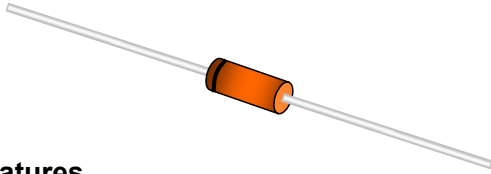


## Small Signal Diode



### Features

- Wide zener voltage range selection: 3.3V to 56V
- V<sub>Z</sub> Tolerance Selection of ±5%
- Designed for through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Pb free version and RoHS compliant
- High reliability glass passivation insuring parameter stability and protection against junction contamination

### Mechanical Data

- Case :DO-41 Solder Hot Dip Tin(Sn)lead finish
- Lead: Axial leads, solderable per MIL-STD-202, Method 205
- High temperature soldering guaranteed: 260°C/10s
- Polarity: Indicated by cathode band
- Weight : 310 mg

### Ordering Information

| Part No.     | Package code | Package | Packing          |
|--------------|--------------|---------|------------------|
| BZX85C3V3-56 | A0           | DO-41   | 3Kpcs / Ammo     |
| BZX85C3V3-56 | R0           | DO-41   | 5Kpcs / 14" Reel |

### Maximum Ratings and Electrical Characteristics

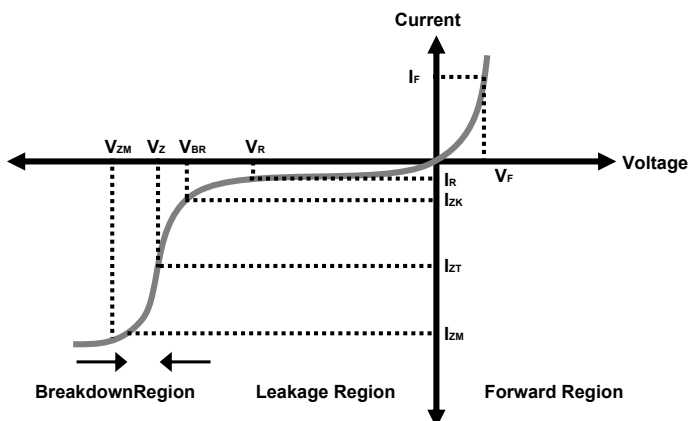
Rating at 25°C ambient temperature unless otherwise specified.

#### Maximum Ratings

| Type Number                                       | Symbol                            | Value        | Units |
|---------------------------------------------------|-----------------------------------|--------------|-------|
| Power Dissipation                                 | P <sub>D</sub>                    | 1.3          | W     |
| Forward Voltage @ I <sub>F</sub> =10mA            | V <sub>F</sub>                    | 1.2          | V     |
| Thermal Resistance (Junction to Ambient) (Note 1) | R <sub>θJA</sub>                  | 130          | °C/W  |
| Junction and Storage Temperature Range            | T <sub>J</sub> , T <sub>STG</sub> | -65 to + 200 | °C    |

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

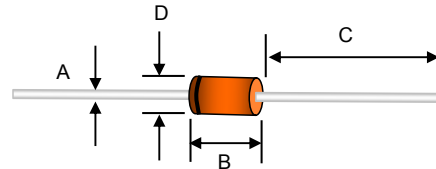
### Zener I vs. V Characteristics



- V<sub>BR</sub> : Voltage at I<sub>ZK</sub>
- I<sub>ZK</sub> : Test current for voltage V<sub>BR</sub>
- Z<sub>ZK</sub> : Dynamic impedance at I<sub>ZK</sub>
- I<sub>ZT</sub> : Test current for voltage V<sub>Z</sub>
- V<sub>Z</sub> : Voltage at current I<sub>ZT</sub>
- Z<sub>ZT</sub> : Dynamic impedance at I<sub>ZT</sub>
- I<sub>ZM</sub> : Maximum steady state current
- V<sub>ZM</sub> : Voltage at I<sub>ZM</sub>

## BZX85C3V3-BZX85C56 1.3W, 5% Tolerance Zener Diode

### DO-41 Axial Lead HERMETICALLY SEALED GLASS



| Dimensions | Unit (mm) |      | Unit (inch) |       |
|------------|-----------|------|-------------|-------|
|            | Min       | Max  | Min         | Max   |
| A          | 0.68      | 0.81 | 0.027       | 0.032 |
| B          | 3.70      | 4.25 | 0.146       | 0.201 |
| C          | 25.40     | -    | 1.000       | -     |
| D          | 2.10      | 2.60 | 0.083       | 0.102 |

**Small Signal Diode**
**Electrical Characteristics**

Ta = 25°C unless otherwise noted

V<sub>F</sub> Forward Voltage = 1.2V Maximum @ I<sub>F</sub> = 10 mA for all part numbers

| Part Number | Marking Code | 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) |
|-------------|--------------|-----------------------------------------|-----|------|----------------------|----------------------------------------------|----------------------|----------------------------------------------|---------------------------------------------|--------------------|
|             |              | Min                                     | Nom | Max  |                      |                                              |                      |                                              |                                             |                    |
| BZX85C3V3   | BZX85C3V3    | 3.1                                     | 3.3 | 3.5  | 80                   | 20                                           | 1                    | 400                                          | 40                                          | 1                  |
| BZX85C3V6   | BZX85C3V6    | 3.4                                     | 3.6 | 3.8  | 60                   | 20                                           | 1                    | 500                                          | 20                                          | 1                  |
| BZX85C3V9   | BZX85C3V9    | 3.7                                     | 3.9 | 4.1  | 60                   | 15                                           | 1                    | 500                                          | 20                                          | 1                  |
| BZX85C4V3   | BZX85C4V3    | 4.0                                     | 4.3 | 4.6  | 50                   | 13                                           | 1                    | 500                                          | 3                                           | 1                  |
| BZX85C4V7   | BZX85C4V7    | 4.4                                     | 4.7 | 5.0  | 45                   | 13                                           | 1                    | 500                                          | 3                                           | 1                  |
| BZX85C5V1   | BZX85C5V1    | 4.8                                     | 5.1 | 5.4  | 45                   | 10                                           | 1                    | 500                                          | 1                                           | 1.5                |
| BZX85C5V6   | BZX85C5V6    | 5.2                                     | 5.6 | 6.0  | 45                   | 7                                            | 1                    | 400                                          | 1                                           | 2                  |
| BZX85C6V2   | BZX85C6V2    | 5.8                                     | 6.2 | 6.6  | 35                   | 4                                            | 1                    | 300                                          | 1                                           | 3                  |
| BZX85C6V8   | BZX85C6V8    | 6.4                                     | 6.8 | 7.2  | 35                   | 3.5                                          | 1                    | 300                                          | 1                                           | 4                  |
| BZX85C7V5   | BZX85C7V5    | 7.0                                     | 7.5 | 7.9  | 35                   | 3                                            | 0.5                  | 200                                          | 1                                           | 4.5                |
| BZX85C8V2   | BZX85C8V2    | 7.7                                     | 8.2 | 8.7  | 25                   | 5                                            | 0.5                  | 200                                          | 1                                           | 6.2                |
| BZX85C9V1   | BZX85C9V1    | 8.5                                     | 9.1 | 9.6  | 25                   | 5                                            | 0.5                  | 200                                          | 1                                           | 6.9                |
| BZX85C10    | BZX85C10     | 9.4                                     | 10  | 10.6 | 25                   | 7                                            | 0.5                  | 200                                          | 0.5                                         | 7.5                |
| BZX85C11    | BZX85C11     | 10.4                                    | 11  | 11.6 | 20                   | 8                                            | 0.5                  | 300                                          | 0.5                                         | 8.2                |
| BZX85C12    | BZX85C12     | 11.4                                    | 12  | 12.7 | 20                   | 9                                            | 0.5                  | 350                                          | 0.5                                         | 9.1                |
| BZX85C13    | BZX85C13     | 12.4                                    | 13  | 14.1 | 20                   | 10                                           | 0.5                  | 400                                          | 0.5                                         | 10                 |
| BZX85C15    | BZX85C15     | 13.8                                    | 15  | 15.6 | 15                   | 15                                           | 0.5                  | 500                                          | 0.5                                         | 11                 |
| BZX85C16    | BZX85C16     | 15.3                                    | 16  | 17.1 | 15                   | 15                                           | 0.5                  | 500                                          | 0.5                                         | 12                 |
| BZX85C18    | BZX85C18     | 16.8                                    | 18  | 19.1 | 15                   | 20                                           | 0.5                  | 500                                          | 0.5                                         | 13                 |
| BZX85C20    | BZX85C20     | 18.8                                    | 20  | 21.2 | 10                   | 24                                           | 0.5                  | 600                                          | 0.5                                         | 15                 |
| BZX85C22    | BZX85C22     | 20.8                                    | 22  | 23.3 | 10                   | 25                                           | 0.5                  | 600                                          | 0.5                                         | 16                 |
| BZX85C24    | BZX85C24     | 22.8                                    | 24  | 25.6 | 10                   | 25                                           | 0.5                  | 600                                          | 0.5                                         | 18                 |
| BZX85C27    | BZX85C27     | 25.1                                    | 27  | 28.9 | 8                    | 30                                           | 0.25                 | 750                                          | 0.5                                         | 20                 |
| BZX85C30    | BZX85C30     | 28.0                                    | 30  | 32.0 | 8                    | 30                                           | 0.25                 | 1000                                         | 0.5                                         | 22                 |
| BZX85C33    | BZX85C33     | 31.0                                    | 33  | 35.0 | 8                    | 35                                           | 0.25                 | 1000                                         | 0.5                                         | 24                 |
| BZX85C36    | BZX85C36     | 34.0                                    | 36  | 38.0 | 8                    | 40                                           | 0.25                 | 1000                                         | 0.5                                         | 25                 |
| BZX85C39    | BZX85C39     | 37.0                                    | 39  | 41.0 | 6                    | 45                                           | 0.25                 | 1000                                         | 0.5                                         | 27                 |
| BZX85C43    | BZX85C43     | 40.0                                    | 43  | 46.0 | 6                    | 50                                           | 0.25                 | 1000                                         | 0.5                                         | 30                 |
| BZX85C47    | BZX85C47     | 44.0                                    | 47  | 50.0 | 4                    | 90                                           | 0.25                 | 1500                                         | 0.5                                         | 33                 |
| BZX85C51    | BZX85C51     | 48.0                                    | 51  | 54.0 | 4                    | 115                                          | 0.25                 | 1500                                         | 0.5                                         | 36                 |
| BZX85C56    | BZX85C56     | 52.0                                    | 56  | 60.0 | 4                    | 120                                          | 0.25                 | 2000                                         | 0.5                                         | 39                 |

**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 **±5%**.
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

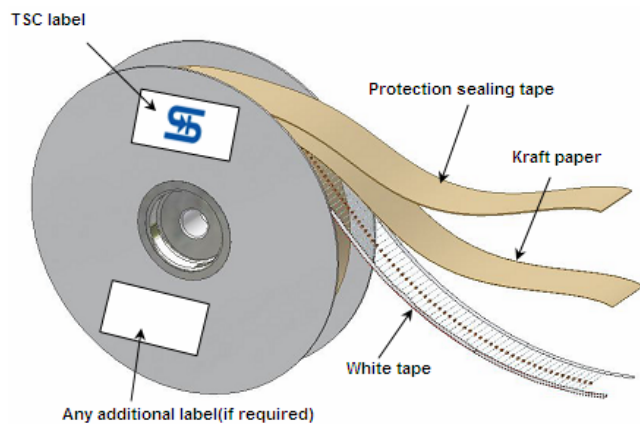
**Small Signal Diode**

**Rating and Sharacteristic Curves**

**BZX85C3V3-BZX85C56**  
**1.3W,5% Tolerance Zener Diode**

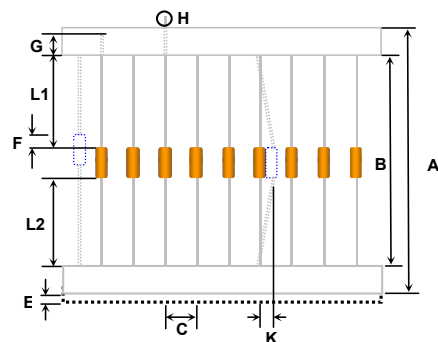
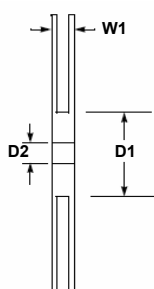
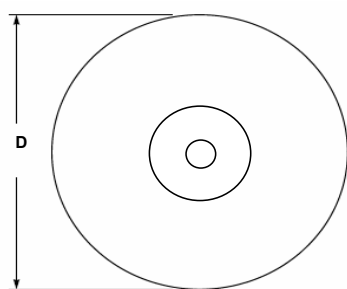
## Small Signal Diode

### Tape & Reel specification



## BZX85C3V3-BZX85C56 1.3W,5% Tolerance Zener Diode

| Item                  | Symbol | Dimension(mm) |
|-----------------------|--------|---------------|
| Overall width         | A      | 64+1.69/-0.69 |
| Tape spacing          | B      | 52.0+/-0.69   |
| Component Pitch       | C      | 5.08+/-0.40   |
| Untaped lead          | L1-L2  | +/-0.69       |
| Bent                  | K      | 1.2 Max       |
| Tape Mismatch         | E      | 0.55(MAX)     |
| Glass offset          | F      | 0.69(MAX)     |
| Taped lead            | G      | 3.2Min        |
| lead beyond tape      | H      | 0             |
| Reel outside diameter | D      | 260+/-3       |
| Reel inner diameter   | D1     | 48+/-1        |
| Feed hole width       | D2     | 20+/-0.5      |
| Reel width            | W1     | 72+3/-1       |





**BZX85C3V3-BZX85C56**  
**1.3W,5% Tolerance Zener Diode**

## Small Signal Diode

## Datasheet Vision History

[illegible]

