

## 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)

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

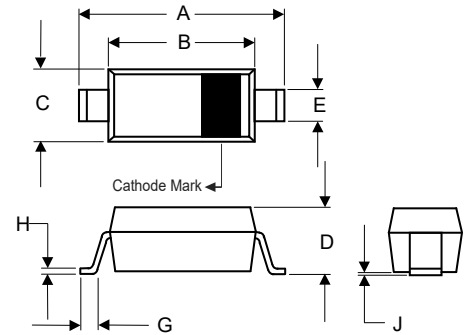
## Maximum Ratings

- Operating Junction Temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Storage Temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Thermal Resistance :  $313^{\circ}\text{C/W}$  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   | $I_F=10\text{mA}$ |

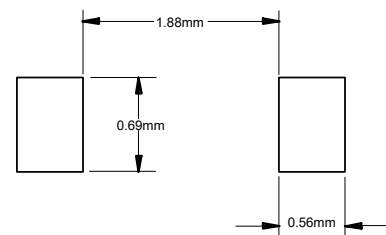
①  $P_D$  Device mounted on a printed-circuit board measuring  $11 \times 25 \times 1.6 \text{ mm}$

## SOD-323



| DIM | DIMENSIONS |       |      |      | NOTE |
|-----|------------|-------|------|------|------|
|     | INCHES     |       | MM   |      |      |
|     | 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-BZT52B51BS

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC<br>Part Number | Zener Voltage  |        |         | Maximum<br>Zener<br>Impedance |          | Maximum<br>Zener Impedance |          | Maximum<br>Reverse Current<br>$I_R(\text{Max}) @ V_R$ |       | Marking<br>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) | $\Omega$                      | mA       | $\Omega$                   | mA       | $\mu\text{A}$                                         | 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

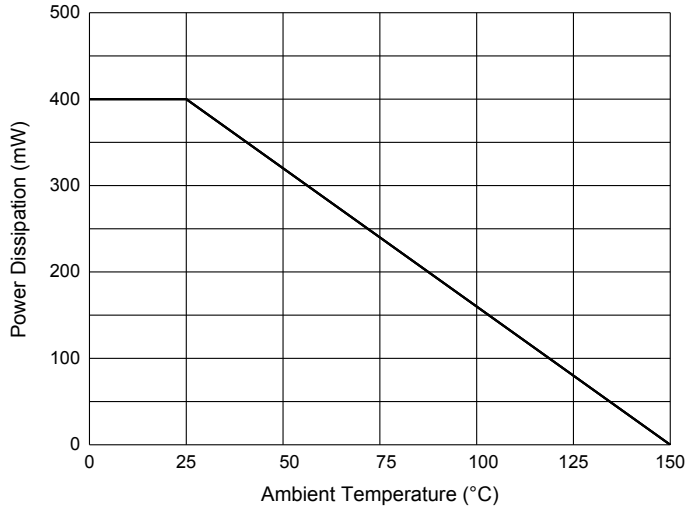


Fig. 2 - Typical Zener Breakdown Characteristics

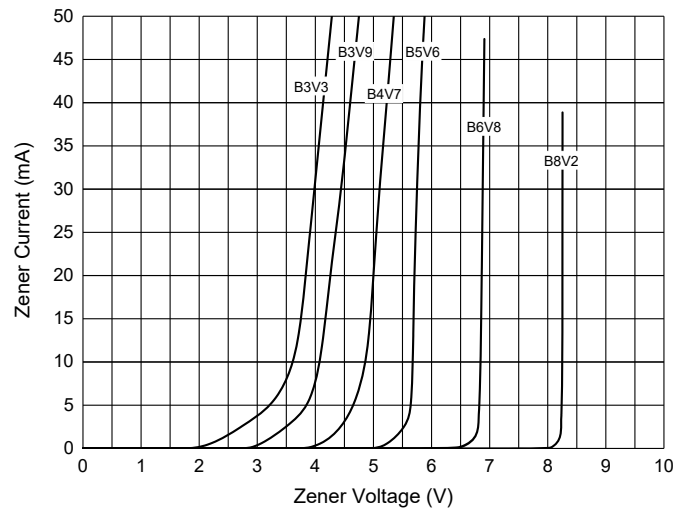
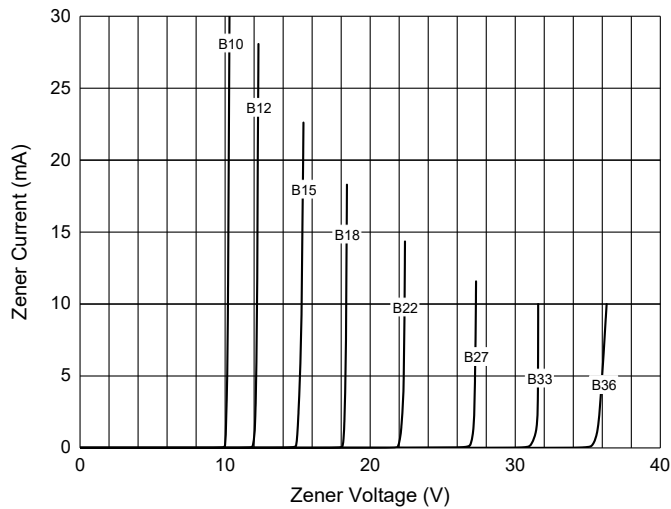


Fig. 3 - Typical Zener Breakdown Characteristics



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