

## Features

- Standard Vz Tolerance is  $\pm 2\%$
- Planar Die Construction
- Ideally Suited for Automated Assembly Processes
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## 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 :  $304^{\circ}\text{C/W}$  Junction to Ambient (Note2)
- Thermal Resistance :  $250^{\circ}\text{C/W}$  Junction to Ambient (Note3)

| Parameter               | Symbol | Rating | Conditions                                                       |
|-------------------------|--------|--------|------------------------------------------------------------------|
| Power Dissipation       | $P_D$  | 410mW  | Diode on Ceramic Substrate 0.7 mm, 2.5 mm <sup>2</sup> Pad Areas |
| Power Dissipation       | $P_D$  | 500mW  | Diode on Ceramic Substrate 0.7 mm, 5 mm <sup>2</sup> Pad Areas   |
| Maximum Forward Voltage | $V_F$  | 0.9V   | $I_F=10\text{mA}$                                                |

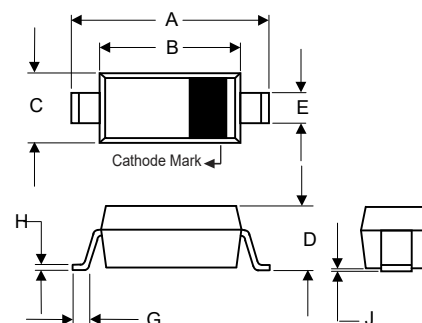
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Note: 2. Diode on Ceramic Substrate 0.7 mm, 2.5 mm<sup>2</sup> Pad Areas.

Note: 3. Diode on Ceramic Substrate 0.7 mm, 5 mm<sup>2</sup> Pad Areas.

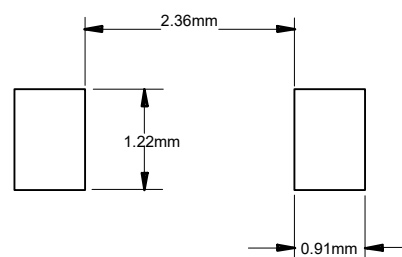
**500 mW  
Zener Diode  
2.4 to 75 Volts**

## SOD-123



| DIMENSIONS |        |       |      |      |      |
|------------|--------|-------|------|------|------|
| DIM        | INCHES |       | MM   |      | NOTE |
|            | MIN    | MAX   | MIN  | MAX  |      |
| A          | 0.140  | 0.152 | 3.55 | 3.85 |      |
| B          | 0.100  | 0.112 | 2.55 | 2.85 |      |
| C          | 0.055  | 0.071 | 1.40 | 1.80 |      |
| D          | ----   | 0.053 | ---- | 1.35 |      |
| E          | 0.018  | 0.026 | 0.45 | 0.65 |      |
| G          | 0.006  | ----  | 0.15 | ---- |      |
| H          | ----   | 0.010 | ---- | 0.25 |      |
| J          | ----   | 0.006 | ---- | 0.15 |      |

## SUGGESTED SOLDER PAD LAYOUT



# Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC<br>Part Number | Zener Voltage                    |        |         | Maximum Zener Impedance <sup>(4)</sup> |                 |                 |                 | Reverse<br>Current   |                | Marking Code |
|--------------------|----------------------------------|--------|---------|----------------------------------------|-----------------|-----------------|-----------------|----------------------|----------------|--------------|
|                    | V <sub>Z</sub> @ I <sub>ZT</sub> |        |         | Z <sub>ZT</sub>                        | I <sub>ZT</sub> | Z <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> (Max) | V <sub>R</sub> |              |
|                    | Min.(V)                          | Nom(V) | Max.(V) | Ω                                      | mA              | Ω               | mA              | μA                   | V              |              |
| BZT52B2V4          | 2.35                             | 2.4    | 2.45    | 85                                     | 5               | 600             | 1               | 100                  | 1.0            | 2WX          |
| BZT52B2V7          | 2.64                             | 2.7    | 2.75    | 83                                     | 5               | 600             | 1               | 75                   | 1.0            | 2W1          |
| BZT52B3V0          | 2.94                             | 3.0    | 3.06    | 95                                     | 5               | 600             | 1               | 50                   | 1.0            | 2W2          |
| BZT52B3V3          | 3.23                             | 3.3    | 3.37    | 95                                     | 5               | 600             | 1               | 25                   | 1.0            | 2W3          |
| BZT52B3V6          | 3.52                             | 3.6    | 3.67    | 95                                     | 5               | 600             | 1               | 15                   | 1.0            | 2W4          |
| BZT52B3V9          | 3.82                             | 3.9    | 3.98    | 95                                     | 5               | 600             | 1               | 10                   | 1.0            | 2W5          |
| BZT52B4V3          | 4.21                             | 4.3    | 4.39    | 95                                     | 5               | 600             | 1               | 5                    | 1.0            | 2W6          |
| BZT52B4V7          | 4.61                             | 4.7    | 4.79    | 78                                     | 5               | 500             | 1               | 5                    | 2.0            | 2W7          |
| BZT52B5V1          | 5.0                              | 5.1    | 5.2     | 60                                     | 5               | 480             | 1               | 0.1                  | 0.8            | 2W8          |
| BZT52B5V6          | 5.49                             | 5.6    | 5.71    | 40                                     | 5               | 400             | 1               | 0.1                  | 1.0            | 2W9          |
| BZT52B6V2          | 6.08                             | 6.2    | 6.32    | 10                                     | 5               | 150             | 1               | 0.1                  | 2.0            | 2WA          |
| BZT52B6V8          | 6.66                             | 6.8    | 6.94    | 8                                      | 5               | 80              | 1               | 0.1                  | 3.0            | 2WB          |
| BZT52B7V5          | 7.35                             | 7.5    | 7.65    | 7                                      | 5               | 80              | 1               | 0.1                  | 5.0            | 2WC          |
| BZT52B8V2          | 8.04                             | 8.2    | 8.36    | 7                                      | 5               | 80              | 1               | 0.1                  | 6.0            | 2WD          |
| BZT52B9V1          | 8.92                             | 9.1    | 9.28    | 10                                     | 5               | 100             | 1               | 0.1                  | 7.0            | 2WE          |
| BZT52B10           | 9.80                             | 10     | 10.2    | 15                                     | 5               | 150             | 1               | 0.1                  | 7.5            | 2WF          |
| BZT52B11           | 10.78                            | 11     | 11.22   | 20                                     | 5               | 150             | 1               | 0.1                  | 8.5            | 2WG          |
| BZT52B12           | 11.76                            | 12     | 12.24   | 20                                     | 5               | 150             | 1               | 0.1                  | 9.0            | 2WH          |
| BZT52B13           | 12.74                            | 13     | 13.3    | 25                                     | 5               | 170             | 1               | 0.1                  | 10.0           | 2WI          |
| BZT52B15           | 14.7                             | 15     | 15.3    | 30                                     | 5               | 200             | 1               | 0.1                  | 11.0           | 2WJ          |
| BZT52B16           | 15.68                            | 16     | 16.3    | 40                                     | 5               | 200             | 1               | 0.1                  | 12.0           | 2WK          |
| BZT52B18           | 17.6                             | 18     | 18.4    | 50                                     | 5               | 225             | 1               | 0.1                  | 14.0           | 2WL          |
| BZT52B20           | 19.6                             | 20     | 20.4    | 50                                     | 5               | 225             | 1               | 0.1                  | 15.0           | 2WM          |
| BZT52B22           | 21.56                            | 22     | 22.44   | 55                                     | 5               | 250             | 1               | 0.1                  | 17.0           | 2WN          |
| BZT52B24           | 23.52                            | 24     | 24.5    | 70                                     | 5               | 250             | 1               | 0.1                  | 18.0           | WR           |
| BZT52B27           | 26.46                            | 27     | 27.54   | 80                                     | 2               | 300             | 1               | 0.1                  | 20.0           | 2WP          |
| BZT52B30           | 29.4                             | 30     | 30.6    | 80                                     | 2               | 300             | 1               | 0.1                  | 22.5           | WT           |
| BZT52B33           | 32.34                            | 33     | 33.7    | 80                                     | 2               | 325             | 1               | 0.1                  | 25.0           | 2WR          |
| BZT52B36           | 35.28                            | 36     | 36.72   | 90                                     | 2               | 350             | 1               | 0.1                  | 27.0           | 2WS          |
| BZT52B39           | 38.22                            | 39     | 39.8    | 90                                     | 2               | 350             | 1               | 0.1                  | 29.0           | 2WT          |
| BZT52B43           | 42.14                            | 43     | 43.86   | 100                                    | 2               | 375             | 1               | 0.1                  | 32.0           | 2WU          |
| BZT52B47           | 46.06                            | 47     | 47.94   | 100                                    | 2               | 375             | 1               | 0.1                  | 35.0           | 2WV          |
| BZT52B51           | 49.98                            | 51     | 52.02   | 100                                    | 2               | 400             | 1               | 0.1                  | 38.0           | 2X1          |
| BZT52B56           | 54.88                            | 56     | 57.12   | 135                                    | 2               | 1000            | 1               | 0.1                  | 42.0           | 2X2          |
| BZT52B62           | 60.76                            | 62     | 63.24   | 150                                    | 2               | 1000            | 1               | 0.1                  | 46.0           | X3           |
| BZT52B68           | 66.64                            | 68     | 69.36   | 200                                    | 2               | 1000            | 1               | 0.1                  | 51.0           | X4           |
| BZT52B75           | 73.50                            | 75     | 76.50   | 250                                    | 2               | 1000            | 1               | 0.1                  | 56.0           | 2X5          |

Note : 4. f=1KHz

## Curve Characteristics

Fig. 1 - Power Derating Curve

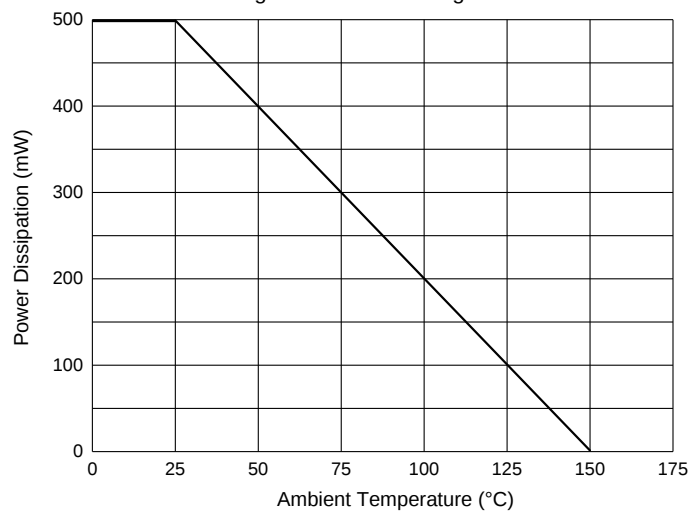


Fig. 2 - Typical Zener Breakdown Characteristics

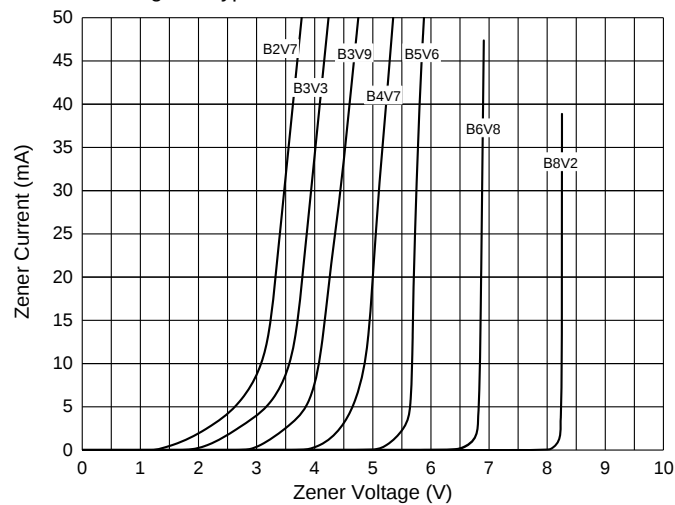


Fig. 3 - Typical Zener Breakdown Characteristics

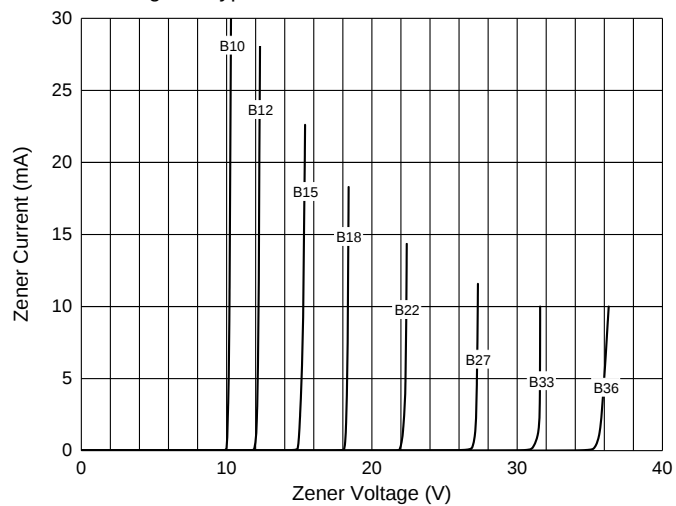
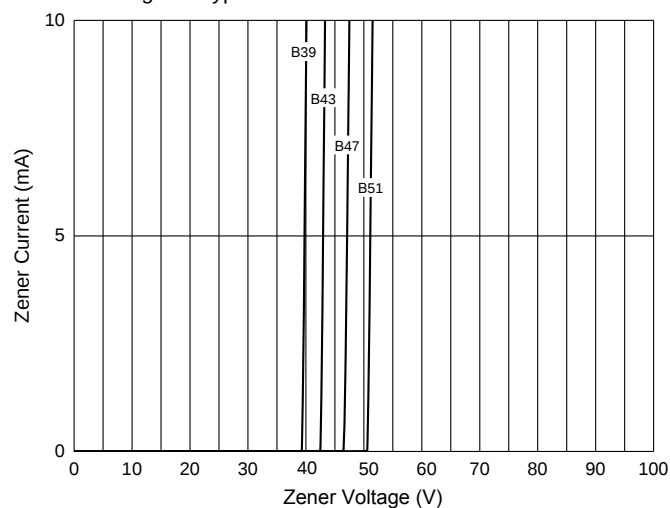


Fig. 4 - Typical Zener Breakdown Characteristics



## Ordering Information

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

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