## Features

- Planar Die Construction
- General Purpose Medium Current
- 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)

# 500 mW Zener Diode 2.4 to 75 Volts

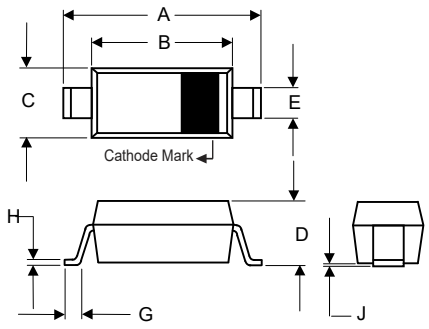
## Maximum Ratings

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Thermal Resistance : 250°C/W Junction to Ambient

| Parameter | Symbol | Rating | Conditions |
|---|---|---|---|
| Power Dissipation | $P_D$ | 500mW | |
| Maximum Forward Voltage | $V_F$ | 0.9V | $I_F$=10mA |

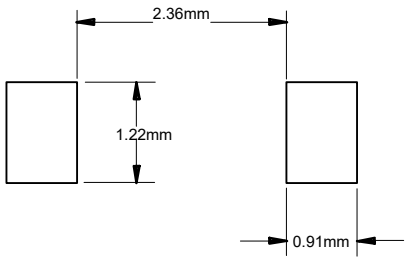
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

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 | 0.067 | 1.40 | 1.70 | |
| D | ---- | 0.053 | ---- | 1.35 | |
| E | 0.018 | 0.026 | 0.45 | 0.65 | |
| G | 0.006 | 0.018 | 0.15 | 0.45 | |
| H | ---- | 0.010 | ---- | 0.25 | |
| J | ---- | 0.006 | ---- | 0.15 | |

**SUGGESTED SOLDER PAD LAYOUT**



## Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Zener Voltage | | | Maximum Zener Impedance(2) | | Maximum Zener Impedance(2) | | Maximum Reverse Current $I_R$(Max) @ $V_R$ | | Typical Temperature Coefficent @ $I_{ZTC}$ | | Marking Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $V_Z$ @ $I_{ZT}$ | | | $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$ | $I_{ZK}$ | $Z_{ZK}$ @ $I_{ZK}$ | $I_R$ | $V_R$ | mV/°C | | |
| | Min.(V) | Nom(V) | Max.(V) | mA | Ω | mA | Ω | μA | V | Min | Max. | |
| BZT52C2V4 | 2.28 | 2.4 | 2.56 | 5 | 100 | 1.0 | 600 | 50 | 1.0 | -3.5 | 0 | WX |
| BZT52C2V7 | 2.5 | 2.7 | 2.9 | 5 | 100 | 1.0 | 600 | 20 | 1.0 | -3.5 | 0 | W1 |
| BZT52C3V0 | 2.8 | 3.0 | 3.2 | 5 | 95 | 1.0 | 600 | 10 | 1.0 | -3.5 | 0 | W2 |
| BZT52C3V3 | 3.1 | 3.3 | 3.5 | 5 | 95 | 1.0 | 600 | 5 | 1.0 | -3.5 | 0 | W3 |
| BZT52C3V6 | 3.4 | 3.6 | 3.8 | 5 | 90 | 1.0 | 600 | 5 | 1.0 | -3.5 | 0 | W4 |
| BZT52C3V9 | 3.7 | 3.9 | 4.1 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | W5 |
| BZT52C4V3 | 4.0 | 4.3 | 4.6 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | W6 |
| BZT52C4V7 | 4.4 | 4.7 | 5.0 | 5 | 80 | 1.0 | 500 | 3 | 2.0 | -3.5 | 0.2 | W7 |
| BZT52C5V1 | 4.8 | 5.1 | 5.4 | 5 | 60 | 1.0 | 480 | 2 | 2.0 | -2.7 | 1.2 | W8 |
| BZT52C5V6 | 5.2 | 5.6 | 6.0 | 5 | 40 | 1.0 | 400 | 1 | 2.0 | -2.0 | 2.5 | W9 |
| BZT52C6V2 | 5.8 | 6.2 | 6.6 | 5 | 10 | 1.0 | 150 | 3 | 4.0 | 0.4 | 3.7 | WA |
| BZT52C6V8 | 6.4 | 6.8 | 7.2 | 5 | 15 | 1.0 | 80 | 2 | 4.0 | 1.2 | 4.5 | WB |
| BZT52C7V5 | 7.0 | 7.5 | 7.9 | 5 | 15 | 1.0 | 80 | 1 | 5.0 | 2.5 | 5.3 | WC |
| BZT52C8V2 | 7.7 | 8.2 | 8.7 | 5 | 15 | 1.0 | 80 | 0.7 | 5.0 | 3.2 | 6.2 | WD |
| BZT52C9V1 | 8.5 | 9.1 | 9.6 | 5 | 15 | 1.0 | 100 | 0.5 | 6.0 | 3.8 | 7.0 | WE |
| BZT52C10 | 9.4 | 10 | 10.6 | 5 | 20 | 1.0 | 150 | 0.2 | 7.0 | 4.5 | 8.0 | WF |
| BZT52C11 | 10.4 | 11 | 11.6 | 5 | 20 | 1.0 | 150 | 0.1 | 8.0 | 5.4 | 9.0 | WG |
| BZT52C12 | 11.4 | 12 | 12.7 | 5 | 25 | 1.0 | 150 | 0.1 | 8.0 | 6.0 | 10.0 | WH |
| BZT52C13 | 12.4 | 13 | 14.1 | 5 | 30 | 1.0 | 170 | 0.1 | 8.0 | 7.0 | 11.0 | WI |
| BZT52C15 | 13.8 | 15 | 15.6 | 5 | 30 | 1.0 | 200 | 0.1 | 10.5 | 9.2 | 13.0 | WJ |
| BZT52C16 | 15.3 | 16 | 17.1 | 5 | 40 | 1.0 | 200 | 0.1 | 11.2 | 10.4 | 14.0 | WK |
| BZT52C18 | 16.8 | 18 | 19.1 | 5 | 45 | 1.0 | 225 | 0.1 | 12.6 | 12.4 | 16.0 | WL |
| BZT52C20 | 18.8 | 20 | 21.2 | 5 | 55 | 1.0 | 225 | 0.1 | 14.0 | 14.4 | 18.0 | WM |
| BZT52C22 | 20.8 | 22 | 23.3 | 5 | 55 | 1.0 | 250 | 0.1 | 15.4 | 16.4 | 20.0 | WN |
| BZT52C24 | 22.8 | 24 | 25.6 | 5 | 70 | 1.0 | 250 | 0.1 | 16.8 | 18.4 | 22.0 | WO |
| BZT52C27 | 25.1 | 27 | 28.9 | 2 | 80 | 0.5 | 300 | 0.1 | 18.9 | 21.4 | 25.3 | WP |
| BZT52C30 | 28 | 30 | 32 | 2 | 80 | 0.5 | 300 | 0.1 | 21.0 | 24.4 | 29.4 | WQ |
| BZT52C33 | 31 | 33 | 35 | 2 | 80 | 0.5 | 325 | 0.1 | 23.1 | 27.4 | 33.4 | WR |
| BZT52C36 | 34 | 36 | 38 | 2 | 90 | 0.5 | 350 | 0.1 | 25.2 | 30.4 | 37.4 | WS |
| BZT52C39 | 37 | 39 | 41 | 2 | 130 | 0.5 | 350 | 0.1 | 27.3 | 33.4 | 41.2 | WT |
| BZT52C43 | 40 | 43 | 46 | 5 | 100 | 1.0 | 700 | 0.1 | 32.0 | 10.0 | 12.0 | WU |
| BZT52C47 | 44 | 47 | 50 | 5 | 100 | 1 | 750 | 0.1 | 35 | 10 | 12 | WV |
| BZT52C51 | 48 | 51 | 54 | 5 | 100 | 1 | 750 | 0.1 | 38 | 10 | 12 | WW |
| BZT52C56 | 53 | 56 | 59 | 2 | 200 | 1 | 1000 | 0.1 | 42 | 33.4 | 41.2 | X1 |
| BZT52C62 | 59 | 62 | 65 | 2 | 150 | 1 | 1000 | 0.1 | 46 | 10 | 12 | 5X2 |
| BZT52C68 | 64.6 | 68 | 71.4 | 2 | 200 | 1 | 1000 | 0.1 | 51 | 10 | 12 | 5X3 |
| BZT52C75 | 71 | 75 | 79 | 2 | 250 | 1 | 1000 | 0.1 | 56 | 10 | 12 | 5X4 |

Note : 2. f=1KHz

## Curve Characteristics

Fig. 1 - Power Derating Curve

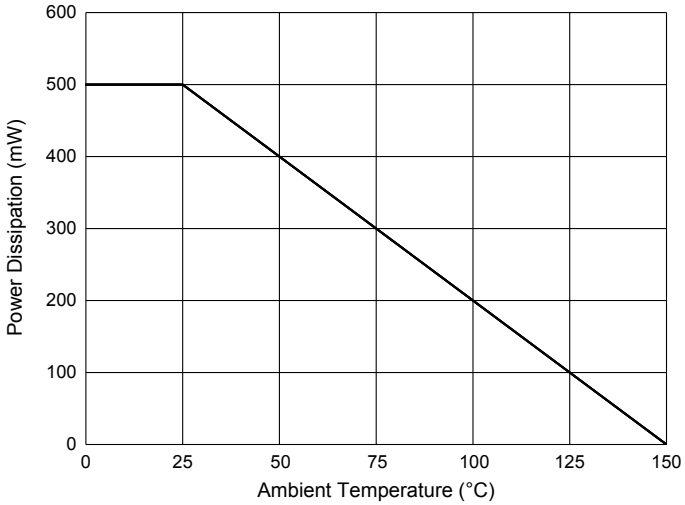



Fig. 2 - Typical Zener Breakdown Characteristics

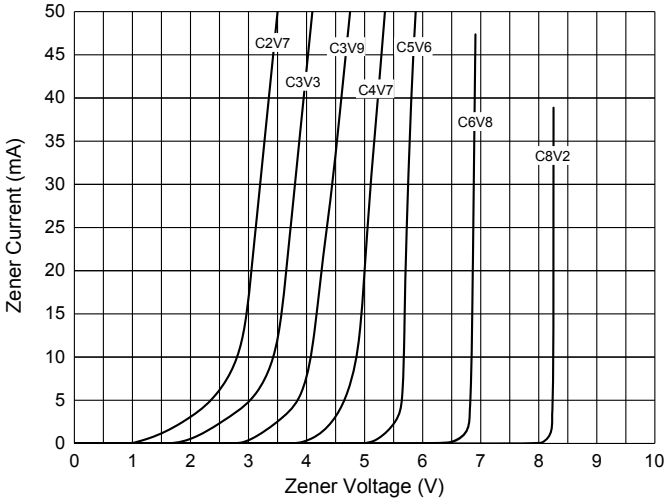



Fig. 3 - Typical Zener Breakdown Characteristics

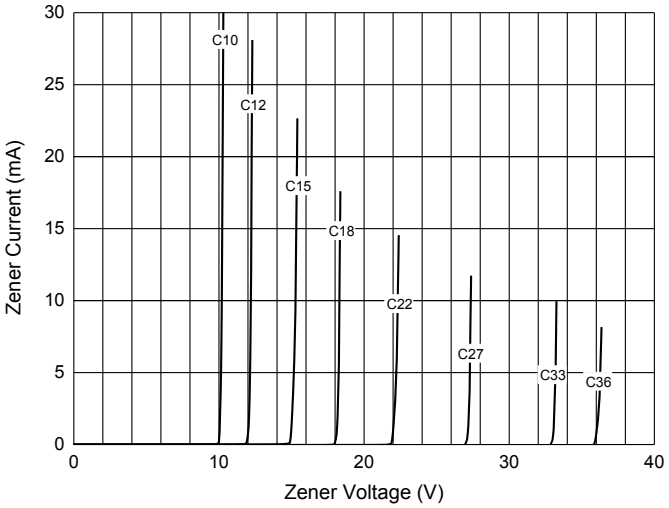
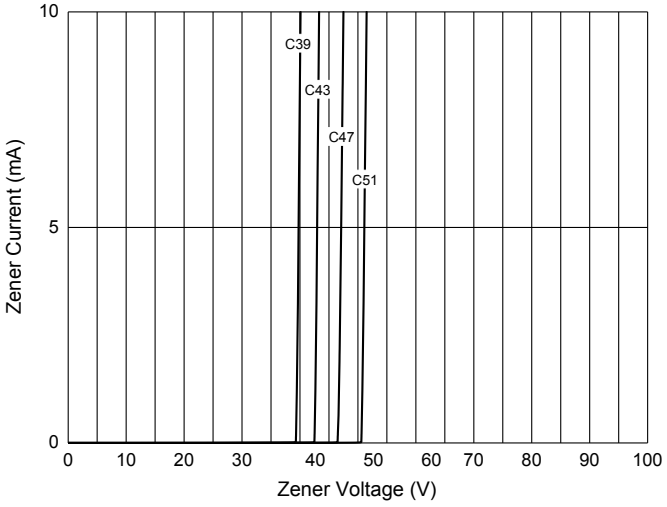



Fig. 4 - Typical Zener Breakdown Characteristics



## Ordering Information

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

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