Elektronische Bauelemente

# BZX55B Series

**500mW , DO-35**

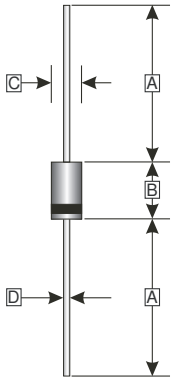
**Glass Zener Voltage Regulators**

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Zener Voltage Range 2.4 to 75 Volts
- Through-Hole Device Type Mounting
- Compression Bonded Construction
- Cathode Indicated By Polarity Band
- Case: DO-35 (JEDEC)
- Hermetically Sealed Glass
- All External Surfaces Are Corrosion Resistant And Leads Are Readily Solderable

**DO-35**




| REF. | Millimeter | |
|---|---|---|
| | Min. | Max. |
| A | 25.0 | 29.9 |
| B | - | 4.50 |
| C | - | 2.00 |
| D | 0.46 | 0.56 |


## MAXIMUM RATINGS ($T_A$=25℃ unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Power Dissipation | $P_D$ | 500 | mW |
| Maximum Forward Voltage @ $I_F$=100mA | $V_F$ | 1 | V |
| Operating Junction and Storage Temperature Range | $T_J$, $T_{STG}$ | 175 , -65~175 | ℃ |

Notes:
1. These ratings are limiting values above which the serviceability of the diode may be impaired.

## ELECTRICAL RATINGS ($T_A$=25℃ unless otherwise specified)

| TYPE NUMBER[1] | ZENER VOLTAGE RANGE [2] | | | ZENER IMPEDANCE [3] | | | LEAKAGE CURRENT [1] | |
|---|---|---|---|---|---|---|---|---|
| | $V_Z$@$I_{ZT}$ | | $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$ | $I_{ZK}$ | $Z_{ZK}$ @ $I_{ZK}$ | $I_R$ @ $V_R$ | $V_R$ |
| | Min(V) | Max(V) | mA | Ω | mA | Ω | μA | V |
| **BZX55B2V4** | 2.35 | 2.45 | 5 | 85 | 1 | 600 | 50 | 1 |
| **BZX55B2V7** | 2.65 | 2.75 | 5 | 85 | 1 | 600 | 10 | 1 |
| **BZX55B3V0** | 2.94 | 3.06 | 5 | 85 | 1 | 600 | 4 | 1 |
| **BZX55B3V3** | 3.23 | 3.37 | 5 | 85 | 1 | 600 | 2 | 1 |
| **BZX55B3V6** | 3.53 | 3.67 | 5 | 85 | 1 | 600 | 2 | 1 |
| **BZX55B3V9** | 3.82 | 3.98 | 5 | 85 | 1 | 600 | 2 | 1 |
| **BZX55B4V3** | 4.21 | 4.39 | 5 | 75 | 1 | 600 | 1 | 1 |
| **BZX55B4V7** | 4.61 | 4.79 | 5 | 60 | 1 | 600 | 0.5 | 1 |
| **BZX55B5V1** | 5.00 | 5.20 | 5 | 35 | 1 | 550 | 0.1 | 1 |
| **BZX55B5V6** | 5.49 | 5.71 | 5 | 25 | 1 | 450 | 0.1 | 1 |
| **BZX55B6V2** | 6.08 | 6.32 | 5 | 10 | 1 | 200 | 0.1 | 2 |

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## ELECTRICAL RATINGS ($T_A$=25℃ unless otherwise specified)

| TYPE NUMBER[1] | ZENER VOLTAGE RANGE [2] | | | ZENER IMPEDANCE [3] | | | LEAKAGE CURRENT [1] | |
|---|---|---|---|---|---|---|---|---|
| | $V_Z$@$I_{ZT}$ | | $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$ | $I_{ZK}$ | $Z_{ZK}$ @ $I_{ZK}$ | $I_R$ @ $V_R$ | $V_R$ |
| | Min(V) | Max(V) | mA | Ω | mA | Ω | μA | V |
| **BZX55B6V8** | 6.66 | 6.94 | 5 | 8 | 1 | 150 | 0.1 | 3 |
| **BZX55B7V5** | 7.33 | 7.63 | 5 | 7 | 1 | 50 | 0.1 | 5 |
| **BZX55B8V2** | 8.04 | 8.36 | 5 | 7 | 1 | 50 | 0.1 | 6.2 |
| **BZX55B9V1** | 8.92 | 9.28 | 5 | 10 | 1 | 50 | 0.1 | 6.8 |
| **BZX55B10** | 9.80 | 10.20 | 5 | 15 | 1 | 70 | 0.1 | 7.5 |
| **BZX55B11** | 10.78 | 11.22 | 5 | 20 | 1 | 70 | 0.1 | 8.2 |
| **BZX55B12** | 11.76 | 12.24 | 5 | 20 | 1 | 90 | 0.1 | 9.1 |
| **BZX55B13** | 12.74 | 13.26 | 5 | 26 | 1 | 110 | 0.1 | 10 |
| **BZX55B15** | 14.7 | 15.3 | 5 | 30 | 1 | 110 | 0.1 | 11 |
| **BZX55B16** | 15.68 | 16.32 | 5 | 40 | 1 | 170 | 0.1 | 12 |
| **BZX55B18** | 17.64 | 18.36 | 5 | 50 | 1 | 170 | 0.1 | 13 |
| **BZX55B20** | 19.60 | 20.40 | 5 | 55 | 1 | 220 | 0.1 | 15 |
| **BZX55B22** | 21.56 | 22.44 | 5 | 55 | 1 | 220 | 0.1 | 16 |
| **BZX55B24** | 23.52 | 24.48 | 5 | 80 | 1 | 220 | 0.1 | 18 |
| **BZX55B27** | 26.46 | 27.54 | 5 | 80 | 1 | 220 | 0.1 | 20 |
| **BZX55B30** | 29.40 | 30.60 | 5 | 80 | 1 | 220 | 0.1 | 22 |
| **BZX55B33** | 32.34 | 33.66 | 5 | 80 | 1 | 220 | 0.1 | 24 |
| **BZX55B36** | 35.28 | 36.72 | 5 | 80 | 1 | 220 | 0.1 | 27 |
| **BZX55B39** | 38.22 | 39.78 | 2.5 | 90 | 0.5 | 500 | 0.1 | 28 |
| **BZX55B43** | 42.14 | 43.86 | 2.5 | 90 | 0.5 | 600 | 0.1 | 32 |
| **BZX55B47** | 46.06 | 47.94 | 2.5 | 110 | 0.5 | 700 | 0.1 | 35 |
| **BZX55B51** | 49.98 | 52.02 | 2.5 | 125 | 0.5 | 700 | 0.1 | 38 |
| **BZX55B56** | 54.88 | 57.12 | 2.5 | 135 | 0.5 | 1000 | 0.1 | 42 |
| **BZX55B62** | 60.76 | 63.24 | 2.5 | 150 | 0.5 | 1000 | 0.1 | 47 |
| **BZX55B68** | 66.64 | 69.36 | 2.5 | 160 | 0.5 | 1000 | 0.1 | 51 |
| **BZX55B75** | 73.50 | 76.50 | 2.5 | 170 | 0.5 | 1000 | 0.1 | 56 |
| $V_F$ Forward Voltage=1.0V Maximum @ $I_F$=100mA for all types. | | | | | | | | |

Notes:

1. TOLERANCE AND VOLTAGE DESIGNATION
   The type numbers listed have zener voltage as shown.
2. ZENER VOLTAGE ($V_Z$) MEASUREMENT
   The zener voltage is measured under pulse conditions such that $T_J$ is no more than 2℃ above $T_A$.
3. ZENER IMPEDANCE ($Z_Z$) DERIVATION
   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 ($I_{ZT}$) is superimposed to $I_{ZT}$ .

## RATINGS AND CHARACTERISTIC CURVES

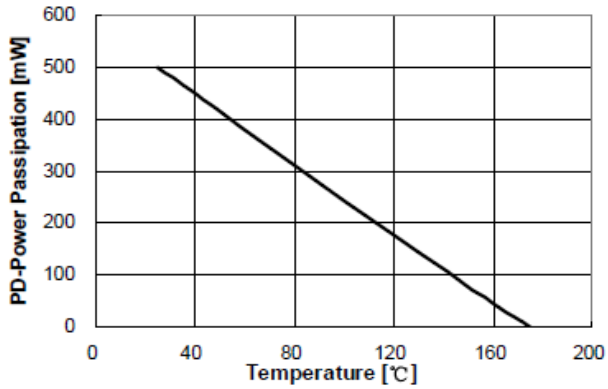


**Figure 1. Power Dissipation vs Ambient Temperature**
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

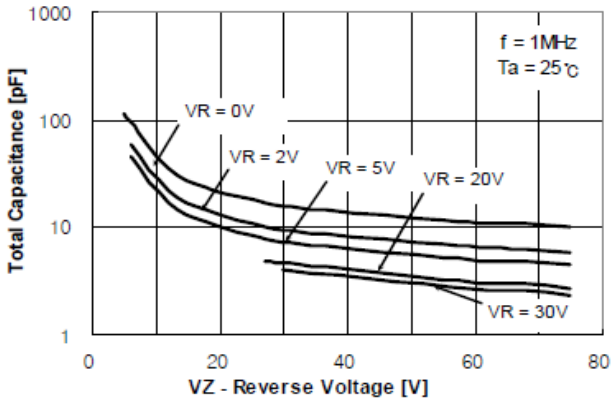


**Figure 2. Total Capacitance**

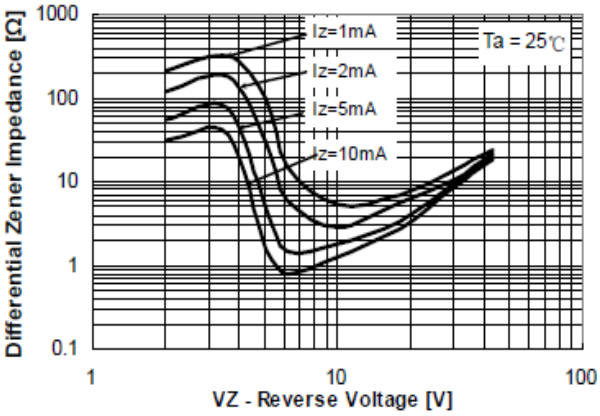


**Figure 3. Differential Impedance vs. Zener Voltage**

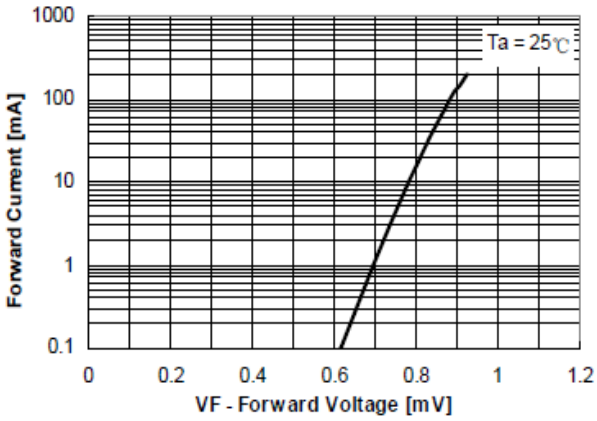


**Figure 4. Forward Current vs. Forward Voltage**

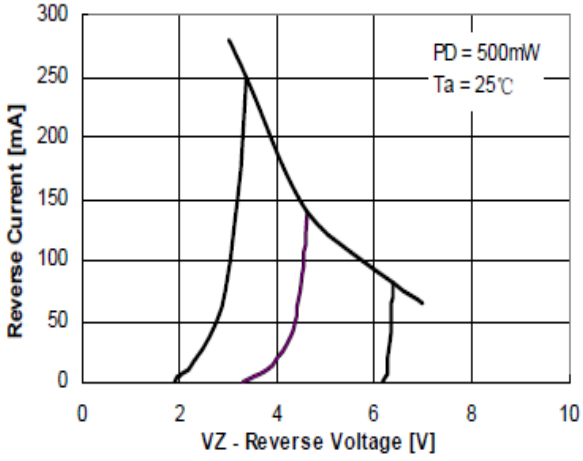


**Figure 5. Reverse Current vs. Reverse Voltage**

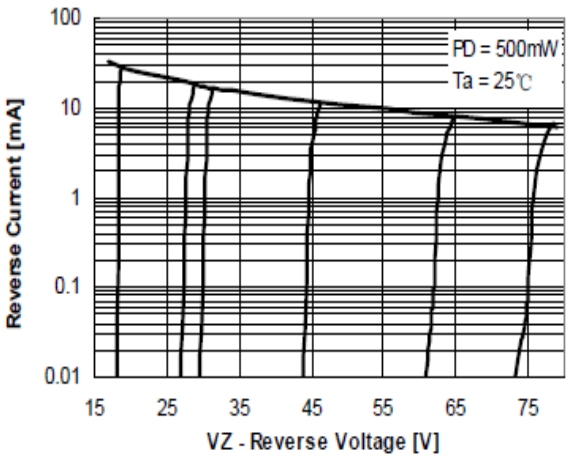


**Figure 6. Reverse Current vs. Reverse Voltage**