

400 mW Zener Diode 3.0 to 51 Volts

Features

- Standard Vz Tolerance is $\pm 2\%$
- Planar Die Construction
- 400mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant t ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

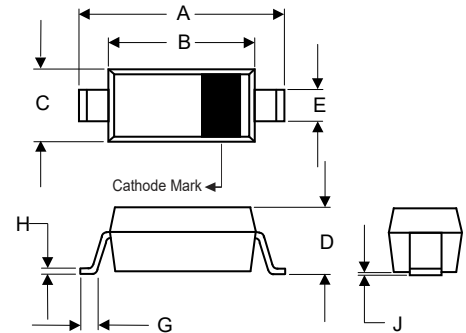
- Operating Junction Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Storage Temperature Range: -55°C to $+150^{\circ}\text{C}$
- Thermal Resistance : $313^{\circ}\text{C}/\text{W}$ Junction to Ambient

| Parameter | Symbol | Rating | Conditions |
|-------------------------|----------|--------|-------------------|
| Power Dissipation | P_D | 400mW | Note 1 |
| Maximum Forward Current | I_{FM} | 300mA | |
| Maximum Forward Voltage | V_F | 0.9V | $I_F=10\text{mA}$ |

1. P_D is based on device mounted on a printed-circuit board measuring $11 \times 25 \times 1.6 \text{ mm}$

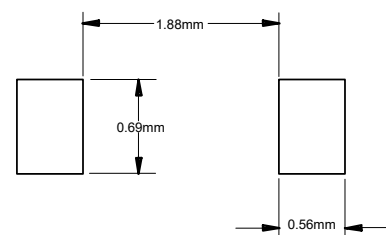
**400 mW
Zener Diode
3.0 to 51 Volts**

SOD-323



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.090 | 0.107 | 2.30 | 2.70 | |
| B | 0.063 | 0.071 | 1.60 | 1.80 | |
| C | 0.045 | 0.053 | 1.15 | 1.35 | |
| D | 0.031 | 0.045 | 0.80 | 1.15 | |
| E | 0.010 | 0.016 | 0.25 | 0.40 | |
| G | 0.004 | 0.018 | 0.10 | 0.45 | |
| H | 0.004 | 0.010 | 0.10 | 0.25 | |
| J | ---- | 0.006 | ---- | 0.15 | |

Suggested Solder Pad Layout





BZT52B3V0BS THRU BZT52B51BS

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Zener Voltage | | | Maximum Zener Impedance | | Maximum Zener Impedance | | Maximum Reverse Current $I_R(\text{Max}) @ V_R$ | | Marking Code |
|--------------------|----------------|--------|---------|-------------------------------|----------|----------------------------|----------|---|-------|-----------------|
| | $V_Z @ I_{ZT}$ | | | $Z_{ZT} @ I_{ZT}$ | I_{ZT} | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | I_R | V_R | |
| | Min.(V) | Nom(V) | Max.(V) | Ω | mA | Ω | mA | μA | V | |
| BZT52B3V0BS | 2.94 | 3.0 | 3.06 | 89 | 5.0 | 564 | 1.00 | 9.0 | 1.0 | B2Z |
| BZT52B3V3BS | 3.23 | 3.3 | 3.37 | 89 | 5.0 | 564 | 1.00 | 4.5 | 1.0 | B3Z |
| BZT52B3V6BS | 3.53 | 3.6 | 3.67 | 84 | 5.0 | 564 | 1.00 | 4.5 | 1.0 | B4Z |
| BZT52B3V9BS | 3.82 | 3.9 | 3.98 | 84 | 5.0 | 564 | 1.00 | 2.7 | 1.0 | B5Z |
| BZT52B4V3BS | 4.21 | 4.3 | 4.39 | 84 | 5.0 | 564 | 1.00 | 2.7 | 1.0 | B6Z |
| BZT52B4V7BS | 4.61 | 4.7 | 4.79 | 75 | 5.0 | 564 | 1.00 | 2.7 | 2.0 | B7Z |
| BZT52B5V1BS | 5.00 | 5.1 | 5.20 | 60 | 5.0 | 480 | 1.00 | 2.0 | 2.0 | B8Z |
| BZT52B5V6BS | 5.49 | 5.6 | 5.71 | 40 | 5.0 | 400 | 1.00 | 1.0 | 2.0 | B9Z |
| BZT52B6V2BS | 6.08 | 6.2 | 6.32 | 10 | 5.0 | 150 | 1.00 | 3.0 | 4.0 | BAZ |
| BZT52B6V8BS | 6.66 | 6.8 | 6.94 | 15 | 5.0 | 141 | 1.00 | 2.0 | 4.0 | BBZ |
| BZT52B7V5BS | 7.35 | 7.5 | 7.65 | 15 | 5.0 | 80 | 1.00 | 1.0 | 5.0 | BCZ |
| BZT52B8V2BS | 8.04 | 8.2 | 8.36 | 15 | 5.0 | 80 | 1.00 | 0.7 | 5.0 | BDZ |
| BZT52B9V1BS | 8.92 | 9.1 | 9.28 | 15 | 5.0 | 100 | 1.00 | 0.5 | 6.0 | BEZ |
| BZT52B10BS | 9.80 | 10 | 10.20 | 20 | 5.0 | 150 | 1.00 | 0.2 | 7.0 | BFZ |
| BZT52B11BS | 10.78 | 11 | 11.22 | 20 | 5.0 | 150 | 1.00 | 0.1 | 8.0 | BGZ |
| BZT52B12BS | 11.76 | 12 | 12.24 | 25 | 5.0 | 150 | 1.00 | 0.1 | 8.0 | BHZ |
| BZT52B13BS | 12.74 | 13 | 13.26 | 30 | 5.0 | 170 | 1.00 | 0.1 | 8.0 | BJZ |
| BZT52B15BS | 14.70 | 15 | 15.30 | 30 | 5.0 | 200 | 1.00 | 0.1 | 10.5 | BKZ |
| BZT52B16BS | 15.68 | 16 | 16.32 | 40 | 5.0 | 200 | 1.00 | 0.1 | 11.2 | BLZ |
| BZT52B18BS | 17.64 | 18 | 18.36 | 45 | 5.0 | 225 | 1.00 | 0.1 | 12.6 | BMZ |
| BZT52B20BS | 19.60 | 20 | 20.40 | 55 | 5.0 | 225 | 1.00 | 0.1 | 14.0 | BNZ |
| BZT52B22BS | 21.56 | 22 | 22.44 | 51 | 5.0 | 235 | 1.00 | 0.045 | 15.4 | BPZ |
| BZT52B24BS | 23.52 | 24 | 24.48 | 65 | 5.0 | 235 | 1.00 | 0.045 | 16.8 | BRZ |
| BZT52B27BS | 26.46 | 27 | 27.54 | 75 | 5.0 | 282 | 0.50 | 0.045 | 18.9 | BSZ |
| BZT52B30BS | 29.40 | 30 | 30.60 | 75 | 5.0 | 282 | 0.50 | 0.045 | 21.0 | BTZ |
| BZT52B33BS | 32.34 | 33 | 33.66 | 75 | 5.0 | 306 | 0.50 | 0.045 | 23.0 | BUZ |
| BZT52B36BS | 35.28 | 36 | 36.72 | 84 | 5.0 | 329 | 0.50 | 0.045 | 25.2 | BVZ |
| BZT52B39BS | 38.22 | 39 | 39.78 | 122 | 5.0 | 329 | 0.50 | 0.045 | 27.3 | BWZ |
| BZT52B43BS | 42.14 | 43 | 43.86 | 141 | 5.0 | 353 | 0.50 | 0.045 | 30.1 | BXZ |
| BZT52B47BS | 46.06 | 47 | 47.94 | 160 | 5.0 | 353 | 0.50 | 0.045 | 33.0 | BYZ |
| BZT52B51BS | 49.98 | 51 | 52.02 | 169 | 5.0 | 376 | 0.50 | 0.045 | 35.7 | BZZ |

Curve Characteristics

Fig. 1 - Power Derating Curve

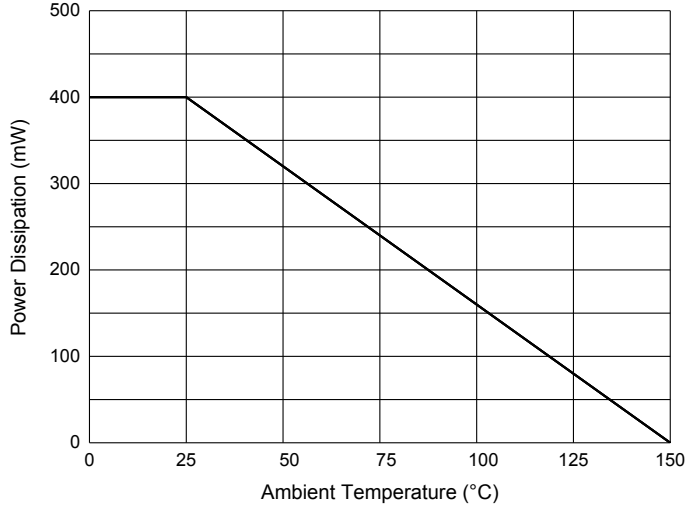


Fig. 2 - Typical Zener Breakdown Characteristics

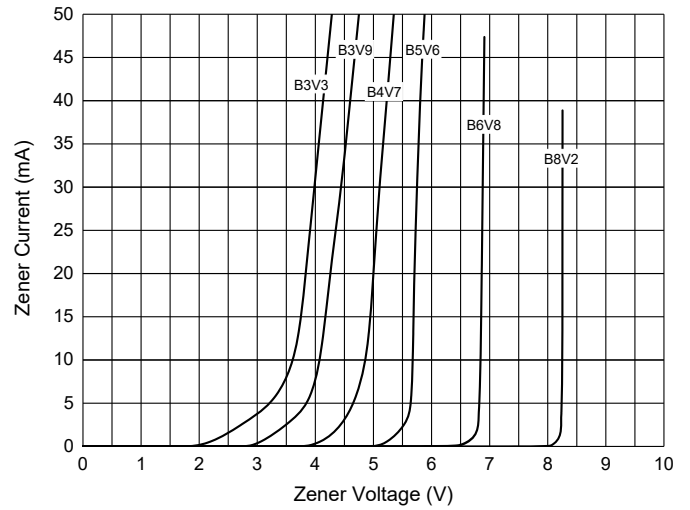
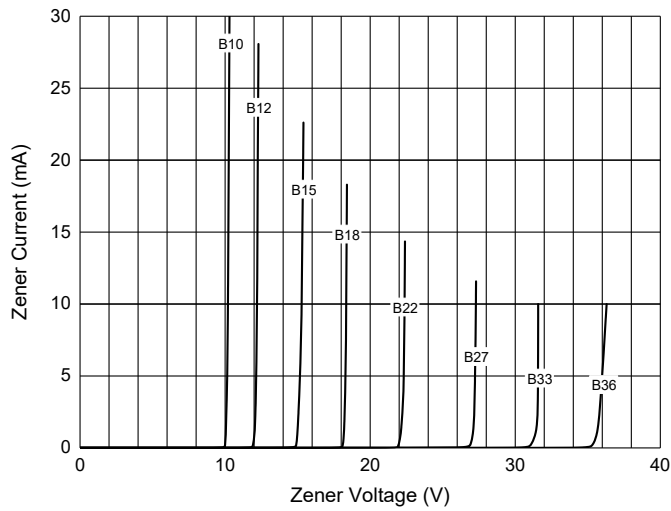


Fig. 3 - Typical Zener Breakdown Characteristics





BZT52B3V0BS THRU BZT52B51BS

Ordering Information

| Device | Packing |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF