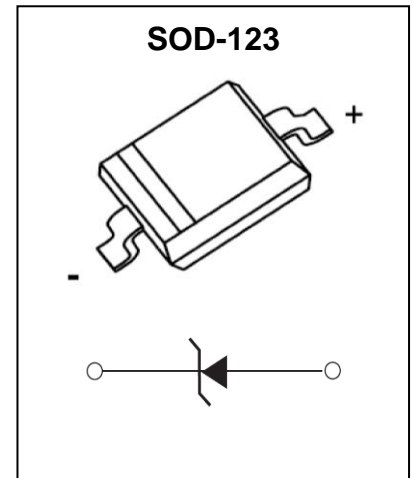




BZT52B Series ZENER DIODE

Feature

- Planar Die Construction
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Available in Lead Free Version



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|------------|--------------------|
| Power Dissipation (Note1) | P_D | 0.35 | W |
| Junction Temperature | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +150 | $^{\circ}\text{C}$ |

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise noted)

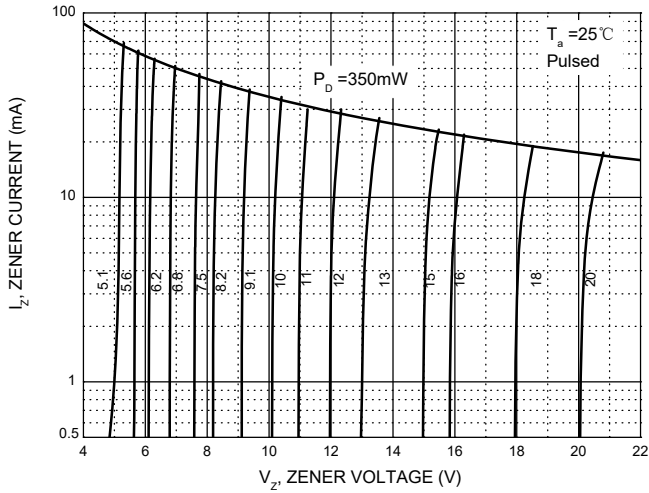
| Type Number | Type Code | Zener Voltage Range (Note 2) | | | | Maximum Zener Impedance (Note 3) | | | Maximum Reverse Current | | Typical Temperature Coefficient @IzTC | |
|-------------|-----------|------------------------------|--------|--------|-----|----------------------------------|---------|-----|-------------------------|------|---------------------------------------|------|
| | | Vz@IzT | | | IzT | ZzT@IzT | Zzk@Izk | Izk | IR | VR | mV/°C | |
| | | Nom(V) | Min(V) | Max(V) | mA | Ω | | mA | μA | V | Min | Max |
| BZT52B2V4 | 2WX/H0Z | 2.4 | 2.35 | 2.45 | 5 | 100 | 600 | 1.0 | 50 | 1.0 | -3.5 | 0 |
| BZT52B2V7 | 2W1/H1Z | 2.7 | 2.65 | 2.75 | 5 | 100 | 600 | 1.0 | 20 | 1.0 | -3.5 | 0 |
| BZT52B3V0 | 2W2/H2Z | 3.0 | 2.95 | 3.06 | 5 | 95 | 600 | 1.0 | 10 | 1.0 | -3.5 | 0 |
| BZT52B3V3 | 2W3/H3Z | 3.3 | 3.23 | 3.37 | 5 | 95 | 600 | 1.0 | 5 | 1.0 | -3.5 | 0 |
| BZT52B3V6 | 2W4/H4Z | 3.6 | 3.53 | 3.67 | 5 | 90 | 600 | 1.0 | 5 | 1.0 | -3.5 | 0 |
| BZT52B3V9 | 2W5/H5Z | 3.9 | 3.82 | 3.98 | 5 | 90 | 600 | 1.0 | 3 | 1.0 | -3.5 | 0 |
| BZT52B4V3 | 2W6/H6Z | 4.3 | 4.21 | 4.39 | 5 | 90 | 600 | 1.0 | 3 | 1.0 | -3.5 | 0 |
| BZT52B4V7 | 2W7/H7Z | 4.7 | 4.61 | 4.79 | 5 | 80 | 500 | 1.0 | 3 | 2.0 | -3.5 | 0.2 |
| BZT52B5V1 | 2W8/H8Z | 5.1 | 5.00 | 5.20 | 5 | 60 | 480 | 1.0 | 2 | 2.0 | -2.7 | 1.2 |
| BZT52B5V6 | 2W9/H9Z | 5.6 | 5.49 | 5.71 | 5 | 40 | 400 | 1.0 | 1 | 2.0 | -2.0 | 2.5 |
| BZT52B6V2 | 2WA/HAZ | 6.2 | 6.08 | 6.32 | 5 | 10 | 150 | 1.0 | 3 | 4.0 | 0.4 | 3.7 |
| BZT52B6V8 | 2WB/HBZ | 6.8 | 6.66 | 6.94 | 5 | 15 | 80 | 1.0 | 2 | 4.0 | 1.2 | 4.5 |
| BZT52B7V5 | 2WC/HCZ | 7.5 | 7.35 | 7.65 | 5 | 15 | 80 | 1.0 | 1 | 5.0 | 2.5 | 5.3 |
| BZT52B8V2 | 2WD/HDZ | 8.2 | 8.04 | 8.36 | 5 | 15 | 80 | 1.0 | 0.7 | 5.0 | 3.2 | 6.2 |
| BZT52B9V1 | 2WE/HEZ | 9.1 | 8.92 | 9.28 | 5 | 15 | 100 | 1.0 | 0.5 | 6.0 | 3.8 | 7.0 |
| BZT52B10 | 2WF/HFZ | 10 | 9.80 | 10.20 | 5 | 20 | 150 | 1.0 | 0.2 | 7.0 | 4.5 | 8.0 |
| BZT52B11 | 2WG/HGZ | 11 | 10.78 | 11.22 | 5 | 20 | 150 | 1.0 | 0.1 | 8.0 | 5.4 | 9.0 |
| BZT52B12 | 2WH/HHZ | 12 | 11.76 | 12.24 | 5 | 25 | 150 | 1.0 | 0.1 | 8.0 | 6.0 | 10.0 |
| BZT52B13 | 2WI/HJZ | 13 | 12.74 | 13.26 | 5 | 30 | 170 | 1.0 | 0.1 | 8.0 | 7.0 | 11.0 |
| BZT52B15 | 2WJ/HKZ | 15 | 14.70 | 15.30 | 5 | 30 | 200 | 1.0 | 0.1 | 10.5 | 9.2 | 13.0 |
| BZT52B16 | 2WK/HLZ | 16 | 15.68 | 16.32 | 5 | 40 | 200 | 1.0 | 0.1 | 11.2 | 10.4 | 14.0 |
| BZT52B18 | 2WL/HMZ | 18 | 17.64 | 18.36 | 5 | 45 | 225 | 1.0 | 0.1 | 12.6 | 12.4 | 16.0 |
| BZT52B20 | 2WM/HNZ | 20 | 19.60 | 20.40 | 5 | 55 | 225 | 1.0 | 0.1 | 14.0 | 14.4 | 18.0 |
| BZT52B22 | 2WN/HPZ | 22 | 21.56 | 22.44 | 5 | 55 | 250 | 1.0 | 0.1 | 15.4 | 16.4 | 20.0 |
| BZT52B24 | 2WO/HRZ | 24 | 23.52 | 24.48 | 5 | 70 | 250 | 1.0 | 0.1 | 16.8 | 18.4 | 22.0 |
| BZT52B27 | 2WP/HSZ | 27 | 26.46 | 27.54 | 5 | 80 | 300 | 1.0 | 0.1 | 18.9 | 21.4 | 25.3 |
| BZT52B30 | 2WQ/HTZ | 30 | 29.40 | 30.60 | 5 | 80 | 300 | 1.0 | 0.1 | 21.0 | 24.4 | 29.4 |
| BZT52B33 | 2WR/HUZ | 33 | 32.34 | 33.66 | 5 | 80 | 325 | 1.0 | 0.1 | 23.1 | 27.4 | 33.4 |
| BZT52B36 | 2WS/HVZ | 36 | 35.28 | 36.72 | 5 | 90 | 350 | 1.0 | 0.1 | 25.2 | 30.4 | 37.4 |
| BZT52B39 | 2WT/HWZ | 39 | 38.22 | 39.78 | 5 | 130 | 350 | 1.0 | 0.1 | 27.3 | 33.4 | 41.2 |

Notes:

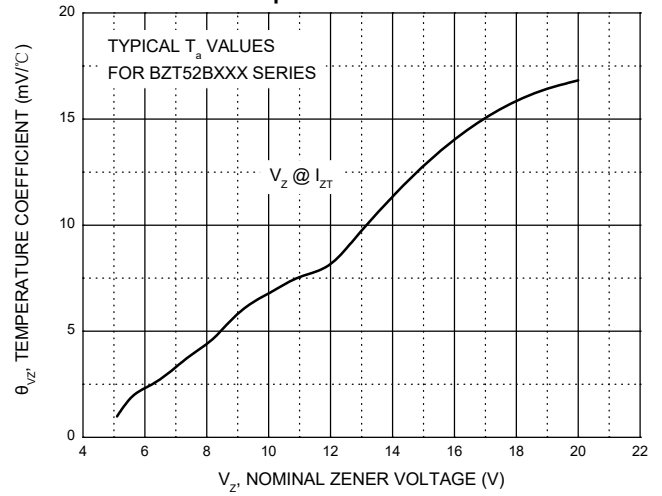
1. Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm².
2. Short duration test pulse used to minimize self-heating effect.
3. f = 1kHz.

Typical Characteristics

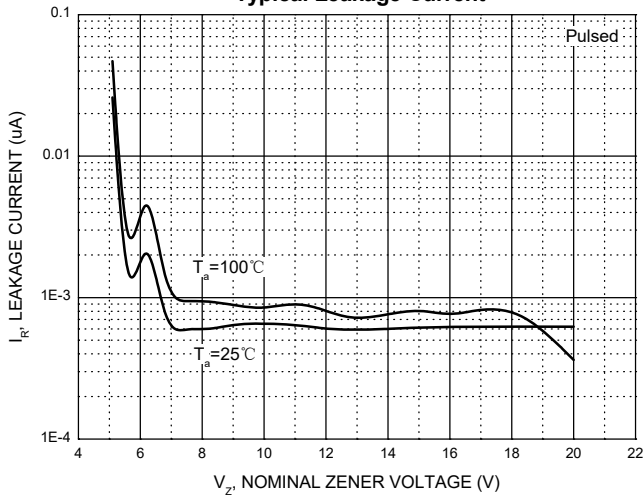
Zener Characteristics (V_z 5.1V to 20V)



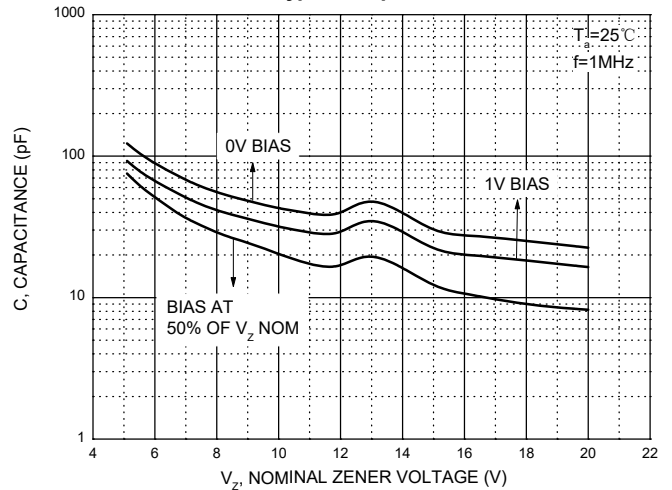
Temperature Coefficients



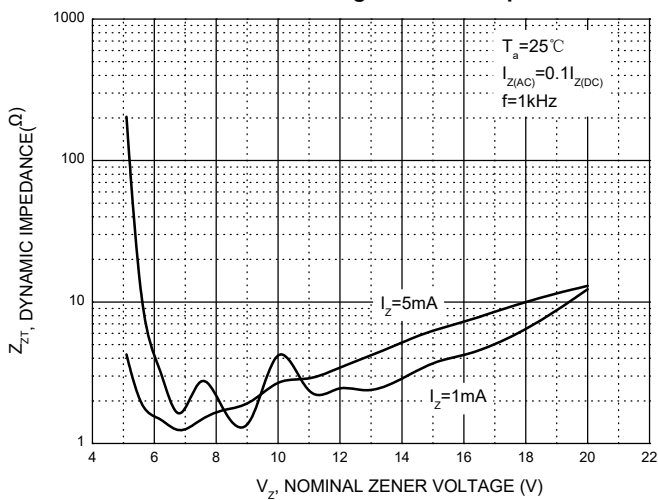
Typical Leakage Current



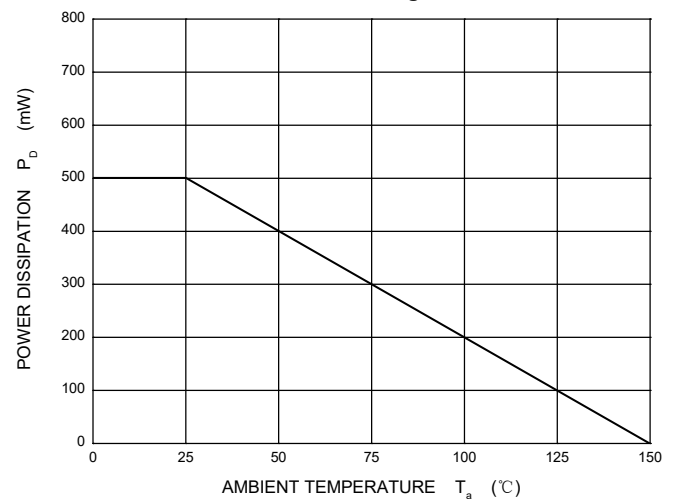
Typical Capacitance



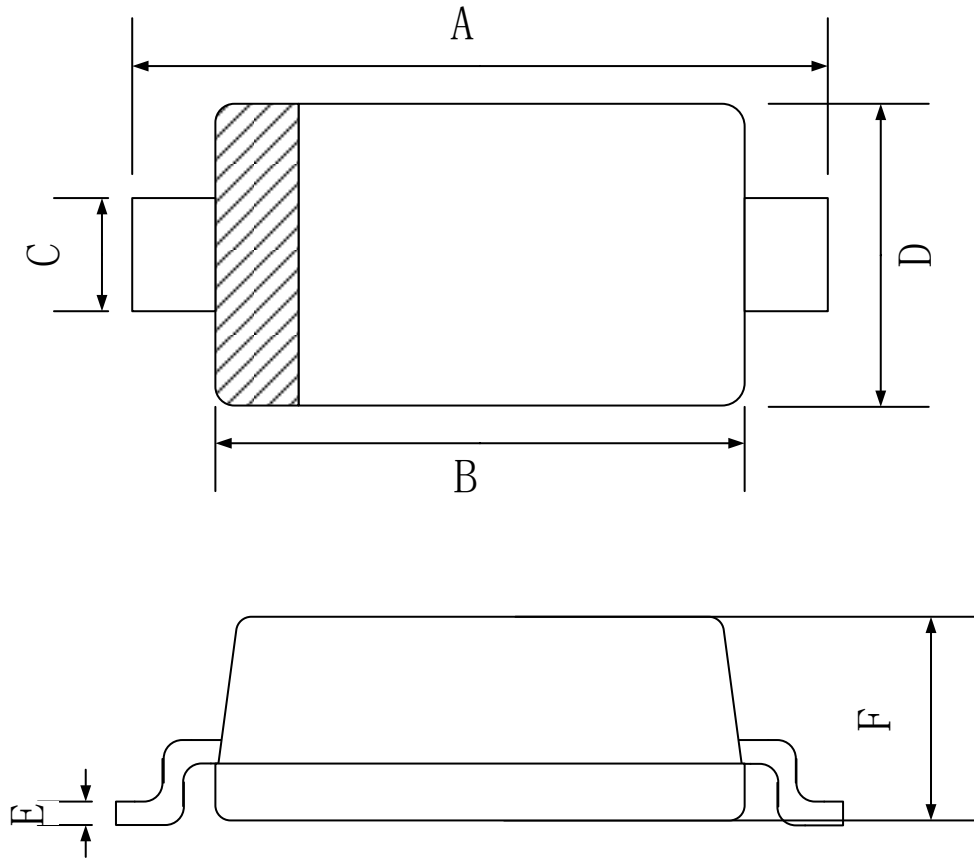
Effect of Zener Voltage on Zener Impedance



Power Derating Curve



SOD-123 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | |
|--------|---------------------------|------|------|
| | Min. | Typ. | Max. |
| A | 3.55 | 3.70 | 3.85 |
| B | 2.60 | 2.70 | 2.80 |
| C | 0.45 | 0.55 | 0.65 |
| D | 1.50 | 1.60 | 1.70 |
| E | 0.08 | 0.11 | 0.15 |
| F | 1.05 | 1.15 | 1.25 |