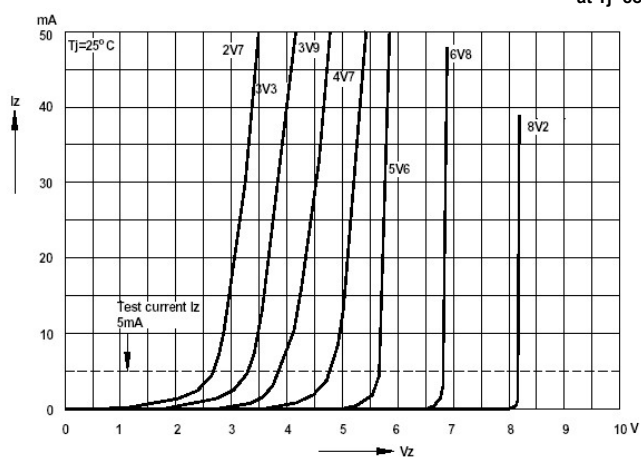
电特性 (TA = 25°C 除非另有规定)

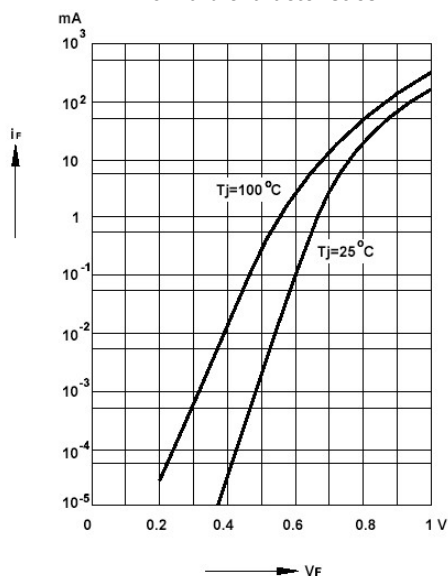
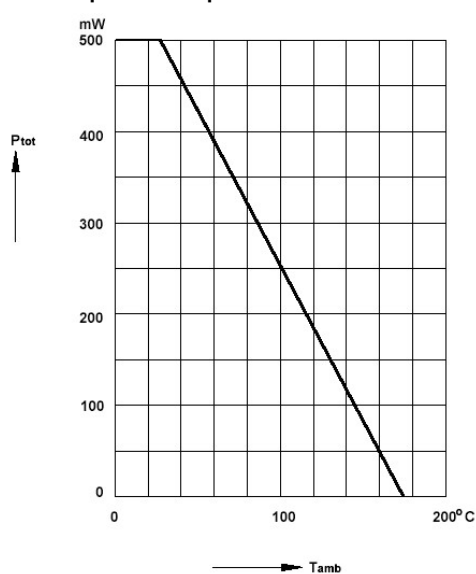
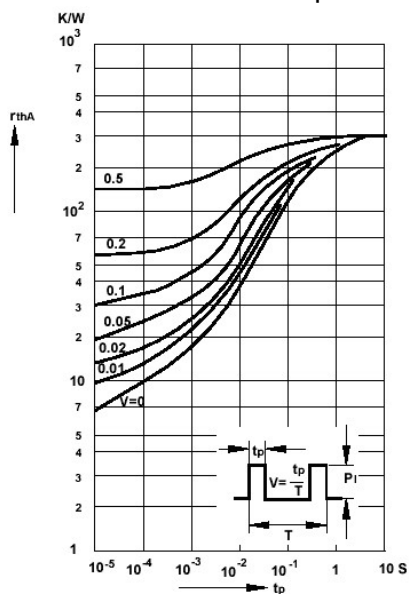
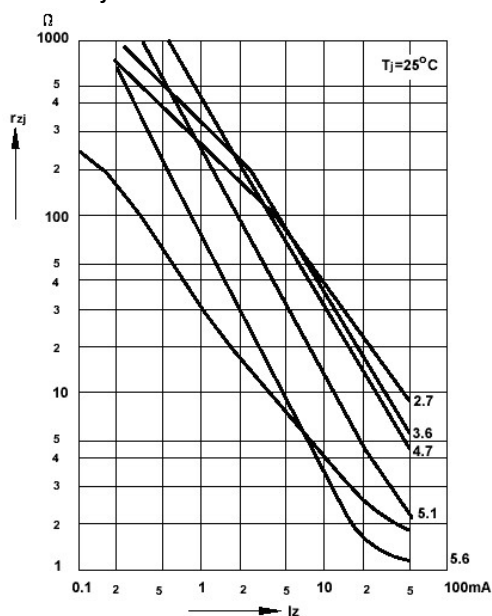
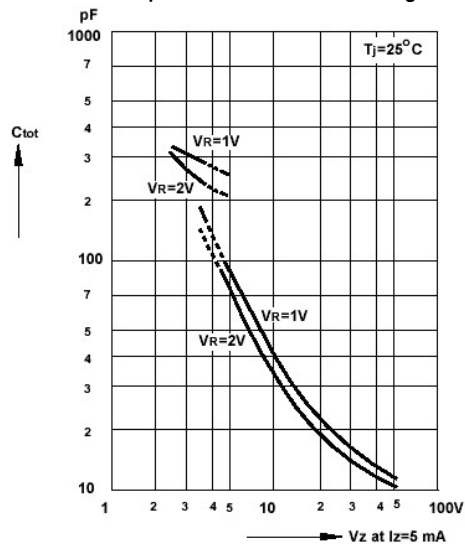
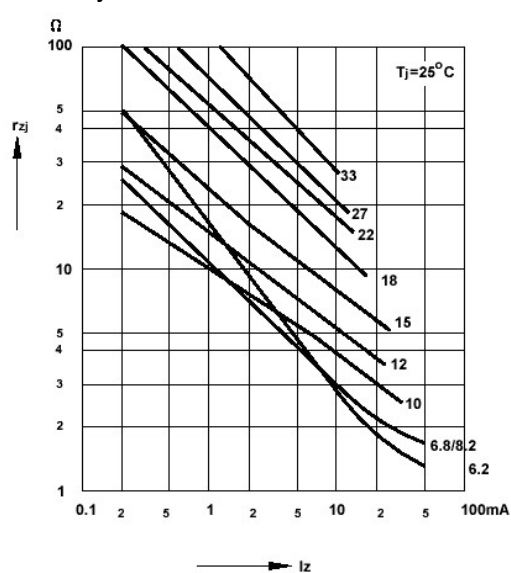
**Electrical Characteristics** (Ratings at 25°C ambient temperature unless otherwise specified.)

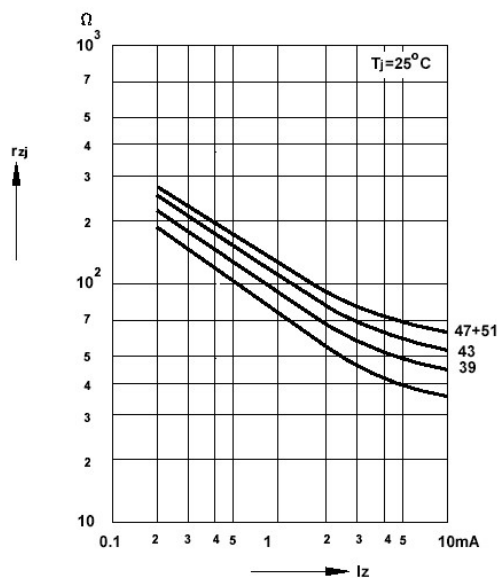
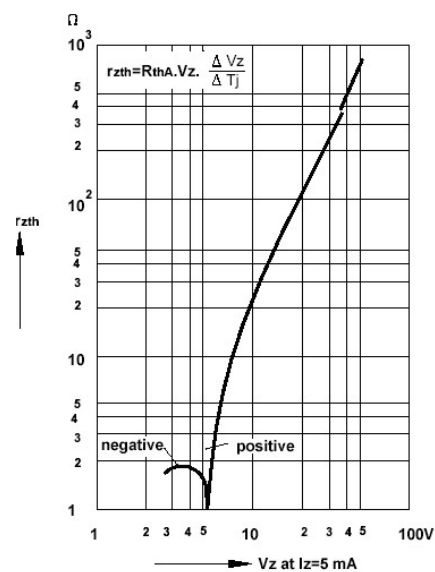
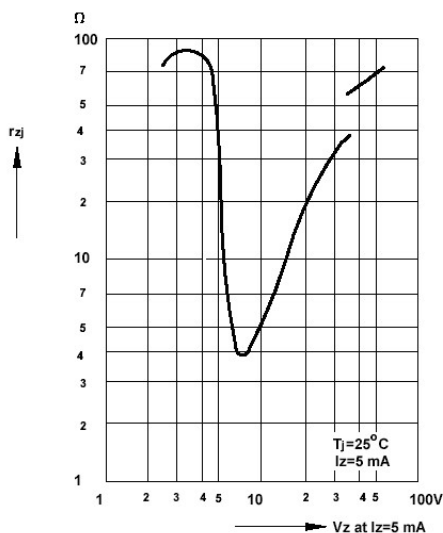
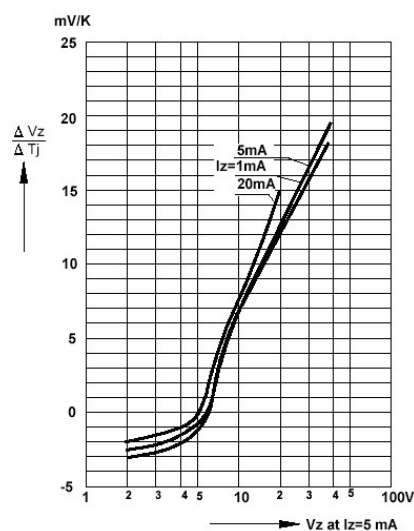
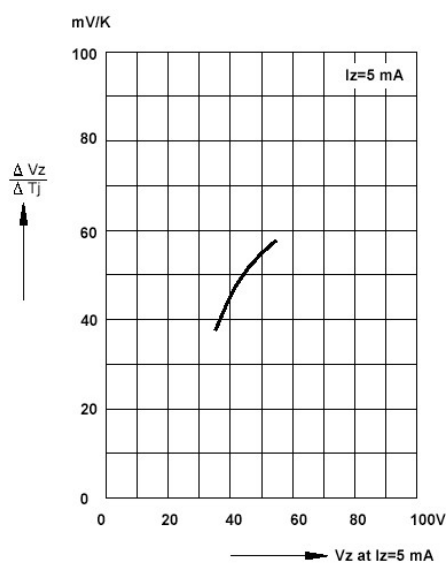
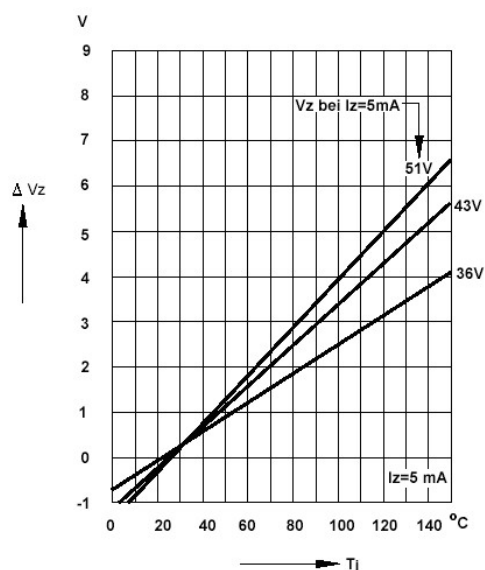
| Device    | Marking | Zener Voltage Range |        |        |     | Maximum Zener Impedance |          |     | Maximum Reverse Current |     | Typical Temperature coefficient @ IZTC=mV/°C |      | Test Current IZTC |
|-----------|---------|---------------------|--------|--------|-----|-------------------------|----------|-----|-------------------------|-----|----------------------------------------------|------|-------------------|
|           |         | Vz@Izt              |        |        | Izt | Zzt @Izt                | Zzk @Izk | Izk | IR                      | VR  | Min                                          | Max  |                   |
|           |         | Nom(V)              | Min(V) | Max(V) | mA  | Ω                       |          | mA  | uA                      | V   |                                              |      |                   |
| BZT52C2V4 | WX      | 2.4                 | 2.28   | 2.52   | 5   | 100                     | 600      | 1.0 | 50                      | 1.0 | -3.5                                         | 0    | 5                 |
| BZT52C2V7 | W1      | 2.7                 | 2.57   | 2.84   | 5   | 100                     | 600      | 1.0 | 20                      | 1.0 | -3.5                                         | 0    | 5                 |
| BZT52C3V0 | W2      | 3.0                 | 2.85   | 3.15   | 5   | 95                      | 600      | 1.0 | 10                      | 1.0 | -3.5                                         | 0    | 5                 |
| BZT52C3V3 | W3      | 3.3                 | 3.14   | 3.47   | 5   | 95                      | 600      | 1.0 | 5                       | 1.0 | -3.5                                         | 0    | 5                 |
| BZT52C3V6 | W4      | 3.6                 | 3.42   | 3.78   | 5   | 90                      | 600      | 1.0 | 5                       | 1.0 | -3.5                                         | 0    | 5                 |
| BZT52C3V9 | W5      | 3.9                 | 3.71   | 4.10   | 5   | 90                      | 600      | 1.0 | 3                       | 1.0 | -3.5                                         | 0    | 5                 |
| BZT52C4V3 | W6      | 4.3                 | 4.09   | 4.52   | 5   | 90                      | 600      | 1.0 | 3                       | 1.0 | -3.5                                         | 0    | 5                 |
| BZT52C4V7 | W7      | 4.7                 | 4.47   | 4.94   | 5   | 80                      | 500      | 1.0 | 3                       | 2.0 | -3.5                                         | 0.2  | 5                 |
| BZT52C5V1 | W8      | 5.1                 | 4.85   | 5.36   | 5   | 60                      | 480      | 1.0 | 2                       | 2.0 | -2.7                                         | 1.2  | 5                 |
| BZT52C5V6 | W9      | 5.6                 | 5.32   | 5.88   | 5   | 40                      | 400      | 1.0 | 1                       | 2.0 | -2.0                                         | 2.5  | 5                 |
| BZT52C6V2 | WA      | 6.2                 | 5.89   | 6.51   | 5   | 10                      | 150      | 1.0 | 3                       | 4.0 | 0.4                                          | 3.7  | 5                 |
| BZT52C6V8 | WB      | 6.8                 | 6.46   | 7.14   | 5   | 15                      | 80       | 1.0 | 2                       | 4.0 | 1.2                                          | 4.5  | 5                 |
| BZT52C7V5 | WC      | 7.5                 | 7.13   | 7.88   | 5   | 15                      | 80       | 1.0 | 1                       | 5.0 | 2.5                                          | 5.3  | 5                 |
| BZT52C8V2 | WD      | 8.2                 | 7.79   | 8.61   | 5   | 15                      | 80       | 1.0 | 0.7                     | 5.0 | 3.2                                          | 6.2  | 5                 |
| BZT52C9V1 | WE      | 9.1                 | 8.65   | 9.56   | 5   | 15                      | 100      | 1.0 | 0.5                     | 6.0 | 3.8                                          | 7.0  | 5                 |
| BZT52C10  | WF      | 10                  | 9.50   | 10.50  | 5   | 20                      | 150      | 1.0 | 0.2                     | 7.0 | 4.5                                          | 8.0  | 5                 |
| BZT52C11  | WG      | 11                  | 10.45  | 11.55  | 5   | 20                      | 150      | 1.0 | 0.1                     | 8.0 | 5.4                                          | 9.0  | 5                 |
| BZT52C12  | WH      | 12                  | 11.40  | 12.60  | 5   | 25                      | 150      | 1.0 | 0.1                     | 8.0 | 6.0                                          | 10.0 | 5                 |
| BZT52C13  | WI      | 13                  | 12.35  | 13.65  | 5   | 30                      | 170      | 1.0 | 0.1                     | 8.0 | 7.0                                          | 11.0 | 5                 |

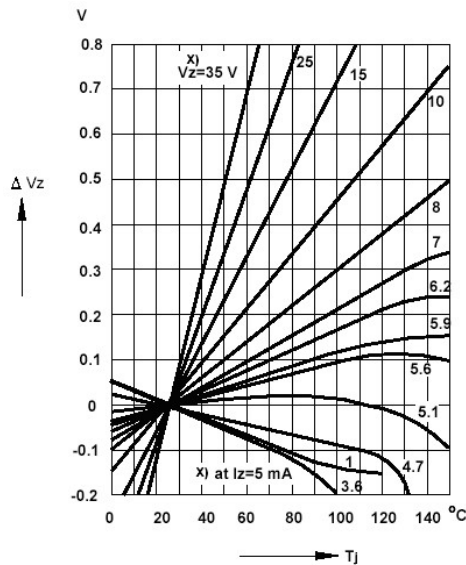
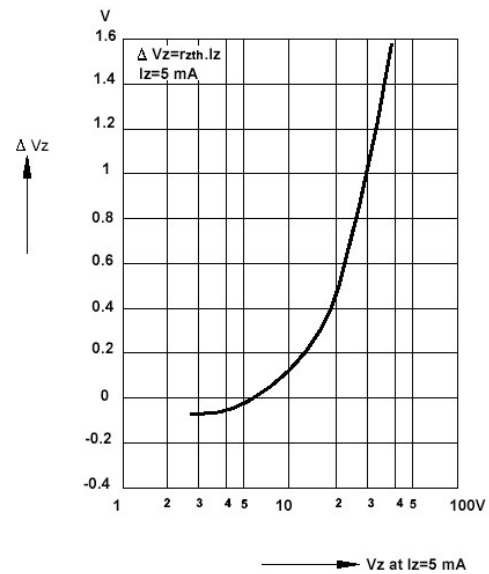
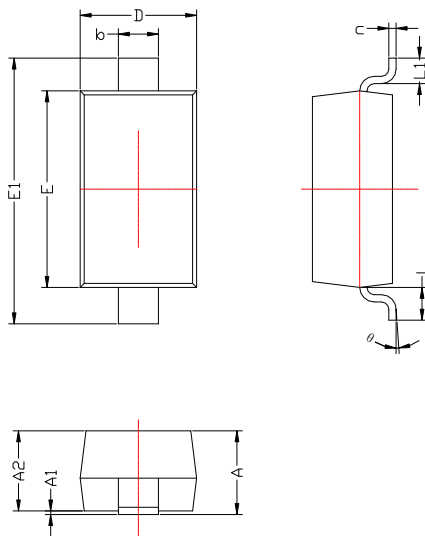
| Device   | Marking | Zener Voltage Range |        |        |     | Maximum Zener Impedance |          |     | Maximum Reverse Current |      | Typical Temperature coefficient @ IZTC=mV/°C |      | Test Current IZTC |
|----------|---------|---------------------|--------|--------|-----|-------------------------|----------|-----|-------------------------|------|----------------------------------------------|------|-------------------|
|          |         | Vz@Izt              |        |        | Izt | Zzt @Izt                | Zzk @Izk | Izk | IR                      | VR   |                                              |      |                   |
|          |         | Nom(V)              | Min(V) | Max(V) | mA  | Ω                       |          | mA  | uA                      | V    | Min                                          | Max  | mA                |
| BZT52C15 | WJ      | 15                  | 14.25  | 15.75  | 5   | 30                      | 200      | 1.0 | 0.1                     | 10.5 | 9.2                                          | 13.0 | 5                 |
| BZT52C16 | WK      | 16                  | 15.20  | 16.80  | 5   | 40                      | 200      | 1.0 | 0.1                     | 11.2 | 10.4                                         | 14.0 | 5                 |
| BZT52C18 | WL      | 18                  | 17.10  | 18.90  | 5   | 45                      | 225      | 1.0 | 0.1                     | 12.6 | 12.4                                         | 16.0 | 5                 |
| BZT52C20 | WM      | 20                  | 19.00  | 21.00  | 5   | 55                      | 225      | 1.0 | 0.1                     | 14.0 | 14.4                                         | 18.0 | 5                 |
| BZT52C22 | WN      | 22                  | 20.90  | 23.10  | 5   | 55                      | 250      | 1.0 | 0.1                     | 15.4 | 16.4                                         | 20.0 | 5                 |
| BZT52C24 | WO      | 24                  | 22.80  | 25.20  | 5   | 70                      | 250      | 1.0 | 0.1                     | 16.8 | 18.4                                         | 22.0 | 5                 |
| BZT52C27 | WP      | 27                  | 25.65  | 28.35  | 2   | 80                      | 300      | 0.5 | 0.1                     | 18.9 | 21.4                                         | 25.3 | 2                 |
| BZT52C30 | WQ      | 30                  | 28.50  | 31.50  | 2   | 80                      | 300      | 0.5 | 0.1                     | 21.0 | 24.4                                         | 29.4 | 2                 |
| BZT52C33 | WR      | 33                  | 31.35  | 34.65  | 2   | 80                      | 325      | 0.5 | 0.1                     | 23.1 | 27.4                                         | 33.4 | 2                 |
| BZT52C36 | WS      | 36                  | 34.20  | 37.80  | 2   | 90                      | 350      | 0.5 | 0.1                     | 25.2 | 30.4                                         | 37.4 | 2                 |
| BZT52C39 | WT      | 39                  | 37.05  | 40.95  | 2   | 130                     | 350      | 0.5 | 0.1                     | 27.3 | 33.4                                         | 41.2 | 2                 |
| BZT52C43 | WU      | 43                  | 40.85  | 45.15  | 2   | 100                     | 700      | 1.0 | 0.1                     | 32.0 | 10.0                                         | 12.0 | 5                 |
| BZT52C47 | WV      | 47                  | 44.65  | 49.35  | 2   | 100                     | 750      | 1.0 | 0.1                     | 35.0 | 10.0                                         | 12.0 | 5                 |
| BZT52C51 | WW      | 51                  | 48.45  | 53.55  | 2   | 100                     | 750      | 1.0 | 0.1                     | 38.0 | 10.0                                         | 12.0 | 5                 |

### Breakdown characteristics at Tj=constant (pulsed)



**Forward characteristics**

**Admissible power dissipation versus ambient temperature**

**Pulse thermal resistance versus pulse duration**

**Dynamic resistance versus Zener current**

**Capacitance versus Zener voltage**

**Dynamic resistance versus Zener current**


**Dynamic resistance versus Zener current**

**Thermal differential resistance versus Zener voltage**

**Dynamic resistance versus Zener voltage**

**Temperature dependence of Zener voltage versus Zener voltage**

**Temperature dependence of Zener voltage versus Zener voltage**

**Change of Zener voltage versus junction temperature**


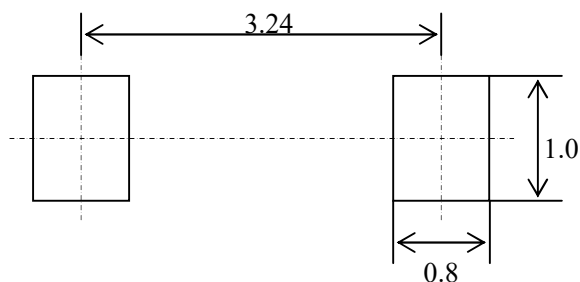
**Change of Zener voltage versus junction temperature**

**Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage**

**SOD-123 PACKAGE OUTLINE** Plastic surface mounted package


| SYMBOL | DIMENSIONS |       |
|--------|------------|-------|
|        | MIN.       | MAX.  |
| A      | 1.050      | 1.250 |
| A1     | 0.000      | 0.100 |
| A2     | 1.050      | 1.150 |
| b      | 0.450      | 0.650 |
| c      | 0.080      | 0.150 |
| D      | 1.500      | 1.700 |
| E      | 2.600      | 2.800 |
| E1     | 3.550      | 3.850 |
| L      | 0.500REF   |       |
| L1     | 0.250      | 0.450 |
| θ      | 0°         | 8°    |

**焊盘设计参考**

Precautions: PCB Design

Recommended land dimensions for SOD-123 diode. Electrode patterns for PCBs



中心距: 3.24  
 脚 宽: 0.55  
 焊盘宽: 1.00  
 脚 长: 0.50  
 焊盘长: 0.80

技术要求:

- 1, 塑封体尺寸: 2.70 X 1.60
- 2: 未注公差为:  $\pm 0.05$
- 3, 所有单位: mm

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