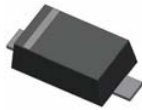


Small Signal Diode

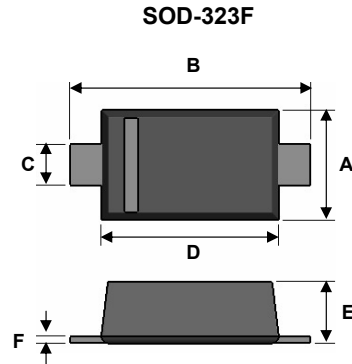


Features

- ↪ Wide zener voltage range selection : 2.4V to 75V
- ↪ V_z Tolerance Selection of $\pm 2\%$
- ↪ Moisture sensitivity level 1
- ↪ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ↪ Pb free version and RoHS compliant
- ↪ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Mechanical Data

- ↪ Case : Flat lead SOD-323 small outline plastic package
- ↪ Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ↪ High temperature soldering guaranteed: 260°C/10s
- ↪ Polarity : Indicated by cathode band
- ↪ Weight : 4.02±0.5 mg



| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 1.15 | 1.35 | 0.045 | 0.053 |
| B | 2.30 | 2.70 | 0.091 | 0.106 |
| C | 0.25 | 0.40 | 0.010 | 0.016 |
| D | 1.60 | 1.80 | 0.063 | 0.071 |
| E | 0.80 | 1.00 | 0.031 | 0.039 |
| F | 0.05 | 0.20 | 0.002 | 0.008 |

Ordering Information

| Part No. | Package | Packing |
|--------------|----------|-----------------|
| BZT52BxxS RR | SOD-323F | 3Kpcs / 7" Reel |

Maximum Ratings and Electrical Characteristics

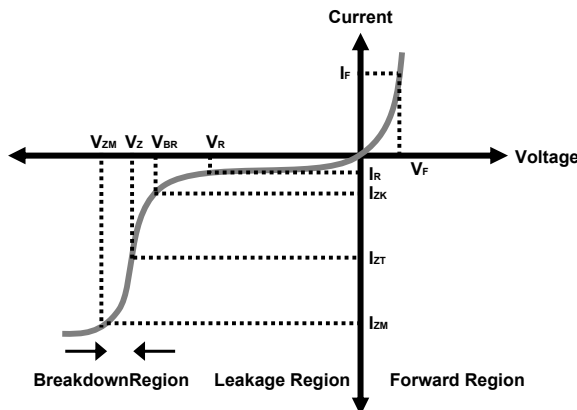
Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

| Type Number | Symbol | Value | Units |
|--|------------------------|--------------|-------|
| Power Dissipation | P_D | 200 | mW |
| Forward Voltage | V_F (at $I_F=10mA$) | 1 | V |
| Thermal Resistance (Junction to Ambient) | R θ JA (Note 1) | 625 | °C/W |
| Junction and Storage Temperature Range | T_J, T_{STG} | -65 to + 150 | °C |

Notes:1. Valid provided that electrodes are kept at ambient temperature

Zener I vs. V Characteristics



- V_{BR} : Voltage at I_{ZK}
- I_{ZK} : Test current for voltage V_{BR}
- Z_{ZK} : Dynamic impedance at I_{ZK}
- I_{ZT} : Test current for voltage V_Z
- V_Z : Voltage at current I_{ZT}
- Z_{ZT} : Dynamic impedance at I_{ZT}
- I_{ZM} : Maximum steady state current
- V_{ZM} : Voltage at I_{ZM}

Small Signal Diode

Electrical Characteristics

Ta = 25°C unless otherwise noted

V_F Forward Voltage = 1V Maximum @ I_F = 10 mA for all part numbers

| Part Number | V _Z @ I _{ZT} (Volt) | | | I _{ZT} (mA) | Z _{ZT} @ I _{ZT} (Ω) Max | I _{ZK} (mA) | Z _{ZK} @ I _{ZK} (Ω) Max | I _R @ V _R (μA) Max | V _R (V) |
|-------------|---|-----|-------|----------------------|--|----------------------|--|---|--------------------|
| | Nom | Min | Max | | | | | | |
| BZT52B2V4S | 2.35 | 2.4 | 2.45 | 5 | 100 | 1 | 564 | 45 | 1 |
| BZT52B2V7S | 2.65 | 2.7 | 2.75 | 5 | 100 | 1 | 564 | 18 | 1 |
| BZT52B3V0S | 2.94 | 3 | 3.06 | 5 | 100 | 1 | 564 | 9 | 1 |
| BZT52B3V3S | 3.23 | 3.3 | 3.37 | 5 | 95 | 1 | 564 | 4.5 | 1 |
| BZT52B3V6S | 3.53 | 3.6 | 3.67 | 5 | 90 | 1 | 564 | 4.5 | 1 |
| BZT52B3V9S | 3.82 | 3.9 | 3.98 | 5 | 90 | 1 | 564 | 2.7 | 1 |
| BZT52B4V3S | 4.21 | 4.3 | 4.39 | 5 | 90 | 1 | 564 | 2.7 | 1 |
| BZT52B4V7S | 4.61 | 4.7 | 4.79 | 5 | 80 | 1 | 470 | 2.7 | 2 |
| BZT52B5V1S | 5 | 5.1 | 5.2 | 5 | 60 | 1 | 451 | 1.8 | 2 |
| BZT52B5V6S | 5.49 | 5.6 | 5.71 | 5 | 40 | 1 | 376 | 0.9 | 2 |
| BZT52B6V2S | 6.08 | 6.2 | 6.32 | 5 | 10 | 1 | 141 | 2.7 | 4 |
| BZT52B6V8S | 6.66 | 6.8 | 6.94 | 5 | 15 | 1 | 75 | 1.8 | 4 |
| BZT52B7V5S | 7.35 | 7.5 | 7.65 | 5 | 15 | 1 | 75 | 0.9 | 5 |
| BZT52B8V2S | 8.04 | 8.2 | 8.36 | 5 | 15 | 1 | 75 | 0.63 | 5 |
| BZT52B9V1S | 8.92 | 9.1 | 9.28 | 5 | 15 | 1 | 94 | 0.45 | 6 |
| BZT52B10S | 9.8 | 10 | 10.2 | 5 | 20 | 1 | 141 | 0.18 | 7 |
| BZT52B11S | 10.78 | 11 | 11.22 | 5 | 20 | 1 | 141 | 0.09 | 8 |
| BZT52B12S | 11.76 | 12 | 12.24 | 5 | 25 | 1 | 141 | 0.09 | 8 |
| BZT52B13S | 12.74 | 13 | 13.26 | 5 | 30 | 1 | 160 | 0.09 | 8 |
| BZT52B15S | 14.7 | 15 | 15.3 | 5 | 30 | 1 | 188 | 0.045 | 10.5 |
| BZT52B16S | 15.68 | 16 | 16.32 | 5 | 40 | 1 | 188 | 0.045 | 11.2 |
| BZT52B18S | 17.64 | 18 | 18.36 | 5 | 45 | 1 | 212 | 0.045 | 12.6 |
| BZT52B20S | 19.60 | 20 | 20.40 | 5 | 55 | 1 | 212 | 0.045 | 14.0 |
| BZT52B22S | 21.56 | 22 | 22.44 | 5 | 55 | 1 | 235 | 0.045 | 15.4 |
| BZT52B24S | 23.52 | 24 | 24.48 | 5 | 70 | 1 | 235 | 0.045 | 16.8 |
| BZT52B27S | 26.46 | 27 | 27.54 | 2 | 80 | 0.5 | 282 | 0.045 | 18.9 |
| BZT52B30S | 29.40 | 30 | 30.60 | 2 | 80 | 0.5 | 282 | 0.045 | 21.0 |
| BZT52B33S | 32.34 | 33 | 33.66 | 2 | 80 | 0.5 | 306 | 0.045 | 23.0 |
| BZT52B36S | 35.28 | 36 | 36.72 | 2 | 90 | 0.5 | 329 | 0.045 | 25.2 |
| BZT52B39S | 38.22 | 39 | 39.78 | 2 | 130 | 0.5 | 329 | 0.045 | 27.3 |
| BZT52B43S | 42.14 | 43 | 43.86 | 2 | 150 | 0.5 | 353 | 0.045 | 30.1 |
| BZT52B47S | 46.06 | 47 | 47.94 | 2 | 170 | 0.5 | 353 | 0.045 | 33.0 |
| BZT52B51S | 49.98 | 51 | 52.02 | 2 | 180 | 0.5 | 376 | 0.045 | 35.7 |
| BZT52B56S | 54.88 | 56 | 57.12 | 2 | 200 | 0.5 | 400 | 0.045 | 39.2 |
| BZT52B62S | 60.76 | 62 | 63.24 | 2 | 215 | 0.5 | 423 | 0.045 | 43.4 |
| BZT52B68S | 66.64 | 68 | 69.36 | 2 | 240 | 0.5 | 447 | 0.045 | 47.6 |
| BZT52B75S | 73.50 | 75 | 76.50 | 2 | 255 | 0.5 | 470 | 0.045 | 52.5 |

Notes:

1. The Zener Voltage (V_Z) is tested under pulse condition of 10ms.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of **±2%**.
3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest **Taiwan semiconductor** representative.
4. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

Small Signal Diode

Rating and Sharacteristic Curves

FIG 1 Typical Forward Characteristics

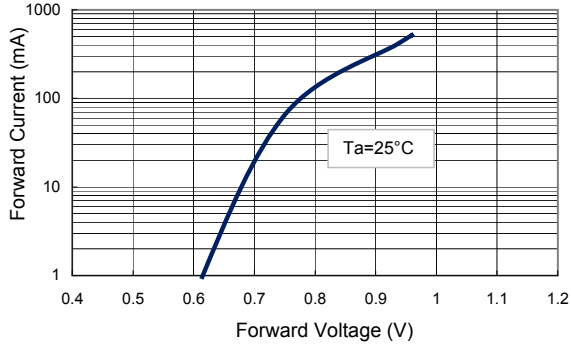


FIG 2 Zener Breakdown Characteristics

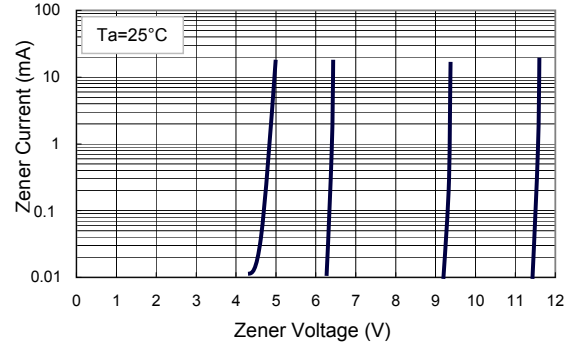


FIG 3 Zener Breakdown Characteristics

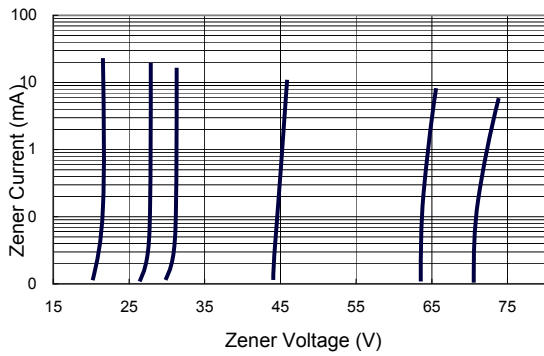


FIG 4 Admissible Power Dissipation Curve

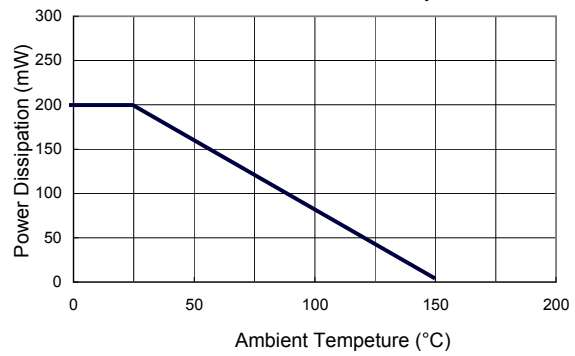


FIG 5 Typical Capacitance

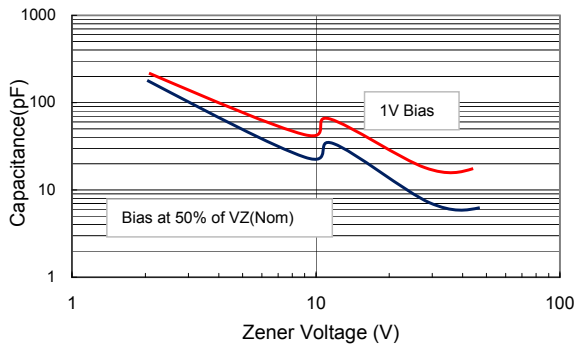


FIG 6 Effect of Zener Voltage on Impedance

