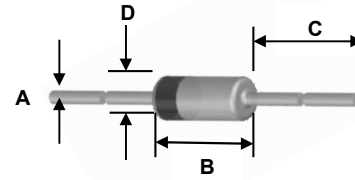


## Small Signal Diode



### DO-35 Axial Lead HERMETICALLY SEALED GLASS



### 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
- ✧ All External Surfaces are Corrosion Resistant and Leads are Readily Solderable
- ✧ ESD rating 15KV per human body model

### Mechanical Data

- ✧ Case : DO-35 package (SOD-27)
- ✧ High temperature soldering guaranteed :  $260^\circ\text{C}/10\text{s}$
- ✧ Polarity : Indicated by cathode band
- ✧ Weight :  $109 \pm 4 \text{ mg}$

| Dimensions | Unit (mm) |       | Unit (inch) |       |
|------------|-----------|-------|-------------|-------|
|            | Min       | Max   | Min         | Max   |
| A          | 0.45      | 0.55  | 0.018       | 0.022 |
| B          | 3.05      | 5.08  | 0.120       | 0.200 |
| C          | 25.40     | 38.10 | 1.000       | 1.500 |
| D          | 1.53      | 2.28  | 0.060       | 0.090 |

### Ordering Information

| Part No.     | Package | Packing           |
|--------------|---------|-------------------|
| BZX55BXXX A0 | DO-35   | 5Kpcs / Ammo      |
| BZX55BXXX R0 | DO-35   | 10Kpcs / 14" Reel |

### Maximum Ratings and Electrical Characteristics

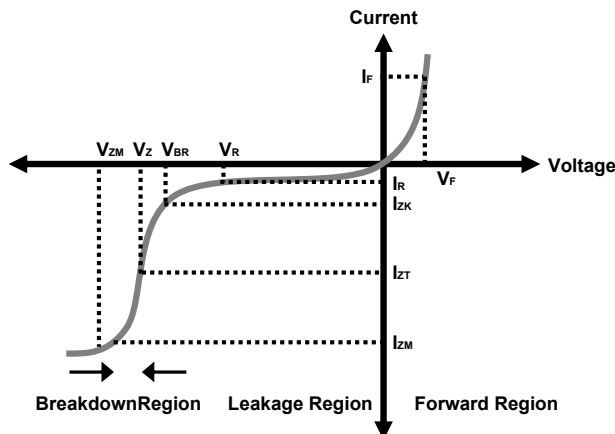
Rating at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.

#### Maximum Ratings

| Type Number                                       | Symbol          | Value        | Units                     |
|---------------------------------------------------|-----------------|--------------|---------------------------|
| Power Dissipation                                 | $P_D$           | 500          | mW                        |
| Forward Voltage $I_F=10\text{mA}$                 | $V_F$           | 1.0          | V                         |
| Thermal Resistance (Junction to Ambient) (Note 1) | $R_{\theta JA}$ | 240          | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range            | $T_J, T_{STG}$  | -65 to + 200 | $^\circ\text{C}$          |

Notes:1. Valid provided that electrodes are kept at ambient temperature, and mount on PC board 50mmx50mmx1.6mm

### 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<sub>F</sub> Forward Voltage = 1.0V Maximum @ I<sub>F</sub> = 10 mA for all part numbers

| Part Number | V <sub>Z</sub> @ I <sub>ZT</sub> (Volt) |       |       | I <sub>ZT</sub> (mA) | Z <sub>ZT</sub> @ I <sub>ZT</sub> (Ω)<br>Max | I <sub>ZK</sub> (mA) | Z <sub>ZK</sub> @ I <sub>ZK</sub> (Ω)<br>Max | I <sub>R</sub> @ V <sub>R</sub> (μA)<br>Max | V <sub>R</sub> (V) |
|-------------|-----------------------------------------|-------|-------|----------------------|----------------------------------------------|----------------------|----------------------------------------------|---------------------------------------------|--------------------|
|             | Nom                                     | Min   | Max   |                      |                                              |                      |                                              |                                             |                    |
| BZX55B2V4   | 2.4                                     | 2.35  | 2.45  | 5.0                  | 85                                           | 1.0                  | 600                                          | 50                                          | 1.0                |
| BZX55B2V7   | 2.7                                     | 2.65  | 2.75  | 5.0                  | 85                                           | 1.0                  | 600                                          | 10                                          | 1.0                |
| BZX55B3V0   | 3.0                                     | 2.94  | 3.06  | 5.0                  | 85                                           | 1.0                  | 600                                          | 4.0                                         | 1.0                |
| BZX55B3V3   | 3.3                                     | 3.23  | 3.37  | 5.0                  | 85                                           | 1.0                  | 600                                          | 2.0                                         | 1.0                |
| BZX55B3V6   | 3.6                                     | 3.53  | 3.67  | 5.0                  | 85                                           | 1.0                  | 600                                          | 2.0                                         | 1.0                |
| BZX55B3V9   | 3.9                                     | 3.82  | 3.98  | 5.0                  | 85                                           | 1.0                  | 600                                          | 2.0                                         | 1.0                |
| BZX55B4V3   | 4.3                                     | 4.21  | 4.39  | 5.0                  | 75                                           | 1.0                  | 600                                          | 1.0                                         | 1.0                |
| BZX55B4V7   | 4.7                                     | 4.61  | 4.79  | 5.0                  | 60                                           | 1.0                  | 600                                          | 0.5                                         | 1.0                |
| BZX55B5V1   | 5.1                                     | 5.00  | 5.20  | 5.0                  | 35                                           | 1.0                  | 550                                          | 0.1                                         | 1.0                |
| BZX55B5V6   | 5.6                                     | 5.49  | 5.71  | 5.0                  | 25                                           | 1.0                  | 450                                          | 0.1                                         | 1.0                |
| BZX55B6V2   | 6.2                                     | 6.08  | 6.32  | 5.0                  | 10                                           | 1.0                  | 200                                          | 0.1                                         | 2.0                |
| BZX55B6V8   | 6.8                                     | 6.66  | 6.94  | 5.0                  | 8                                            | 1.0                  | 150                                          | 0.1                                         | 3.0                |
| BZX55B7V5   | 7.5                                     | 7.35  | 7.65  | 5.0                  | 7                                            | 1.0                  | 50                                           | 0.1                                         | 5.0                |
| BZX55B8V2   | 8.2                                     | 8.04  | 8.36  | 5.0                  | 7                                            | 1.0                  | 50                                           | 0.1                                         | 6.2                |
| BZX55B9V1   | 9.1                                     | 8.92  | 9.28  | 5.0                  | 10                                           | 1.0                  | 50                                           | 0.1                                         | 6.8                |
| BZX55B10    | 10                                      | 9.80  | 10.20 | 5.0                  | 15                                           | 1.0                  | 70                                           | 0.1                                         | 7.5                |
| BZX55B11    | 11                                      | 10.78 | 11.22 | 5.0                  | 20                                           | 1.0                  | 70                                           | 0.1                                         | 8.2                |
| BZX55B12    | 12                                      | 11.76 | 12.24 | 5.0                  | 20                                           | 1.0                  | 90                                           | 0.1                                         | 9.1                |
| BZX55B13    | 13                                      | 12.74 | 13.26 | 5.0                  | 26                                           | 1.0                  | 110                                          | 0.1                                         | 10                 |
| BZX55B15    | 15                                      | 14.70 | 15.30 | 5.0                  | 30                                           | 1.0                  | 110                                          | 0.1                                         | 11                 |
| BZX55B16    | 16                                      | 15.68 | 16.32 | 5.0                  | 40                                           | 1.0                  | 170                                          | 0.1                                         | 12                 |
| BZX55B18    | 18                                      | 17.64 | 18.36 | 5.0                  | 50                                           | 1.0                  | 170                                          | 0.1                                         | 14                 |
| BZX55B20    | 20                                      | 19.60 | 20.40 | 5.0                  | 55                                           | 1.0                  | 220                                          | 0.1                                         | 15                 |
| BZX55B22    | 22                                      | 21.56 | 22.44 | 5.0                  | 55                                           | 1.0                  | 220                                          | 0.1                                         | 17                 |
| BZX55B24    | 24                                      | 23.52 | 24.48 | 5.0                  | 80                                           | 1.0                  | 220                                          | 0.1                                         | 18                 |
| BZX55B27    | 27                                      | 26.46 | 27.54 | 5.0                  | 80                                           | 1.0                  | 220                                          | 0.1                                         | 20                 |
| BZX55B30    | 30                                      | 29.40 | 30.60 | 5.0                  | 80                                           | 1.0                  | 220                                          | 0.1                                         | 22                 |
| BZX55B33    | 33                                      | 32.34 | 33.66 | 5.0                  | 80                                           | 1.0                  | 220                                          | 0.1                                         | 24                 |
| BZX55B36    | 36                                      | 35.28 | 36.72 | 5.0                  | 80                                           | 1.0                  | 220                                          | 0.1                                         | 27                 |
| BZX55B39    | 39                                      | 38.22 | 39.78 | 2.5                  | 90                                           | 0.5                  | 500                                          | 0.1                                         | 28                 |
| BZX55B43    | 43                                      | 42.14 | 43.86 | 2.5                  | 90                                           | 0.5                  | 600                                          | 0.1                                         | 32                 |
| BZX55B47    | 47                                      | 46.06 | 47.94 | 2.5                  | 110                                          | 0.5                  | 700                                          | 0.1                                         | 35                 |
| BZX55B51    | 51                                      | 49.98 | 52.02 | 2.5                  | 125                                          | 0.5                  | 700                                          | 0.1                                         | 38                 |
| BZX55B56    | 56                                      | 54.88 | 57.12 | 2.5                  | 135                                          | 0.5                  | 1000                                         | 0.1                                         | 42                 |
| BZX55B62    | 62                                      | 60.76 | 63.24 | 2.5                  | 150                                          | 0.5                  | 1000                                         | 0.1                                         | 47                 |
| BZX55B68    | 68                                      | 66.64 | 69.36 | 2.5                  | 160                                          | 0.5                  | 1000                                         | 0.1                                         | 51                 |
| BZX55B75    | 75                                      | 73.50 | 76.50 | 2.5                  | 170                                          | 0.5                  | 1000                                         | 0.1                                         | 56                 |

**Notes:**

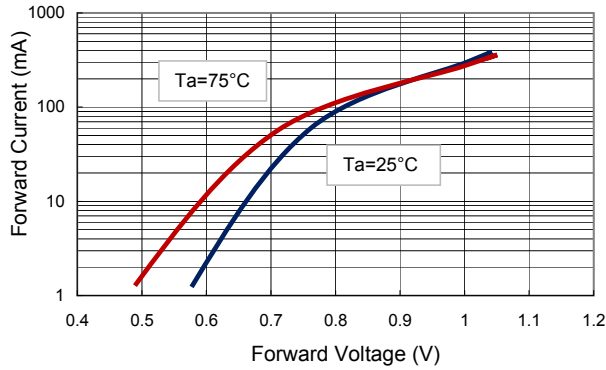
1. The Zener Voltage (V<sub>Z</sub>) is tested under pulse condition of 10ms
2. The device numbers listed have a standard tolerance on the nominal zener voltage of **±2%**.
3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown an tighter 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<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed to I<sub>ZT</sub> or I<sub>ZK</sub>.

## Small Signal Diode

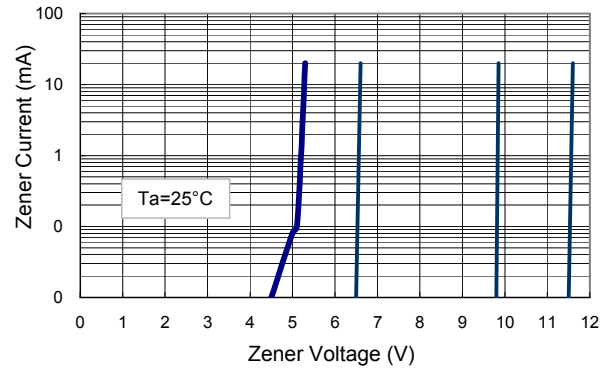
### Rating and Sharacteristic Curves

## BZX55B2V4-BZX55B75 500mW, 2% Tolerance SMD Zener Diode

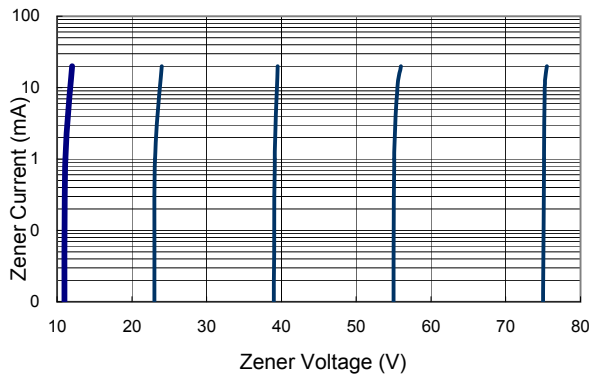
**FIG 1 Typical Forward Characteristics**



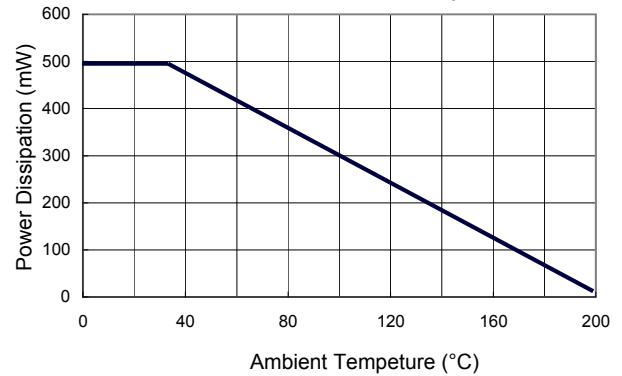
**FIG 2 Zener Breakdown Characteristics**



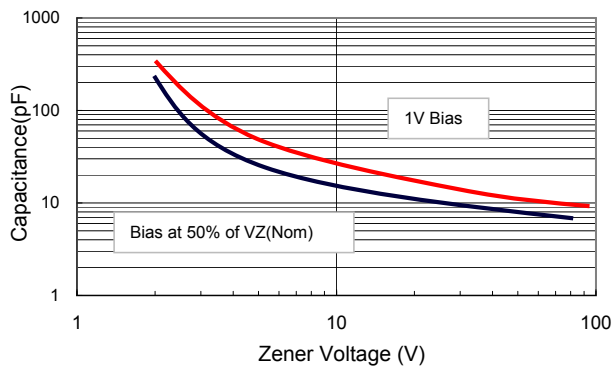
**FIG 3 Zener Breakdown Characteristics**



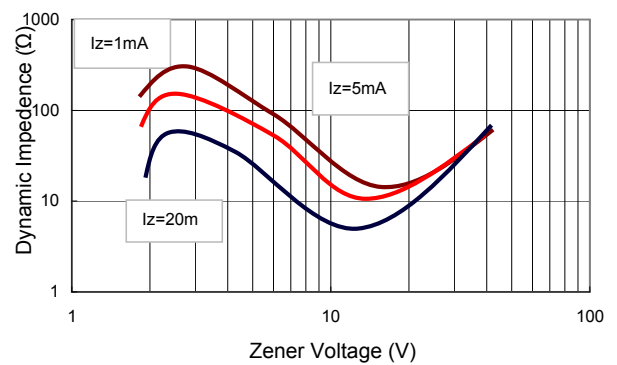
**FIG 4 Admissible Power Dissipation Curve**



**FIG 5 Typical Capacitance**



**FIG 6 Effect of Zener Voltage on Impedance**



# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## Taiwan Semiconductor:

[BZX55B10](#) [BZX55B11](#) [BZX55B12](#) [BZX55B13](#) [BZX55B15](#) [BZX55B16](#) [BZX55B18](#) [BZX55B20](#) [BZX55B22](#)  
[BZX55B24](#) [BZX55B27](#) [BZX55B2V4](#) [BZX55B2V7](#) [BZX55B30](#) [BZX55B33](#) [BZX55B36](#) [BZX55B39](#) [BZX55B3V0](#)  
[BZX55B3V3](#) [BZX55B3V6](#) [BZX55B3V9](#) [BZX55B43](#) [BZX55B47](#) [BZX55B4V3](#) [BZX55B4V7](#) [BZX55B51](#) [BZX55B56](#)  
[BZX55B5V1](#) [BZX55B5V6](#) [BZX55B62](#) [BZX55B68](#) [BZX55B6V2](#) [BZX55B6V8](#) [BZX55B75](#) [BZX55B7V5](#) [BZX55B8V2](#)  
[BZX55B9V1](#)