

Features

- Standard Vz Tolerance is $\pm 2\%$
- Planar Die Construction
- Zener Voltages from 2.4V - 39V
- 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 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(Note 2) : 833°C/W Junction to Ambient

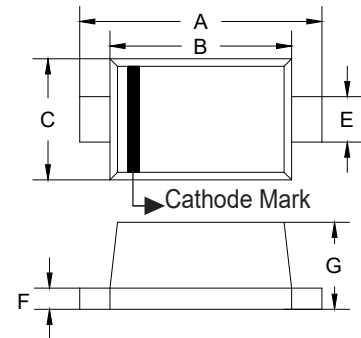
| Parameter | Symbol | Rating | Conditions |
|-------------------------|--------|--------|-------------------|
| Power Dissipation | P_D | 150mW | Note 1 |
| Maximum Forward Voltage | V_F | 0.9V | $I_F=10\text{mA}$ |

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. Valid provided that device terminals are kept at ambient temperature and mounted on Suggested Pad Layout.

150 mWatt Zener Diodes 2.4 to 39 Volts

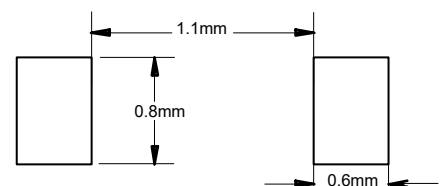
SOD-523



DIMENSIONS

| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.059 | 0.067 | 1.50 | 1.70 | |
| B | 0.043 | 0.051 | 1.10 | 1.30 | |
| C | 0.030 | 0.033 | 0.75 | 0.85 | |
| E | 0.010 | 0.014 | 0.25 | 0.35 | |
| F | 0.003 | 0.008 | 0.08 | 0.20 | |
| G | 0.020 | 0.026 | 0.50 | 0.65 | |

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Zener Voltage ⁽³⁾ | | | Maximum Zener Impedance ⁽⁴⁾ | | Maximum Zener Impedance ⁽⁴⁾ | | Maximum Reverse Current | | Typical Temperature Coefficient | | | Marking Code |
|-----------------|----------------------------------|--------|---------|--|-----------------|--|-----------------|-------------------------|----------------|---------------------------------|------|------------------|--------------|
| | V _Z @ I _{ZT} | | | I _{ZT} | Z _{ZT} | I _{ZK} | Z _{ZK} | I _R | V _R | Min | Max. | I _{ZTC} | |
| | Min.(V) | Nom(V) | Max.(V) | mA | Ω | mA | Ω | Max.(μA) | V | mV/°C | | mA | |
| BZX584B2V4 | 2.35 | 2.4 | 2.45 | 5 | 100 | 1.0 | 600 | 50 | 1.0 | -3.5 | 0 | 5 | 2V1 |
| BZX584B2V7 | 2.65 | 2.7 | 2.75 | 5 | 100 | 1.0 | 600 | 20 | 1.0 | -3.5 | 0 | 5 | 2V2 |
| BZX584B3V0 | 2.94 | 3 | 3.06 | 5 | 95 | 1.0 | 600 | 10 | 1.0 | -3.5 | 0 | 5 | 2V3 |
| BZX584B3V3 | 3.23 | 3.3 | 3.37 | 5 | 95 | 1.0 | 600 | 5 | 1.0 | -3.5 | 0 | 5 | 2V4 |
| BZX584B3V6 | 3.53 | 3.6 | 3.67 | 5 | 90 | 1.0 | 600 | 5 | 1.0 | -3.5 | 0 | 5 | 2V5 |
| BZX584B3V9 | 3.82 | 3.9 | 3.98 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | 5 | 2V6 |
| BZX584B4V3 | 4.21 | 4.3 | 4.39 | 5 | 90 | 1.0 | 600 | 3 | 1.0 | -3.5 | 0 | 5 | 2V7 |
| BZX584B4V7 | 4.61 | 4.7 | 4.79 | 5 | 80 | 1.0 | 500 | 3 | 2.0 | -3.5 | 0.2 | 5 | 2Z1 |
| BZX584B5V1 | 5.00 | 5.1 | 5.20 | 5 | 60 | 1.0 | 480 | 2 | 2.0 | -2.7 | 1.2 | 5 | 2Z2 |
| BZX584B5V6 | 5.49 | 5.6 | 5.71 | 5 | 40 | 1.0 | 400 | 1 | 2.0 | -2.0 | 2.5 | 5 | 2Z3 |
| BZX584B6V2 | 6.08 | 6.2 | 6.32 | 5 | 10 | 1.0 | 150 | 3 | 4.0 | 0.4 | 3.7 | 5 | 2Z4 |
| BZX584B6V8 | 6.66 | 6.8 | 6.94 | 5 | 15 | 1.0 | 80 | 2 | 4.0 | 1.2 | 4.5 | 5 | 2Z5 |
| BZX584B7V5 | 7.35 | 7.5 | 7.65 | 5 | 15 | 1.0 | 80 | 1 | 5.0 | 2.5 | 5.3 | 5 | 2Z6 |
| BZX584B8V2 | 8.04 | 8.2 | 8.36 | 5 | 15 | 1.0 | 80 | 0.7 | 5.0 | 3.2 | 6.2 | 5 | 2Z7 |
| BZX584B9V1 | 8.92 | 9.1 | 9.28 | 5 | 15 | 1.0 | 100 | 0.5 | 6.0 | 3.8 | 7.0 | 5 | 2Z8 |
| BZX584B10 | 9.80 | 10 | 10.20 | 5 | 20 | 1.0 | 150 | 0.2 | 7.0 | 4.5 | 8.0 | 5 | 2Z9 |
| BZX584B11 | 10.78 | 11 | 11.22 | 5 | 20 | 1.0 | 150 | 0.1 | 8.0 | 5.4 | 9.0 | 5 | 2Y1 |
| BZX584B12 | 11.76 | 12 | 12.24 | 5 | 25 | 1.0 | 150 | 0.1 | 8.0 | 6.0 | 10.0 | 5 | 2Y2 |
| BZX584B13 | 12.74 | 13 | 13.26 | 5 | 30 | 1.0 | 170 | 0.1 | 8.0 | 7.0 | 11.0 | 5 | 2Y3 |
| BZX584B15 | 14.70 | 15 | 15.30 | 5 | 30 | 1.0 | 200 | 0.1 | 10.5 | 9.2 | 13.0 | 5 | 2Y4 |
| BZX584B16 | 15.68 | 16 | 16.32 | 5 | 40 | 1.0 | 200 | 0.1 | 11.2 | 10.4 | 14.0 | 5 | 2Y5 |
| BZX584B18 | 17.64 | 18 | 18.36 | 5 | 45 | 1.0 | 225 | 0.1 | 12.6 | 12.4 | 16.0 | 5 | 2Y6 |
| BZX584B20 | 19.60 | 20 | 20.40 | 5 | 55 | 1.0 | 225 | 0.1 | 14.0 | 14.4 | 18.0 | 5 | 2Y7 |
| BZX584B22 | 21.56 | 22 | 22.44 | 5 | 55 | 1.0 | 250 | 0.1 | 15.4 | 16.4 | 20.0 | 5 | 2Y8 |
| BZX584B24 | 23.52 | 24 | 24.48 | 5 | 70 | 1.0 | 250 | 0.1 | 16.8 | 18.4 | 22.0 | 5 | 2Y9 |
| BZX584B27 | 26.46 | 27 | 27.54 | 2 | 80 | 0.5 | 300 | 0.1 | 18.9 | 21.4 | 25.3 | 5 | S5 |
| BZX584B30 | 29.40 | 30 | 30.60 | 2 | 80 | 0.5 | 300 | 0.1 | 21.0 | 24.4 | 29.4 | 5 | 2X2 |
| BZX584B33 | 32.34 | 33 | 33.66 | 2 | 80 | 0.5 | 325 | 0.1 | 23.1 | 27.4 | 33.4 | 5 | 2X3 |
| BZX584B36 | 35.28 | 36 | 36.72 | 2 | 90 | 0.5 | 350 | 0.1 | 25.2 | 30.4 | 37.4 | 5 | 2X4 |
| BZX584B39 | 38.22 | 39 | 39.78 | 2 | 130 | 0.5 | 350 | 0.1 | 27.3 | 33.4 | 41.2 | 5 | 2X5 |

Note : 3. Tested with pulses, period = 5ms, pulse width=300us

Note : 4. f=1KHz

Curve Characteristics

Fig. 1 - Power Derating Curve

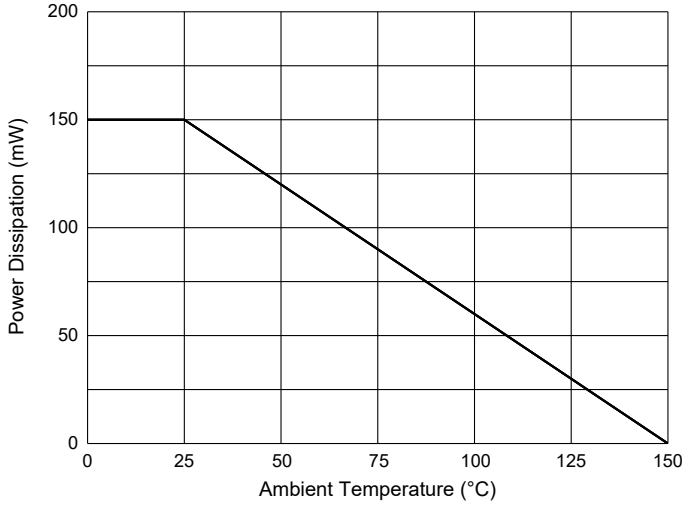


Fig. 2 - Typical Zener Breakdown Characteristics

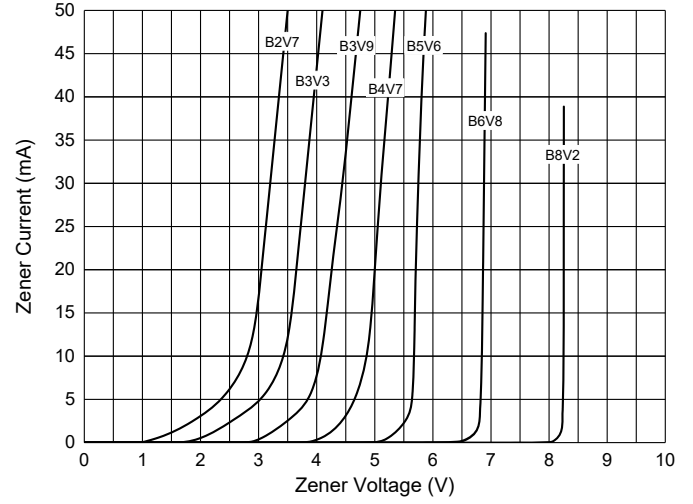
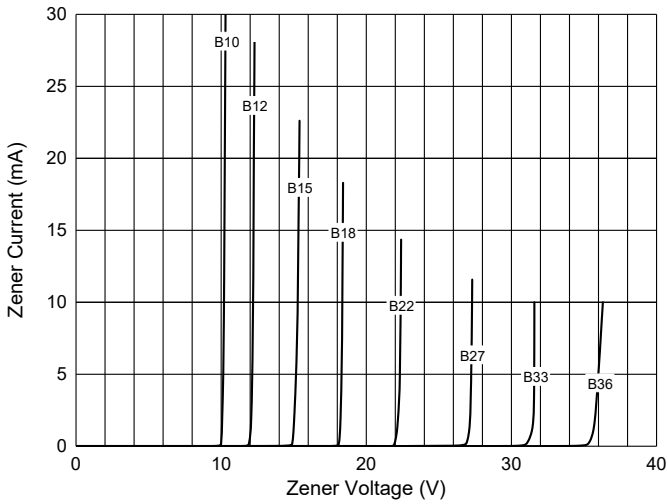


Fig. 3 - Typical Zener Breakdown Characteristics



Ordering Information

| Device | Packing |
|-----------------|----------------------|
| Part Number-TP | Tape&Reel:8Kpcs/Reel |
| Part Number-T3P | Tape&Reel:3Kpcs/Reel |

For packaging details, go to our website at <https://www.mccsemi.com/pdf/productpackaging/SOD-523%20Package.pdf>

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