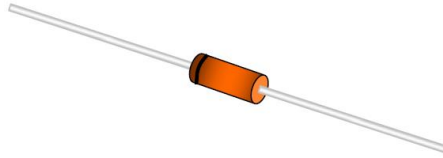


Small Signal Product

5% Tolerance Zener Diode

FEATURES

- Wide zener voltage range selection: 3.3V to 56V
- VZ Tolerance selection of $\pm 5\%$
- Designed for through-hole device type mounting
- Hermetically sealed glasses
- Pb free and RoHS compliant
- High reliability glass passivation insuring parameter stability and protection against junction contamination



DO-41

Hermetically Sealed Glass



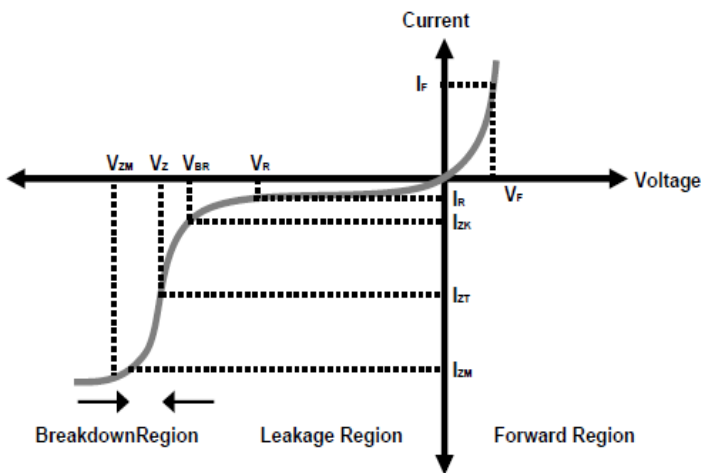
MECHANICAL DATA

- Case: DO-41
- High temperature soldering guaranteed: 260°C/10s
- Polarity: Cathode indicated by polarity band
- Weight : 310mg (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted) | | | |
|--|-----------------|--------------|---------------------------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Power Dissipation | P_D | 1.3 | W |
| Forward Voltage | V_F | 1.2 | V |
| Thermal Resistance (Junction to Ambient) (Note 1) | $R_{\theta JA}$ | 130 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{STG} | - 65 to +200 | $^\circ\text{C}$ |

Note 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 Product

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

| Part Number | Marking Code | 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) |
|-------------|--------------|-------------------------|-----|------|---------------|---|---------------|---|--|-----------|
| | | 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_Z) is tested under pulse condition of 10ms.

 2. The device numbers listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.

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 (I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK} .

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ORDERING INFORMATION

| PART NO. | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING |
|------------------------|--------------|---------------------|---------|-----------------|
| BZX85Cxxx (Note1,2) | R0 | G | DO-41 | 5K / 14" Reel |
| | A0 | | | 3K / Box (Ammo) |

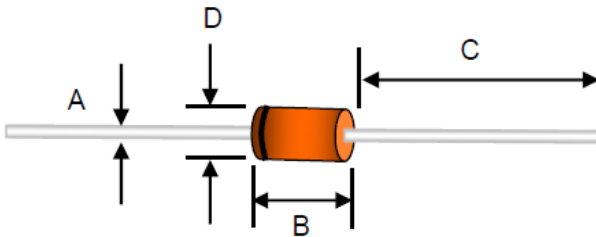
Note 1: "xxx" defines voltage from 3.3V (BZX85C3V3) to 56V (BZX85C56)

Note 2: Whole series with green compound.

EXAMPLE

| PREFERRED PART NO. | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
|--------------------|-----------|--------------|---------------------|----------------|
| BZX85C3V3 R0G | BZX85C3V3 | R0 | G | Green compound |

PACKAGE OUTLINE DIMENSION



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 0.50 | 0.90 | 0.020 | 0.035 |
| B | 3.50 | 5.20 | 0.138 | 0.205 |
| C | 22.00 | -- | 0.866 | -- |
| D | 1.80 | 2.80 | 0.071 | 0.110 |

MARKING DIAGRAM



Small Signal Product

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