



Features

- Low Zener Impedance
- Power Dissipation of 500mW
- High Stability and High Reliability

Mechanical Data

- SOD-123 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Zener Voltage: 2.4V to 51V
- Power Dissipation: 500mW

Maximum Ratings @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------------|------|
| Max. Forward Voltage @ I _F = 10mA (Note 2) | V _F | 0.9 | V |
| Junction Temperature (Note 1) | P _D | 500 | mW |
| Storage Temperature Range | T _{STG} | -65 to +150 | °C |

Notes:

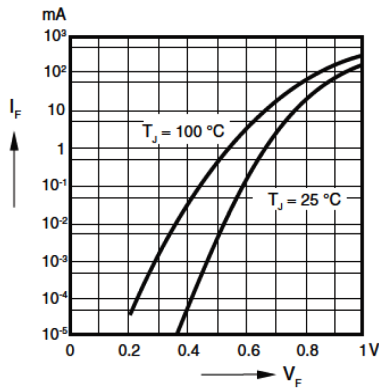
1. Device mounted on ceramic PCB: 7.6mm × 9.4mm × 0.87mm with pad areas 25mm²
2. Short duration test pulse used to minimize self-heating effect

Specification Table

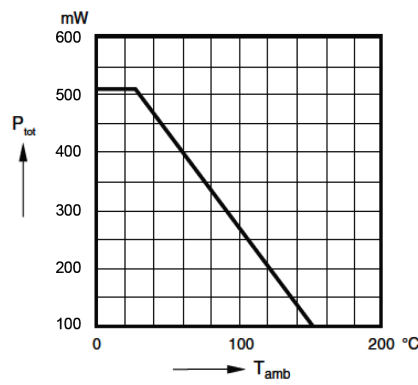
| Part Number | Marking | Zener Voltage Range | | | | Maximum Zener Impedance | | | Maximum Reverse Current | |
|-------------|---------|----------------------------------|--------|--------|-----------------|--------------------------------|--------------------------------|-----------------|-------------------------|----------------|
| | | V _Z @ I _{ZT} | | | I _{ZT} | Z _{ZT@I_{ZT}} | Z _{ZK@I_{ZK}} | I _{ZK} | I _R | V _R |
| | | Nom(V) | Min(V) | Max(V) | mA | Ω | | mA | μA | V |
| BZT52C10+ | WF | 10 | 9.4 | 10.6 | 5 | 20 | 150 | 1 | 0.2 | 7 |
| BZT52C18+ | WL | 18 | 16.8 | 19.1 | 5 | 45 | 225 | 1 | 0.1 | 12.6 |
| BZT52C33+ | WR | 33 | 31 | 35 | 2 | 80 | 325 | 0.5 | 0.1 | 23.1 |
| BZT52C3V9+ | W5 | 3.9 | 3.7 | 4.1 | 5 | 90 | 600 | 1 | 3 | 1 |
| BZT52C4V7+ | W7 | 4.7 | 4.4 | 5 | 5 | 80 | 500 | 1 | 3 | 2 |
| BZT52C5V1+ | W8 | 5.1 | 4.8 | 5.4 | 5 | 60 | 480 | 1 | 2 | 2 |

| Part Number | Typical Temperature Coefficient @ I _{ZTC} = mV/°C | | Test Current I _{ZTC} |
|-------------|--|------|-------------------------------|
| | Min. | Max. | mA |
| BZT52C10+ | 4.5 | 8 | 5 |
| BZT52C18+ | 12.4 | 16 | 5 |
| BZT52C33+ | 27.4 | 33.4 | 2 |
| BZT52C3V9+ | -3.5 | 0 | 5 |
| BZT52C4V7+ | -3.5 | 0.2 | 5 |
| BZT52C5V1+ | -2.7 | 1.2 | 5 |

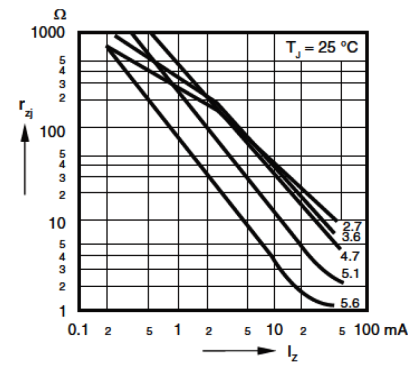
Rating and Characteristic Curves



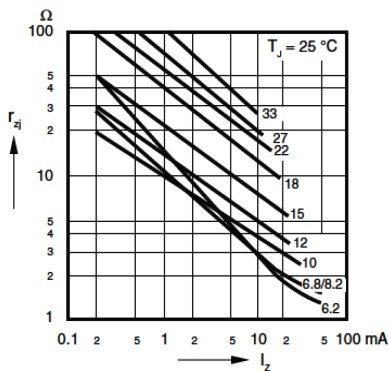
Forward Characteristics



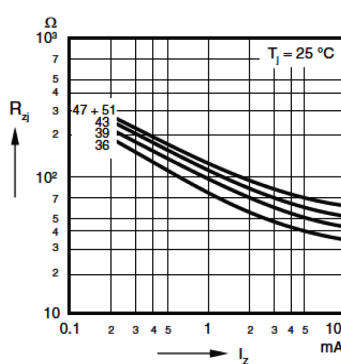
Admissible Power Dissipation Vs. Ambient Temperature



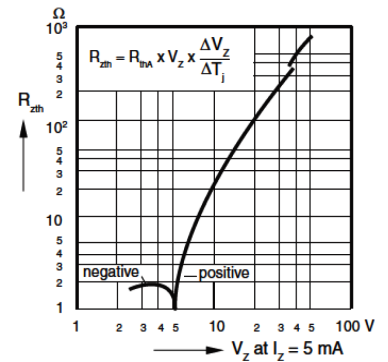
Dynamic Resistance Vs. Zener Current



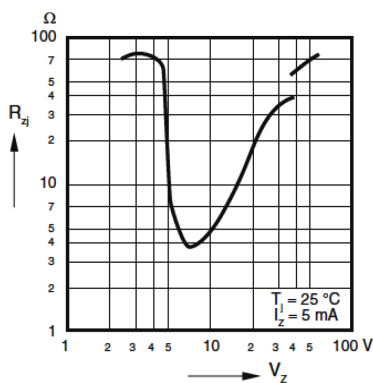
Dynamic Resistance Vs. Zener Current



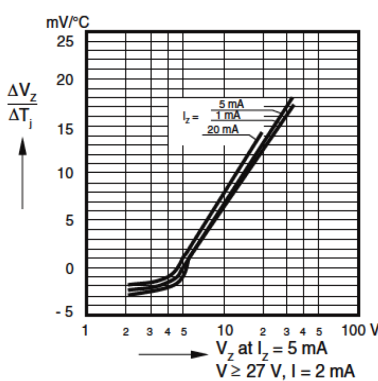
Dynamic Resistance Vs. Zener Current



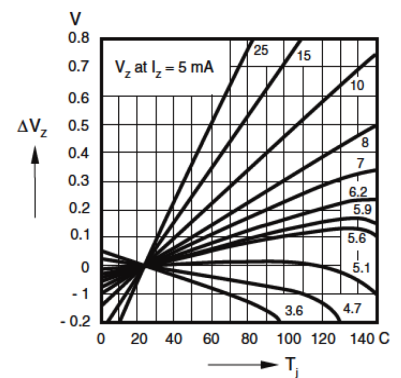
Thermal Differential Resistance Vs. Zener Voltage



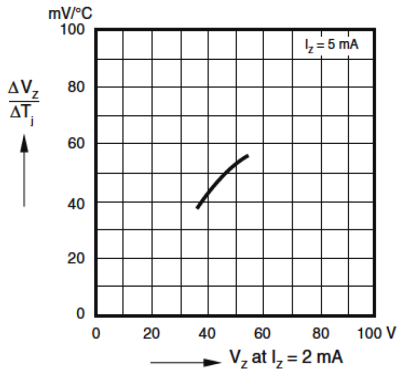
Dynamic Resistance Vs. Zener Voltage



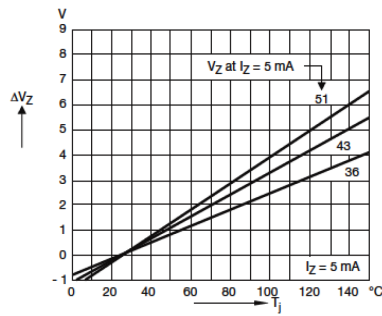
Temperature Dependence of Zener Voltage Vs. Zener Voltage



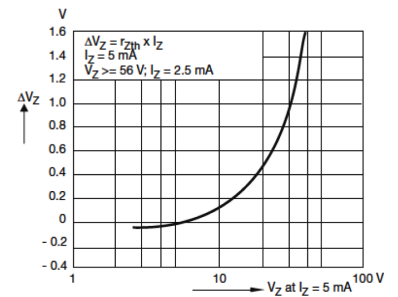
Change of Zener Voltage Vs. Junction Temperature



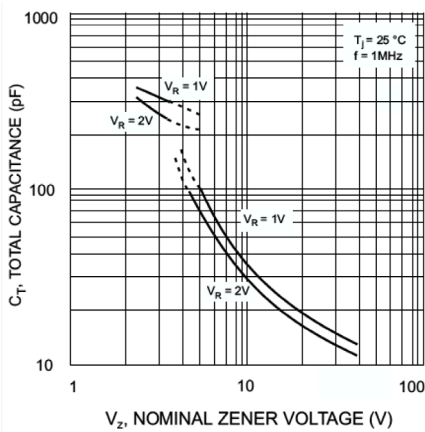
Temperature Dependence of Zener Voltage Vs. Zener Voltage



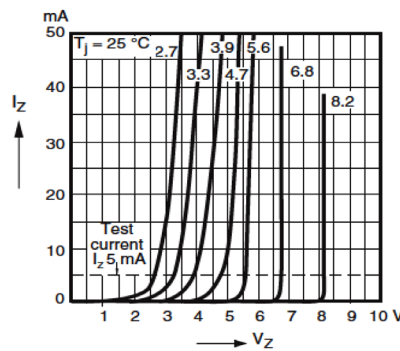
Change of Zener Voltage Vs. Junction Temperature



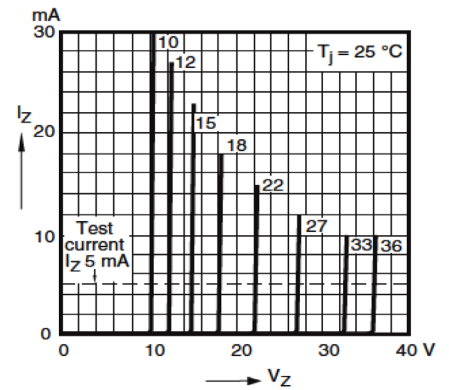
Change of Zener Voltage from Turn-on up to the point of Thermal Equilibrium Vs. Zener Voltage



Total capacitance Vs Nominal Zener Voltage



Breakdown Characteristics



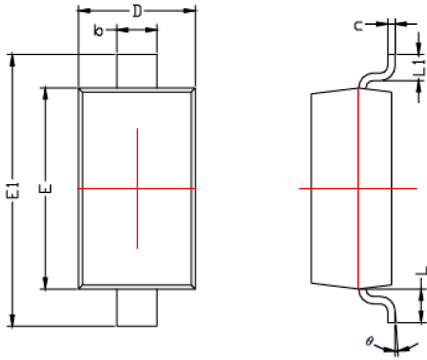
Breakdown Characteristics

Zener Diode



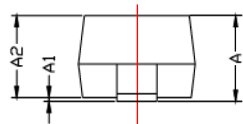
Dimensions:

SOD-123



| Symbol | Dimensions | |
|--------|------------|------|
| | Min. | Max. |
| A | 1.02 | 1.25 |
| A1 | 0 | 0.1 |
| A2 | 1.05 | 1.15 |
| b | 0.45 | 0.65 |
| c | 0.08 | 0.15 |
| D | 1.5 | 1.7 |

| Symbol | Dimensions | |
|----------|------------|------|
| | Min. | Max. |
| E | 2.6 | 2.8 |
| E1 | 3.55 | 3.85 |
| L | 0.5 REF | |
| L1 | 0.25 | 0.45 |
| θ | 0° | 8° |



Dimensions : Millimetres

Part Number Table

| Description | Part Number |
|-----------------------------------|-------------|
| Zener - Single 500mW 10V SOD-123 | BZT52C10+ |
| Zener - Single 500mW 18V SOD-123 | BZT52C18+ |
| Zener - Single 500mW 33V SOD-123 | BZT52C33+ |
| Zener - Single 500mW 3.9V SOD-123 | BZT52C3V9+ |
| Zener - Single 500mW 4.7V SOD-123 | BZT52C4V7+ |
| Zener - Single 500mW 5.1V SOD-123 | BZT52C5V1+ |

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