

- 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><br>V <sub>Z</sub><br>(NOTE 2) | ZENER<br>TEST<br>CURRENT<br><br>I <sub>ZT</sub> | MAXIMUM ZENER IMPEDANCE |                                 |                | MAX. DC<br>ZENER<br>CURRENT<br><br>I <sub>ZM</sub> | MAX. REVERSE<br>LEAKAGE CURRENT<br><br>I <sub>R</sub> @ V <sub>R</sub> |     |
|-----------------------------------------|---------------------------------------------------------------|-------------------------------------------------|-------------------------|---------------------------------|----------------|----------------------------------------------------|------------------------------------------------------------------------|-----|
|                                         |                                                               |                                                 | (NOTE 3)                |                                 |                |                                                    |                                                                        |     |
|                                         | Z <sub>ZT</sub> @ I <sub>ZT</sub>                             | Z <sub>ZK</sub> @ I <sub>ZK</sub>               | I <sub>ZM</sub>         | I <sub>R</sub> @ V <sub>R</sub> | V <sub>R</sub> |                                                    |                                                                        |     |
| VOLTS                                   | mA                                                            | OHMS                                            | OHMS                    | mA                              | mA             | μA                                                 | VOLTS                                                                  |     |
| 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  $\pm 10\%$ . 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  $I_{ZT}$

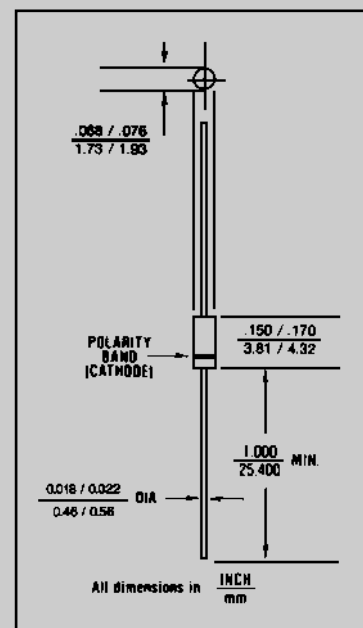


FIGURE 1

## 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  $^\circ\text{C/W}$  maximum at  $L = .375$  inch

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

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

**MOUNTING POSITION:** Any.

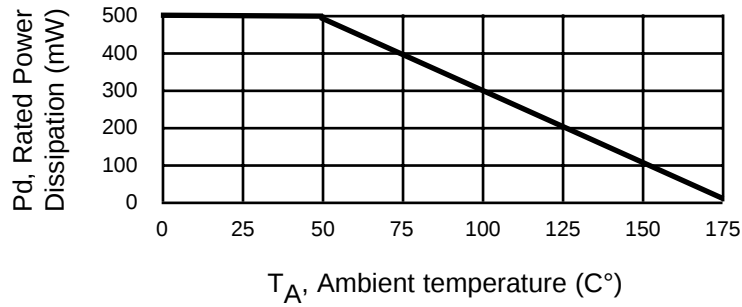


6 LAKE STREET, LAWRENCE, MASSACHUSETTS 01841  
PHONE (978) 620-2600  
WEBSITE: <http://www.microsemi.com>

FAX (978) 689-0803

# 1N957 thru 1N986B INCLUDING -1 VERSIONS

FIGURE 2



POWER DERATING CURVE

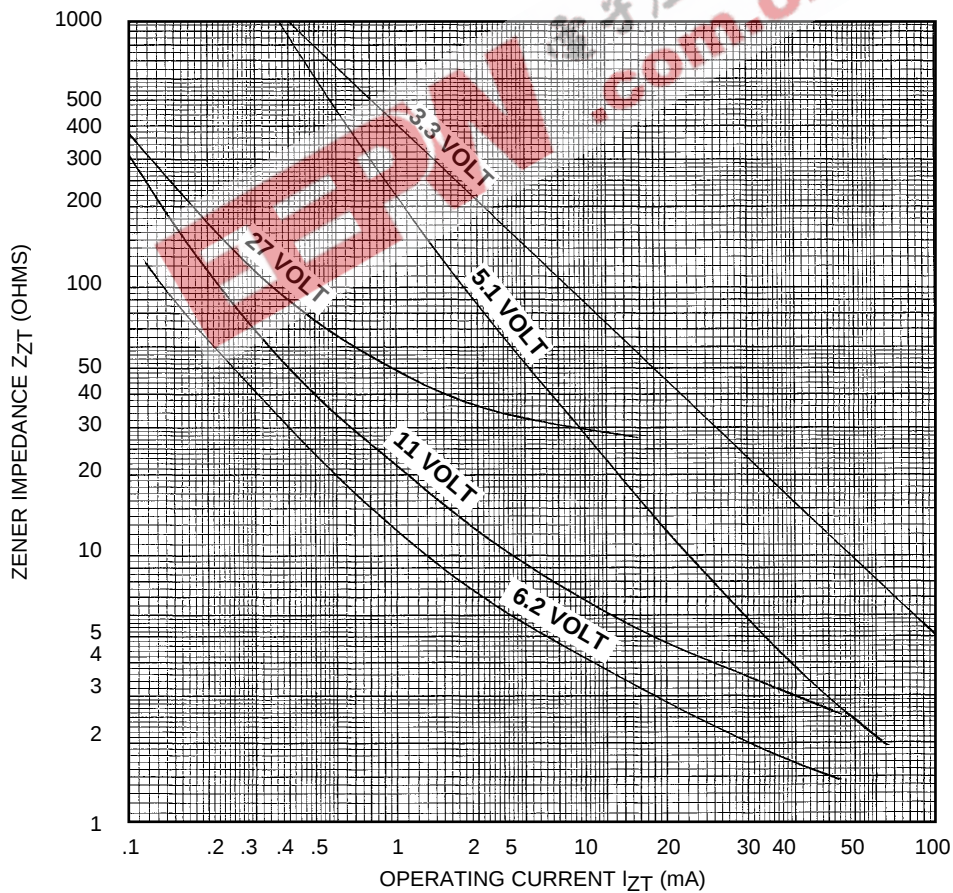


FIGURE 3

ZENER IMPEDANCE VS. OPERATING CURRENT