

BZX85B Series

Silicon Zener Diodes



V_Z : 2.4 - 220 Volts
 P_D : 1.3 Watts



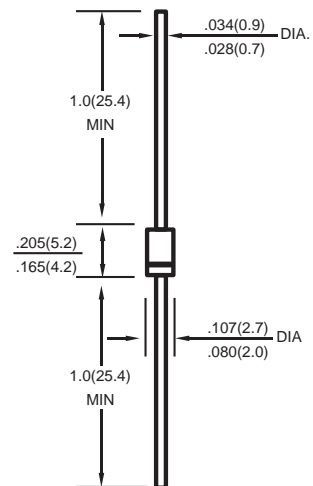
Features

- ✧ Complete Voltage Range 2.4 to 220 Volts
- ✧ High peak reverse power dissipation
- ✧ High reliability
- ✧ Low leakage current
- ✧ **Pb / RoHS Free**

Mechanical Data

- ✧ Case : DO-41 Molded plastic
- ✧ Epoxy : UL94V-0 rate flame retardant
- ✧ Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- ✧ Polarity : Color band denotes cathode end
- ✧ Mounting position : Any
- ✧ Weight : 0.34 gram

DO-41



Dimensions in inches and (millimeters)

MAXIMUM RATINGS

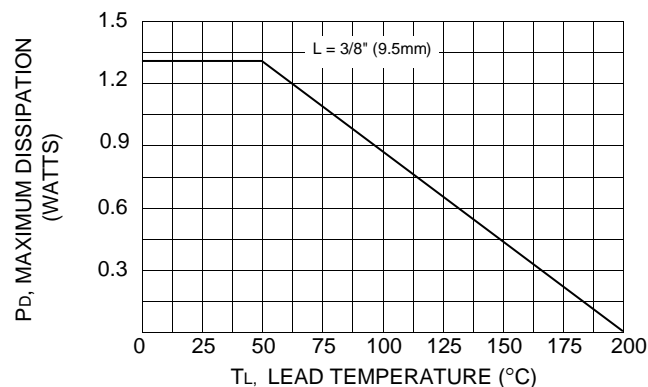
Rating at 25 °C ambient temperature unless otherwise specified

| Rating | Symbol | Value | Unit |
|--|-----------------|---------------|-------|
| DC Power Dissipation at $T_L = 50\text{ °C}$ (Note1) | P_D | 1.3 | W |
| Maximum Forward Voltage at $I_F = 200\text{ mA}$ | V_F | 1.2 | V |
| Maximum Thermal Resistance Junction to Ambient Air (Note2) | $R_{\theta JA}$ | 130 | K / W |
| Junction Temperature Range | T_J | - 65 to + 200 | °C |
| Storage Temperature Range | T_{STG} | - 65 to + 200 | °C |

Notes :

- (1) T_L = Lead temperature at 3/8 " (9.5mm) from body
- (2) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case.

Fig. 1 POWER TEMPERATURE DERATING



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ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

| TYPE | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC Zener Current |
|-----------|-----------------------|----------|-------------------------|-------------------|----------|---------------------------------|----------|--------------------------|
| | $V_Z @ I_{ZT}$ | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | $I_R @ V_R$ | I_{ZM} | |
| | (V) | (mA) | (Ω) | (Ω) | (mA) | (μ A) | (V) | (mA) |
| BZX85B2V4 | 2.4 | 80 | 20 | 400 | 1.0 | 150 | 1.0 | 410 |
| BZX85B2V7 | 2.7 | 80 | 20 | 400 | 1.0 | 150 | 1.0 | 370 |
| BZX85B3V0 | 3.0 | 80 | 20 | 400 | 1.0 | 100 | 1.0 | 340 |
| BZX85B3V3 | 3.3 | 80 | 20 | 400 | 1.0 | 40 | 1.0 | 320 |
| BZX85B3V6 | 3.6 | 70 | 20 | 500 | 1.0 | 20 | 1.0 | 290 |
| BZX85B3V9 | 3.9 | 60 | 15 | 500 | 1.0 | 10 | 1.0 | 280 |
| BZX85B4V3 | 4.3 | 50 | 13 | 500 | 1.0 | 3.0 | 1.0 | 250 |
| BZX85B4V7 | 4.7 | 45 | 13 | 500 | 1.0 | 3.0 | 1.0 | 215 |
| BZX85B5V1 | 5.1 | 45 | 10 | 500 | 1.0 | 1.0 | 1.5 | 200 |
| BZX85B5V6 | 5.6 | 45 | 7.0 | 400 | 1.0 | 1.0 | 2.0 | 190 |
| BZX85B6V2 | 6.2 | 35 | 4.0 | 300 | 1.0 | 1.0 | 3.0 | 170 |
| BZX85B6V8 | 6.8 | 35 | 3.5 | 300 | 1.0 | 50 | 4.0 | 155 |
| BZX85B7V5 | 7.5 | 35 | 3.0 | 200 | 0.5 | 50 | 4.5 | 140 |
| BZX85B8V2 | 8.2 | 25 | 5.0 | 200 | 0.5 | 50 | 6.2 | 130 |
| BZX85B9V1 | 9.1 | 25 | 5.0 | 200 | 0.5 | 50 | 6.8 | 120 |
| BZX85B10 | 10 | 25 | 7.0 | 200 | 0.5 | 50 | 7.5 | 105 |
| BZX85B11 | 11 | 20 | 8.0 | 300 | 0.5 | 50 | 8.2 | 97 |
| BZX85B12 | 12 | 20 | 9.0 | 350 | 0.5 | 0.5 | 9.1 | 88 |
| BZX85B13 | 13 | 20 | 10 | 400 | 0.5 | 0.5 | 10 | 79 |
| BZX85B15 | 15 | 15 | 15 | 500 | 0.5 | 0.5 | 11 | 71 |
| BZX85B16 | 16 | 15 | 15 | 500 | 0.5 | 0.5 | 12 | 66 |
| BZX85B18V | 18 | 15 | 20 | 500 | 0.5 | 0.5 | 13 | 62 |
| BZX85B19 | 19 | 15 | 20 | 550 | 0.5 | 0.5 | 14 | 58 |
| BZX85B20 | 20 | 10 | 24 | 600 | 0.5 | 0.5 | 15 | 56 |
| BZX85B22 | 22 | 10 | 25 | 600 | 0.5 | 0.5 | 16 | 52 |
| BZX85B24 | 24 | 10 | 25 | 600 | 0.5 | 0.5 | 18 | 47 |
| BZX85B27 | 27 | 8.0 | 30 | 750 | 0.25 | 0.5 | 20 | 41 |
| BZX85B30 | 30 | 8.0 | 30 | 1000 | 0.25 | 0.5 | 22 | 36 |
| BZX85B33 | 33 | 8.0 | 35 | 1000 | 0.25 | 0.5 | 24 | 33 |
| BZX85B36 | 36 | 8.0 | 40 | 1000 | 0.25 | 0.5 | 27 | 30 |
| BZX85B39 | 39 | 6.0 | 50 | 1000 | 0.25 | 0.5 | 30 | 28 |
| BZX85B43 | 43 | 6.0 | 50 | 1000 | 0.25 | 0.5 | 33 | 26 |
| BZX85B47V | 47 | 4.0 | 90 | 1500 | 0.25 | 0.5 | 36 | 23 |
| BZX85B51 | 51 | 4.0 | 115 | 1500 | 0.25 | 0.5 | 39 | 21 |
| BZX85B56 | 56 | 4.0 | 120 | 2000 | 0.25 | 0.5 | 43 | 19 |
| BZX85B62 | 62 | 4.0 | 125 | 2000 | 0.25 | 0.5 | 47 | 16 |
| BZX85B68 | 68 | 4.0 | 130 | 2000 | 0.25 | 0.5 | 51 | 15 |
| BZX85B75 | 75 | 4.0 | 135 | 2000 | 0.25 | 0.5 | 56 | 14 |
| BZX85B82V | 82 | 2.7 | 200 | 3000 | 0.25 | 0.5 | 62 | 12 |
| BZX85B91 | 91 | 2.7 | 250 | 3000 | 0.25 | 0.5 | 68 | 10 |
| BZX85B100 | 100 | 2.7 | 350 | 3000 | 0.25 | 0.5 | 75 | 9.4 |
| BZX85B110 | 110 | 2.7 | 450 | 4000 | 0.25 | 0.5 | 82 | 8.6 |
| BZX85B120 | 120 | 2.0 | 550 | 4500 | 0.25 | 0.5 | 91 | 7.8 |
| BZX85B130 | 130 | 2.0 | 700 | 5000 | 0.25 | 0.5 | 100 | 7.0 |
| BZX85B150 | 150 | 2.0 | 1000 | 6000 | 0.25 | 0.5 | 110 | 6.4 |
| BZX85B160 | 160 | 1.5 | 1100 | 6500 | 0.25 | 0.5 | 120 | 5.8 |
| BZX85B180 | 180 | 1.5 | 1200 | 7000 | 0.25 | 0.5 | 130 | 5.2 |
| BZX85B200 | 200 | 1.5 | 1900 | 9990 | 0.25 | 0.5 | 150 | 4.7 |
| BZX85B220 | 220 | 1.5 | 1500 | 8000 | 0.25 | 0.5 | 167 | 4.5 |

Notes :

- (1) The type number listed have a standard tolerance on the nominal zener voltage of $\pm 2.0\%$.
- (2) " BZX " will be omitted in marking on the diode

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