

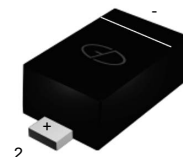
BZX584B2V0 thru BZX584B75

Surface Mount Zener Diodes

Vz Range: 2.0 to 75V Power Dissipation: 150mW

Features

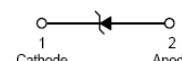
- Large selection of zener voltages: 2.0V - 75V
- Tight voltage tolerance: 2%
- Ultra low-profile package well suited for automated assembly
- MSL Class 1



SOD-523

Applications

- General voltage regulation
- Mobile & handheld systems



Schematic Diagram

Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Forward Voltage @I _F =10mA | V _F | 0.9 | V |
| Power Dissipation | P _D | 150 | mW |
| Thermal Resistance (Junction to Ambient) | R _{θJA} | 834 | °C/W |
| Junction Temperature Range | T _J | -55 To +150 | °C |
| Storage Temperature Range | T _{STG} | -65 To +150 | °C |

Note: These ratings are limiting values above which the serviceability of the diodes may be impaired.

Electrical Characteristics (T_A=25°C unless otherwise noted)

| Part Number | Marking | Zener Voltage V _Z (V) | | | @ I _{ZT} (mA) | Maximum Zener Impedance | | | Temperature Coefficient @ I _{ZT} T _C (mV/ °C) | | Maximum Reverse Current I _R (μA) | @ V _R (V) |
|-------------|---------|----------------------------------|------|------|------------------------|---------------------------------------|---------------------|------------------------|---|-----|---|----------------------|
| | | Min | Typ | Max | | Z _{ZT} (Ω) @ I _{ZT} | Z _{ZK} (Ω) | @ I _{ZK} (mA) | Min | Max | | |
| BZX584B2V0 | V0 | 1.96 | 2.00 | 2.04 | 5 | 100 | 1000 | 0.5 | -3.5 | 0.0 | 120.000 | 0.5 |
| BZX584B2V2 | V1 | 2.16 | 2.20 | 2.24 | 5 | 100 | 1000 | 0.5 | -3.5 | 0.0 | 120.000 | 0.7 |
| BZX584B2V4 | 05 | 2.35 | 2.40 | 2.45 | 5 | 100 | 564 | 1.0 | -3.5 | 0.0 | 45.000 | 1.0 |
| BZX584B2V7 | 15 | 2.65 | 2.70 | 2.75 | 5 | 100 | 564 | 1.0 | -3.5 | 0.0 | 18.000 | 1.0 |
| BZX584B3V0 | 25 | 2.94 | 3.00 | 3.06 | 5 | 100 | 564 | 1.0 | -3.5 | 0.0 | 9.000 | 1.0 |
| BZX584B3V3 | 35 | 3.23 | 3.30 | 3.37 | 5 | 95 | 564 | 1.0 | -3.5 | 0.0 | 4.500 | 1.0 |
| BZX584B3V6 | 45 | 3.53 | 3.60 | 3.67 | 5 | 90 | 564 | 1.0 | -3.5 | 0.0 | 4.500 | 1.0 |
| BZX584B3V9 | 55 | 3.82 | 3.90 | 3.98 | 5 | 90 | 564 | 1.0 | -3.5 | 0.0 | 2.700 | 1.0 |
| BZX584B4V3 | 65 | 4.21 | 4.30 | 4.39 | 5 | 90 | 564 | 1.0 | -3.5 | 0.0 | 2.700 | 1.0 |
| BZX584B4V7 | 75 | 4.61 | 4.70 | 4.79 | 5 | 80 | 470 | 1.0 | -3.5 | 0.0 | 2.700 | 2.0 |
| BZX584B5V1 | 85 | 5.00 | 5.10 | 5.20 | 5 | 60 | 451 | 1.0 | -2.7 | 1.2 | 1.800 | 2.0 |
| BZX584B5V6 | 95 | 5.49 | 5.60 | 5.71 | 5 | 40 | 376 | 1.0 | -2.0 | 2.5 | 0.900 | 2.0 |
| BZX584B6V2 | A5 | 6.08 | 6.20 | 6.32 | 5 | 10 | 141 | 1.0 | 0.4 | 3.7 | 2.700 | 4.0 |
| BZX584B6V8 | B5 | 6.66 | 6.80 | 6.94 | 5 | 15 | 75 | 1.0 | 1.2 | 4.5 | 1.800 | 4.0 |

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Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Part Number | Marking | Zener Voltage $V_Z(\text{V})$ | | | @ I_{ZT} (mA) | Maximum Zener Impedance | | | Temperature Coefficient @ I_{ZT} T_c (mV/°C) | | Maximum Reverse Current I_R (μA) | @ V_R (V) |
|-------------|---------|-------------------------------|-------|-------|-----------------|-----------------------------|------------------|-----------------|--|------|------------------------------------|-------------|
| | | Min | Typ | Max | | $Z_{ZT}(\Omega)$ @ I_{ZT} | $Z_{ZK}(\Omega)$ | @ I_{ZK} (mA) | Min | Max | | |
| BZX584B7V5 | C5 | 7.35 | 7.50 | 7.65 | 5 | 15 | 75 | 1.0 | 2.5 | 5.3 | 0.900 | 5.0 |
| BZX584B8V2 | D5 | 8.04 | 8.20 | 8.36 | 5 | 15 | 75 | 1.0 | 3.2 | 6.2 | 0.630 | 5.0 |
| BZX584B9V1 | E5 | 8.92 | 9.10 | 9.28 | 5 | 15 | 94 | 1.0 | 3.8 | 7.0 | 0.450 | 6.0 |
| BZX584B10 | F5 | 9.80 | 10.00 | 10.20 | 5 | 20 | 141 | 1.0 | 4.5 | 8.0 | 0.180 | 7.0 |
| BZX584B11 | G5 | 10.78 | 11.00 | 11.22 | 5 | 20 | 141 | 1.0 | 5.4 | 9.0 | 0.090 | 8.0 |
| BZX584B12 | H5 | 11.60 | 12.00 | 12.24 | 5 | 25 | 141 | 1.0 | 6.0 | 10.0 | 0.090 | 8.0 |
| BZX584B13 | J5 | 12.74 | 13.00 | 13.26 | 5 | 30 | 160 | 1.0 | 7.0 | 11.0 | 0.090 | 8.0 |
| BZX584B15 | K5 | 14.70 | 15.00 | 15.30 | 5 | 30 | 188 | 1.0 | 9.2 | 13.0 | 0.045 | 10.5 |
| BZX584B16 | L5 | 15.68 | 16.00 | 16.32 | 5 | 40 | 188 | 1.0 | 10.4 | 14.0 | 0.045 | 11.2 |
| BZX584B18 | M5 | 17.64 | 18.00 | 18.36 | 5 | 45 | 212 | 1.0 | 12.4 | 16.0 | 0.045 | 12.6 |
| BZX584B20 | N5 | 19.60 | 20.00 | 20.40 | 5 | 55 | 212 | 1.0 | 14.4 | 18.0 | 0.045 | 14.0 |
| BZX584B22 | P5 | 21.56 | 22.00 | 22.44 | 5 | 55 | 235 | 1.0 | 16.4 | 20.0 | 0.045 | 15.4 |
| BZX584B24 | R5 | 23.52 | 24.00 | 24.48 | 5 | 70 | 235 | 1.0 | 18.4 | 22.0 | 0.045 | 16.8 |
| BZX584B27 | S5 | 26.46 | 27.00 | 27.54 | 2 | 80 | 282 | 0.5 | 21.4 | 25.3 | 0.045 | 18.9 |
| BZX584B30 | T5 | 29.40 | 30.00 | 30.60 | 2 | 80 | 282 | 0.5 | 24.4 | 29.4 | 0.045 | 21.0 |
| BZX584B33 | U5 | 32.34 | 33.00 | 33.66 | 2 | 80 | 306 | 0.5 | 27.4 | 33.4 | 0.045 | 23.0 |
| BZX584B36 | V5 | 35.28 | 36.00 | 36.72 | 2 | 90 | 329 | 0.5 | 30.4 | 37.4 | 0.045 | 25.2 |
| BZX584B39 | X5 | 38.22 | 39.00 | 39.78 | 2 | 130 | 329 | 0.5 | 33.4 | 41.2 | 0.045 | 27.3 |
| BZX584B43 | Y5 | 42.14 | 43.00 | 43.86 | 2 | 150 | 353 | 0.5 | 37.6 | 46.6 | 0.045 | 30.1 |
| BZX584B47 | Z5 | 46.06 | 47.00 | 47.94 | 2 | 170 | 353 | 0.5 | 42.0 | 51.8 | 0.045 | 33.0 |
| BZX584B51 | -5 | 49.98 | 51.00 | 52.02 | 2 | 180 | 376 | 0.5 | 46.6 | 57.2 | 0.045 | 35.7 |
| BZX584B56 | X2• | 54.88 | 56.00 | 57.12 | 2 | 200 | 400 | 0.5 | 52.2 | 63.8 | 0.045 | 39.2 |
| BZX584B62 | X3• | 60.76 | 62.00 | 63.24 | 2 | 215 | 423 | 0.5 | 58.8 | 71.6 | 0.045 | 43.4 |
| BZX584B68 | X4• | 66.64 | 68.00 | 69.36 | 2 | 240 | 447 | 0.5 | 65.6 | 79.8 | 0.045 | 47.6 |
| BZX584B75 | X5• | 73.50 | 75.00 | 76.50 | 2 | 255 | 470 | 0.5 | 73.4 | 88.6 | 0.045 | 52.5 |

Typical Electrical Characteristic Curves

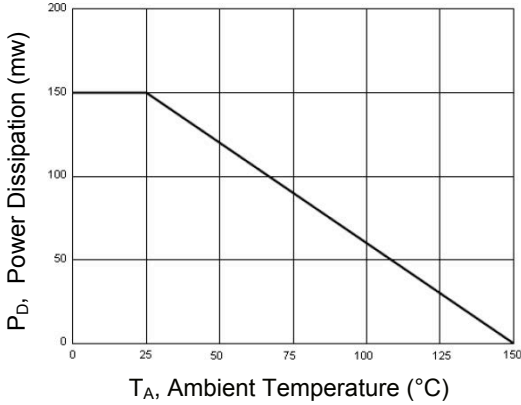


Figure 1. Power Derating Curve

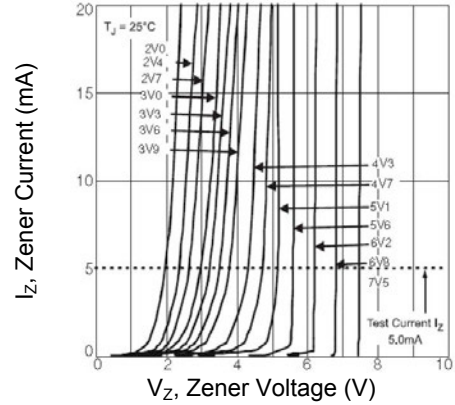


Figure 2. Typical Zener Breakdown Characteristics

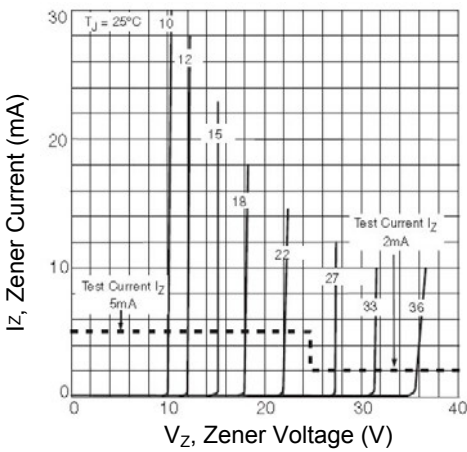


Figure 3. Typical Zener Breakdown Characteristics

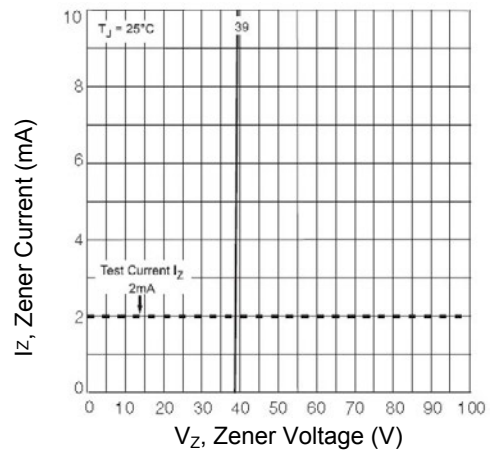
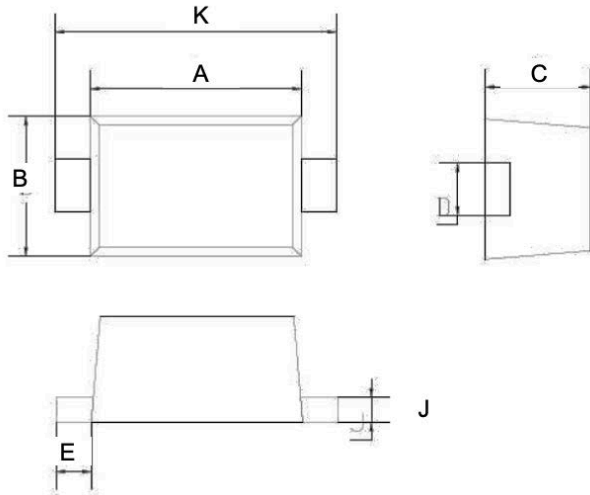


Figure 4. Typical Zener Breakdown Characteristics

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 Vz Range: 2.0 to 75V Power Dissipation: 150mW

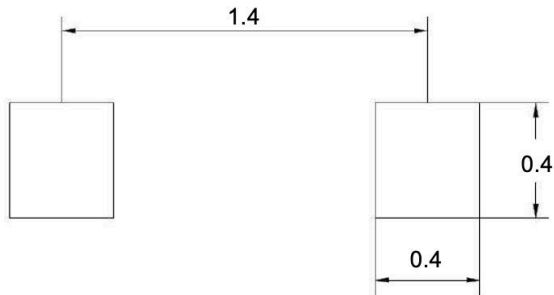
Package Outline Dimensions (SOD-523)



| Symbol | Dimensions in Millimeters | |
|--------|---------------------------|------|
| | Min | Max |
| A | 1.10 | 1.30 |
| B | 0.70 | 0.90 |
| C | 0.50 | 0.70 |
| D | 0.25 | 0.35 |
| E | 0.15 | 0.25 |
| J | 0.05 | 0.15 |
| K | 1.50 | 1.70 |

Recommended Pad Layout

Unit: mm



Order Information

| Device | Package | Marking | Carrier | Quantity |
|------------------------|---------|--------------------------------|-------------|-------------------------|
| BZX584B2V0 - BZX584B75 | SOD-523 | See Electrical Characteristics | Tape & Reel | 3,000 pcs / Tape & Reel |