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# MZ85B3V0~MZ85B200

# SILICON ZENER DIODES

## $V_Z$ : 3.0 - 200 Volts
## $P_D$ : 1.3 Watts

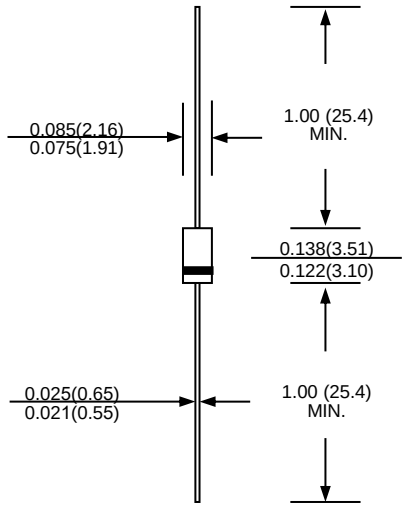
### FEATURES :

* Complete Voltage Range 3.0 to 200 Volts
* High peak reverse power dissipation
* High reliability
* Low leakage current
* Pb / RoHS Free

### MECHANICAL DATA :

* Case : M1A Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.20 gram (approximately)

**M1A**




**Dimensions in inches and ( millimeters )**

### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

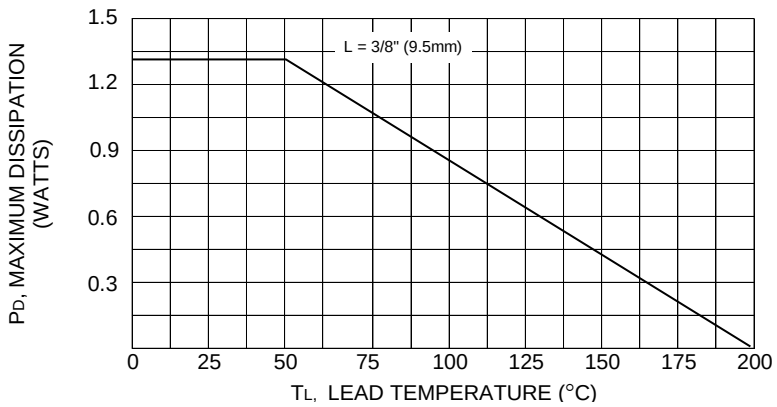
| Rating | Symbol | Value | Unit |
|---|---|---|---|
| DC Power Dissipation at $T_L$ = 50 °C (Note1) | $P_D$ | 1.3 | W |
| Maximum Forward Voltage at $I_F$ = 200 mA | $V_F$ | 1.2 | V |
| Maximum Thermal Resistance Junction to Ambient Air (Note2) | $R_{\Theta JA}$ | 130 | K / W |
| Junction Temperature 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 CURVE**



## 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) | (μA) | (V) | (mA) |
| **MZ85B3V0** | 3.0 | 80 | 20 | 400 | 1.0 | 100 | 1.0 | 340 |
| **MZ85B3V3** | 3.3 | 80 | 20 | 400 | 1.0 | 40 | 1.0 | 320 |
| **MZ85B3V6** | 3.6 | 70 | 20 | 500 | 1.0 | 20 | 1.0 | 290 |
| **MZ85B3V9** | 3.9 | 60 | 15 | 500 | 1.0 | 10 | 1.0 | 280 |
| **MZ85B4V3** | 4.3 | 50 | 13 | 500 | 1.0 | 3.0 | 1.0 | 250 |
| **MZ85B4V7** | 4.7 | 45 | 13 | 500 | 1.0 | 3.0 | 1.0 | 215 |
| **MZ85B5V1** | 5.1 | 45 | 10 | 500 | 1.0 | 1.0 | 1.5 | 200 |
| **MZ85B5V6** | 5.6 | 45 | 7.0 | 400 | 1.0 | 1.0 | 2.0 | 190 |
| **MZ85B6V2** | 6.2 | 35 | 4.0 | 300 | 1.0 | 1.0 | 3.0 | 170 |
| **MZ85B6V8** | 6.8 | 35 | 3.5 | 300 | 1.0 | 50 | 4.0 | 155 |
| **MZ85B7V5** | 7.5 | 35 | 3.0 | 200 | 0.5 | 50 | 4.5 | 140 |
| **MZ85B8V2** | 8.2 | 25 | 5.0 | 200 | 0.5 | 50 | 6.2 | 130 |
| **MZ85B9V1** | 9.1 | 25 | 5.0 | 200 | 0.5 | 50 | 6.8 | 120 |
| **MZ85B10** | 10 | 25 | 7.0 | 200 | 0.5 | 50 | 7.5 | 105 |
| **MZ85B11** | 11 | 20 | 8.0 | 300 | 0.5 | 50 | 8.2 | 97 |
| **MZ85B12** | 12 | 20 | 9.0 | 350 | 0.5 | 0.5 | 9.1 | 88 |
| **MZ85B13** | 13 | 20 | 10 | 400 | 0.5 | 0.5 | 10 | 79 |
| **MZ85B15** | 15 | 15 | 15 | 500 | 0.5 | 0.5 | 11 | 71 |
| **MZ85B16** | 16 | 15 | 15 | 500 | 0.5 | 0.5 | 12 | 66 |
| **MZ85B18** | 18 | 15 | 20 | 500 | 0.5 | 0.5 | 13 | 62 |
| **MZ85B19** | 19 | 15 | 20 | 550 | 0.5 | 0.5 | 14 | 58 |
| **MZ85B20** | 20 | 10 | 24 | 600 | 0.5 | 0.5 | 15 | 56 |
| **MZ85B22** | 22 | 10 | 25 | 600 | 0.5 | 0.5 | 16 | 52 |
| **MZ85B24** | 24 | 10 | 25 | 600 | 0.5 | 0.5 | 18 | 47 |
| **MZ85B27** | 27 | 8.0 | 30 | 750 | 0.25 | 0.5 | 20 | 41 |
| **MZ85B30** | 30 | 8.0 | 30 | 1000 | 0.25 | 0.5 | 22 | 36 |
| **MZ85B33** | 33 | 8.0 | 35 | 1000 | 0.25 | 0.5 | 24 | 33 |
| **MZ85B36** | 36 | 8.0 | 40 | 1000 | 0.25 | 0.5 | 27 | 30 |
| **MZ85B39** | 39 | 6.0 | 50 | 1000 | 0.25 | 0.5 | 30 | 28 |
| **MZ85B43** | 43 | 6.0 | 50 | 1000 | 0.25 | 0.5 | 33 | 26 |
| **MZ85B47** | 47 | 4.0 | 90 | 1500 | 0.25 | 0.5 | 36 | 23 |
| **MZ85B51** | 51 | 4.0 | 115 | 1500 | 0.25 | 0.5 | 39 | 21 |
| **MZ85B56** | 56 | 4.0 | 120 | 2000 | 0.25 | 0.5 | 43 | 19 |
| **MZ85B62** | 62 | 4.0 | 125 | 2000 | 0.25 | 0.5 | 47 | 16 |
| **MZ85B68** | 68 | 4.0 | 130 | 2000 | 0.25 | 0.5 | 51 | 15 |
| **MZ85B75** | 75 | 4.0 | 135 | 2000 | 0.25 | 0.5 | 56 | 14 |
| **MZ85B82** | 82 | 2.7 | 200 | 3000 | 0.25 | 0.5 | 62 | 12 |
| **MZ85B91** | 91 | 2.7 | 250 | 3000 | 0.25 | 0.5 | 68 | 10 |
| **MZ85B100** | 100 | 2.7 | 350 | 3000 | 0.25 | 0.5 | 75 | 9.4 |
| **MZ85B110** | 110 | 2.7 | 450 | 4000 | 0.25 | 0.5 | 82 | 8.6 |
| **MZ85B120** | 120 | 2.0 | 550 | 4500 | 0.25 | 0.5 | 91 | 7.8 |
| **MZ85B130** | 130 | 2.0 | 700 | 5000 | 0.25 | 0.5 | 100 | 7.0 |
| **MZ85B150** | 150 | 2.0 | 1000 | 6000 | 0.25 | 0.5 | 110 | 6.4 |
| **MZ85B160** | 160 | 1.5 | 1100 | 6500 | 0.25 | 0.5 | 120 | 5.8 |
| **MZ85B180** | 180 | 1.5 | 1200 | 7000 | 0.25 | 0.5 | 130 | 5.2 |
| **MZ85B200** | 200 | 1.5 | 1900 | 9990 | 0.25 | 0.5 | 150 | 4.7 |

**Note :**

(1) The type number listed have a standard tolerance on the nominal zener voltage of ± 2%.