



# 1EZ110D5 THRU 1EZ200D5

## 1 WATT SILICON ZENER DIODE



### FEATURES

- \* Zener voltage 110V to 200V
- \* Withstands large surge stresses
- \* Also available in glass. (See Note 6).

### MECHANICAL CHARACTERISTICS

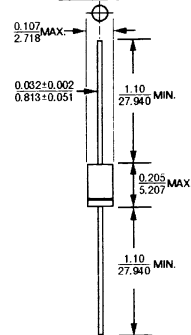
- \* CASE: Molded encapsulation, axial lead package.
- \* FINISH: Corrosion resistant. Leads are solderable.
- \* THERMAL RESISTANCE: 75°C/Watt.
- \* POLARITY: Banded end is cathode.
- \* WEIGHT: 0.4 grams (Typical).

### MAXIMUM RATINGS

Junction and Storage Temperatures: - 65°C to + 175°C  
 DC Power Dissipation: 1 Watt  
 Power Derating: 13.3mW/°C above 100°C  
 Forward Voltage @ 200mA: 1.2 Volts

**VOLTAGE RANGE**  
110 to 200 Volts

### DO-41



All dimensions in  $\frac{\text{inches}}{\text{mm}}$

### \* ELECTRICAL CHARACTERISTICS @ 25°C

| JEDEC TYPE NUMBER (Note 1) | NOMINAL ZENER VOLTAGE (Note 2 & 5) |     | MAXIMUM ZENER IMPEDANCE Note 3 |                   |      | MAXIMUM RATED ZENER CURRENT @ 100°C | TYPICAL TEMP. COEF. OF ZENER VOLTAGE | MAXIMUM SURGE CURRENT IS |          |
|----------------------------|------------------------------------|-----|--------------------------------|-------------------|------|-------------------------------------|--------------------------------------|--------------------------|----------|
|                            | $V_Z @ I_{ZT}$                     |     | $Z_{ZT} @ I_{ZT}$              | $Z_{ZK} @ I_{ZK}$ |      |                                     |                                      |                          | $I_{ZM}$ |
|                            | VOLTS                              | mA  | OHMS                           | OHMS              | mA   |                                     |                                      |                          | mA       |
| 1EZ110D5                   | 110                                | 2.3 | 570                            | 5200              | 0.25 | 8.3                                 | +0.095                               | 0.15                     |          |
| 1EZ120D5                   | 120                                | 2.0 | 710                            | 5800              | 0.25 | 8.0                                 | +0.095                               | 0.14                     |          |
| 1EZ130D5                   | 130                                | 1.9 | 910                            | 6500              | 0.25 | 6.9                                 | +0.095                               | 0.13                     |          |
| 1EZ140D5                   | 140                                | 1.8 | 1100                           | 7000              | 0.25 | 6.5                                 | +0.095                               | 0.12                     |          |
| 1EZ150D5                   | 150                                | 1.7 | 1300                           | 7500              | 0.25 | 5.7                                 | +0.095                               | 0.12                     |          |
| 1EZ160D5                   | 160                                | 1.6 | 1400                           | 8000              | 0.25 | 5.4                                 | +0.095                               | 0.11                     |          |
| 1EZ170D5                   | 170                                | 1.5 | 1450                           | 8500              | 0.25 | 5.2                                 | +0.095                               | 0.10                     |          |
| 1EZ180D5                   | 180                                | 1.4 | 1500                           | 9000              | 0.25 | 4.9                                 | +0.095                               | 0.10                     |          |
| 1EZ190D5                   | 190                                | 1.3 | 1700                           | 9500              | 0.25 | 4.7                                 | +0.095                               | 0.10                     |          |
| 1EZ200D5                   | 200                                | 1.2 | 1900                           | 10000             | 0.25 | 4.6                                 | +0.100                               | 0.10                     |          |

**NOTE 1** Suffix 5 indicates  $\pm 5\%$  tolerance. Suffix 10 indicates  $\pm 10\%$ , no suffix indicates  $\pm 20\%$ . Also, Suffix 1 indicates  $\pm 1\%$ , 2nd suffix indicates  $\pm 2\%$  on  $V_Z$  tolerance.

**NOTE 2** Zener voltage ( $V_Z$ ) is measured in still air at a temperature of 25°C. The test currents ( $I_{ZT}$ ) have been selected so that at nominal voltages the dissipation is a constant 0.25 watts. This results in a nominal junction temperature rise of 10°C.

### \* JEDEC Registered Data

**NOTE 3** The zener impedance is derived from the 60 Hz 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 on  $I_{ZT}$  or  $I_{ZK}$ .

**NOTE 4** Maximum Surge Current is a non recurrent maximum peak reverse surge with a pulse width of 8.3 milliseconds at  $T_A$  25°C (+8, -2°C)

**NOTE 5** Voltage measurements to be performed 90 seconds after application of DC current.

## RATINGS AND CHARACTERISTIC CURVES

(1EZ110D5 THRU 1EZ200D5)

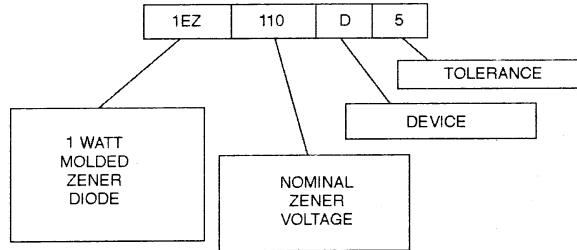


FIGURE 1

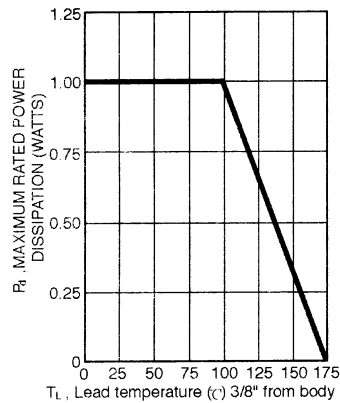


FIGURE 2 POWER DERATING CURVE