

- 1N962B-1 THRU 1N986B-1 AVAILABLE IN JAN, JANTX AND JANTXV  
PER MIL-PRF-19500/117
- METALLURGICALLY BONDED
- DOUBLE PLUG CONSTRUCTION

1N957 thru 1N986B  
and  
1N962B-1 thru 1N986B-1

## MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C  
Storage Temperature: -65°C to +175°C  
DC Power Dissipation: 500 mW @ +50°C  
Power Derating: 4 mW / °C above +50°C  
Forward Voltage @ 200mA: 1.1volts maximum

## ELECTRICAL CHARACTERISTICS @ 25°C

| JEDEC<br>TYPE<br>NUMBER<br><br>(NOTE 1) | NOMINAL<br>ZENER<br>VOLTAGE<br>$V_Z$<br>(NOTE 2) | ZENER<br>TEST<br>CURRENT<br>$I_{ZT}$ | MAXIMUM ZENER IMPEDANCE<br><br>(NOTE 3) |      |                   | MAX. DC<br>ZENER<br>CURRENT<br>$I_{ZM}$ | MAX. REVERSE<br>LEAKAGE CURRENT<br><br>$I_R @ V_R$ |       |
|---|--|--------------------------------------|---|------|-------------------|---|--|-------|
|   |  |                                      | $Z_{ZT} @ I_{ZT}$                       |      | $Z_{ZK} @ I_{ZK}$ |   | $\mu A$  | VOLTS |
|   |  |                                      | OHMS                                    | OHMS |                   |   |  |       |
| 1N957B                                  | 6.8  | 18.5                                 | 4.5                                     | 700  | 1.0               | 55                                      | 5  | 5.2   |
| 1N958B                                  | 7.5  | 16.5                                 | 5.5                                     | 700  | .5                | 50                                      | 5  | 5.7   |
| 1N959B                                  | 8.2  | 15.0                                 | 6.5                                     | 700  | .5                | 45                                      | 5  | 6.2   |
| 1N960B                                  | 9.1  | 14.0                                 | 7.5                                     | 700  | .5                | 41                                      | 5  | 6.9   |
| 1N961B                                  | 10   | 12.5                                 | 8.5                                     | 700  | .25               | 38                                      | 2  | 7.6   |
| 1N962B                                  | 11   | 11.5                                 | 9.5                                     | 700  | .25               | 32                                      | 1  | 8.4   |
| 1N963B                                  | 12   | 10.5                                 | 11.5                                    | 700  | .25               | 31                                      | 1  | 9.1   |
| 1N964B                                  | 13   | 9.5                                  | 13                                      | 700  | .25               | 28                                      | 0.5  | 9.9   |
| 1N965B                                  | 15   | 8.5                                  | 16                                      | 700  | .25               | 25                                      | 0.5  | 11    |
| 1N966B                                  | 16   | 7.8                                  | 17                                      | 700  | .25               | 24                                      | 0.5  | 12    |
| 1N967B                                  | 18   | 7.0                                  | 21                                      | 750  | .25               | 20                                      | 0.5  | 14    |
| 1N968B                                  | 20   | 6.2                                  | 25                                      | 750  | .25               | 18                                      | 0.5  | 15    |
| 1N969B                                  | 22   | 5.6                                  | 29                                      | 750  | .25               | 16                                      | 0.5  | 17    |
| 1N970B                                  | 24   | 5.2                                  | 33                                      | 750  | .25               | 15                                      | 0.5  | 18    |
| 1N971B                                  | 27   | 4.6                                  | 41                                      | 750  | .25               | 13                                      | 0.5  | 21    |
| 1N972B                                  | 30   | 4.2                                  | 49                                      | 1000 | .25               | 12                                      | 0.5  | 23    |
| 1N973B                                  | 33   | 3.8                                  | 58                                      | 1000 | .25               | 11                                      | 0.5  | 25    |
| 1N974B                                  | 36   | 3.4                                  | 70                                      | 1000 | .25               | 10                                      | 0.5  | 27    |
| 1N975B                                  | 39   | 3.2                                  | 90                                      | 1000 | .25               | 9.5                                     | 0.5  | 30    |
| 1N976B                                  | 43   | 3.0                                  | 93                                      | 1500 | .25               | 8.8                                     | 0.5  | 33    |
| 1N977B                                  | 47   | 2.7                                  | 105                                     | 1500 | .25               | 7.9                                     | 0.5  | 36    |
| 1N978B                                  | 51   | 2.5                                  | 125                                     | 1500 | .25               | 7.4                                     | 0.5  | 39    |
| 1N979B                                  | 56   | 2.2                                  | 150                                     | 2000 | .25               | 6.8                                     | 0.5  | 43    |
| 1N980B                                  | 62   | 2.0                                  | 185                                     | 2000 | .25               | 6.0                                     | 0.5  | 47    |
| 1N981B                                  | 68   | 1.8                                  | 230                                     | 2000 | .25               | 5.5                                     | 0.5  | 52    |
| 1N982B                                  | 75   | 1.7                                  | 270                                     | 2000 | .25               | 5.0                                     | 0.5  | 56    |
| 1N983B                                  | 82   | 1.5                                  | 330                                     | 3000 | .25               | 4.6                                     | 0.5  | 62    |
| 1N984B                                  | 91   | 1.4                                  | 400                                     | 3000 | .25               | 4.1                                     | 0.5  | 69    |
| 1N985B                                  | 100  | 1.3                                  | 500                                     | 3000 | .25               | 3.7                                     | 0.5  | 76    |
| 1N986B                                  | 110  | 1.1                                  | 750                                     | 4000 | .25               | 3.3                                     | 0.5  | 84    |

**NOTE 1** Zener voltage tolerance on "B" suffix is  $\pm 5\%$ . Suffix letter A denotes +10%. No Suffix denotes  $\pm 20\%$  tolerance, "C" suffix denotes  $\pm 2\%$  and "D" suffix denotes  $\pm 1\%$ .

**NOTE 2** Zener voltage is measured with the device junction in thermal equilibrium at an ambient temperature of  $25^\circ\text{C} \pm 3^\circ\text{C}$ .

**NOTE 3** Zener impedance is derived by superimposing on  $I_{ZT}$  A 60Hz rms a.c. current equal to 10% of  $I_{ZT}$

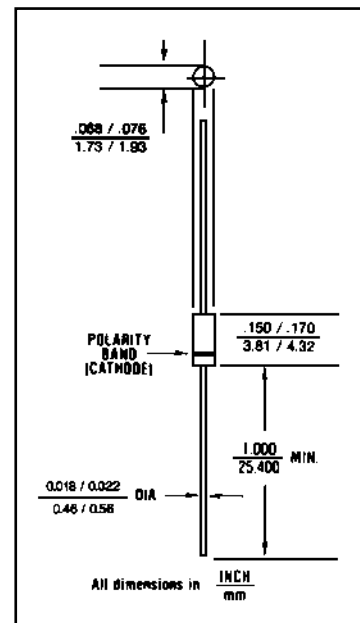


FIGURE 1

## DESIGN DATA

**CASE:** Hermetically sealed glass case. DO – 35 outline.

**LEAD MATERIAL:** Copper clad steel.

**LEAD FINISH:** Tin / Lead

**THERMAL RESISTANCE: ( $R_{\theta JC}$ ):** 250 °C/W maximum at L = .375 inch

**THERMAL IMPEDANCE: ( $Z_{\theta JX}$ ):** 35 °C/W maximum

**POLARITY:** Diode to be operated with the banded (cathode) end positive.

**MOUNTING POSITION:** Any.

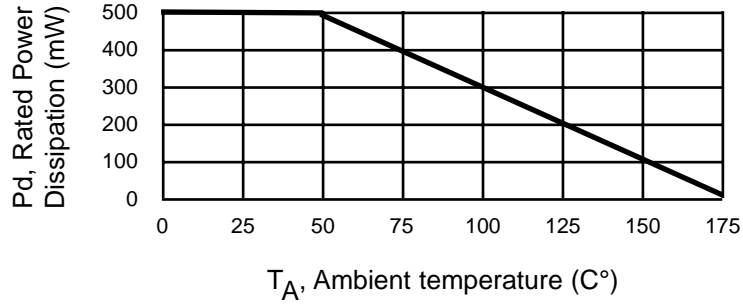


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# 1N957 thru 1N986B INCLUDING -1 VERSIONS

FIGURE 2



POWER DERATING CURVE

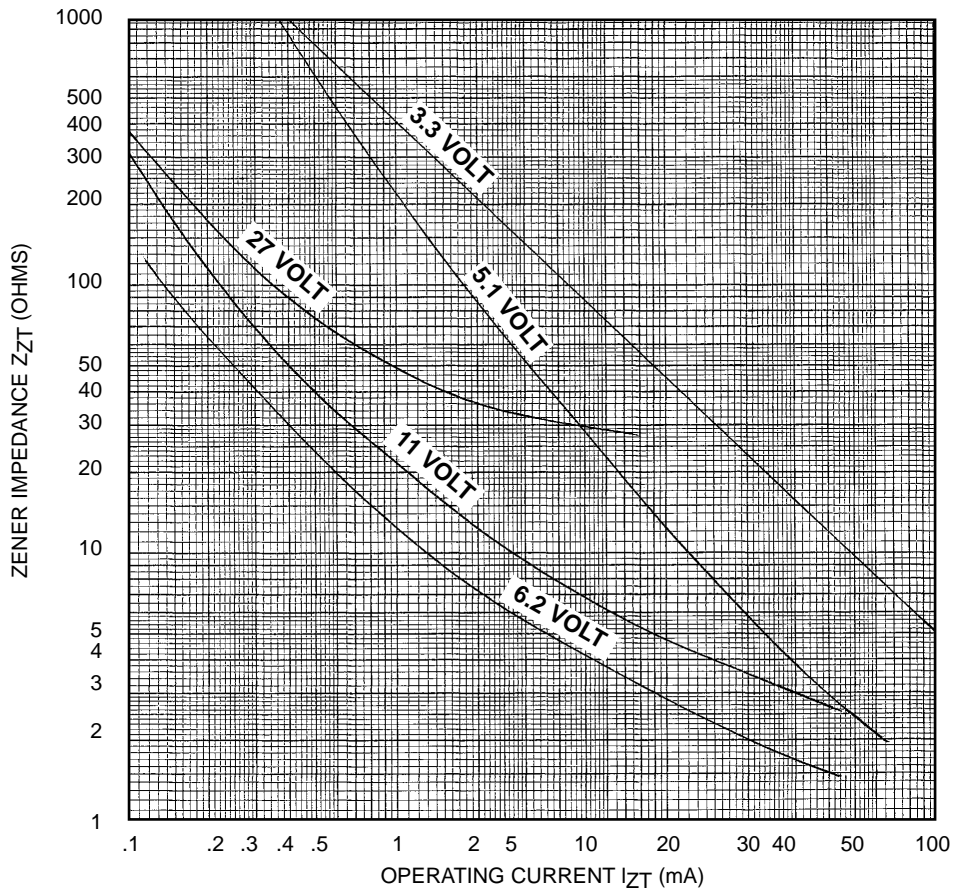


FIGURE 3

ZENER IMPEDANCE VS. OPERATING CURRENT