

- 1N935B-1, 1N937B-1 AND 1N938B-1 AVAILABLE IN JAN, JANTX, JANTXV AND JANS PER MIL-PRF-19500/156
- 9.0 VOLT NOMINAL ZENER VOLTAGE
- TEMPERATURE COMPENSATED ZENER REFERENCE DIODES
- METALLURGICALLY BONDED

1N935 thru 1N938B  
and  
1N935B-1 thru 1N938B-1

## MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C  
Storage Temperature: -65°C to +175°C  
DC Power Dissipation: 500mW @ +50°C  
Power Derating: 4 mW / °C above +50°C

## REVERSE LEAKAGE CURRENT

$I_R = 10 \mu A$  @ 25°C &  $V_R = 6 Vdc$

ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified.

| JEDEC<br>TYPE<br>NUMBER | ZENER<br>VOLTAGE<br>$V_Z @ I_{ZT}$ | ZENER<br>TEST<br>CURRENT<br>$I_{ZT}$ | MAXIMUM<br>ZENER<br>IMPEDANCE<br>(Note 1)<br>$Z_{ZT}$ | VOLTAGE<br>TEMPERATURE<br>STABILITY<br>$\Delta V_{ZT}$<br>MAXIMUM<br>(Note 2) | TEMPERATURE<br>RANGE | EFFECTIVE<br>TEMPERATURE<br>COEFFICIENT |
|-------------------------|------------------------------------|--------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------|----------------------|-----------------------------------------|
|                         | VOLTS                              | mA                                   | OHMS                                                  | mV                                                                            | °C                   | % / °C                                  |
| 1N935                   | 8.55—9.45                          | 7.5                                  | 20                                                    | 67                                                                            | 0 to +75             | 0.01                                    |
| 1N935A                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 139                                                                           | -55 to +100          | 0.01                                    |
| 1N935B                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 184                                                                           | -55 to +150          | 0.01                                    |
| 1N936                   | 8.55—9.45                          | 7.5                                  | 20                                                    | 34                                                                            | 0 to +75             | 0.005                                   |
| 1N936A                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 70                                                                            | -55 to +100          | 0.005                                   |
| 1N936B                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 92                                                                            | -55 to +150          | 0.005                                   |
| 1N937                   | 8.55—9.45                          | 7.5                                  | 20                                                    | 13                                                                            | 0 to +75             | 0.002                                   |
| 1N937A                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 28                                                                            | -55 to +100          | 0.002                                   |
| 1N937B                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 37                                                                            | -55 to +150          | 0.002                                   |
| 1N938                   | 8.55—9.45                          | 7.5                                  | 20                                                    | 6.7                                                                           | 0 to +75             | 0.001                                   |
| 1N938A                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 13.9                                                                          | -55 to +100          | 0.001                                   |
| 1N938B                  | 8.55—9.45                          | 7.5                                  | 20                                                    | 19                                                                            | -55 to +150          | 0.001                                   |

**NOTE 1** Zener impedance is derived by superimposing on  $I_{ZT}$  A 60Hz rms a.c. current equal to 10% of  $I_{ZT}$ .

**NOTE 2** The maximum allowable change observed over the entire temperature range i.e., the diode voltage will not exceed the specified mV at any discrete temperature between the established limits, per JEDEC standard No. 5.

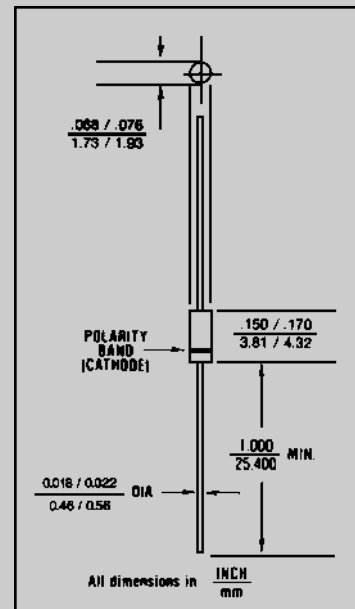


FIGURE 1

## DESIGN DATA

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

**LEAD MATERIAL:** Copper clad steel.

**LEAD FINISH:** Tin / Lead

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

**MOUNTING POSITION:** Any.

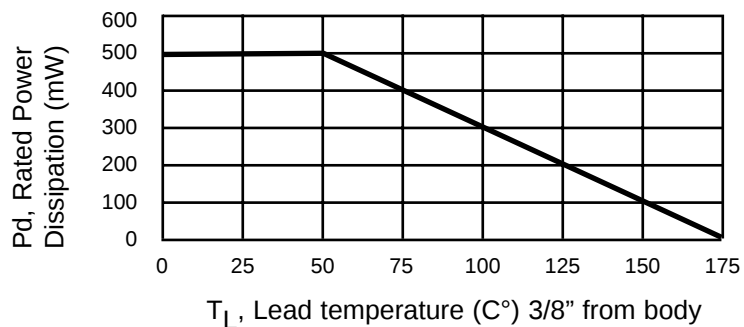


6 LAKE STREET, LAWRENCE, MASSACHUSETTS 01841  
PHONE (978) 620-2600  
WEBSITE: <http://www.microsemi.com>

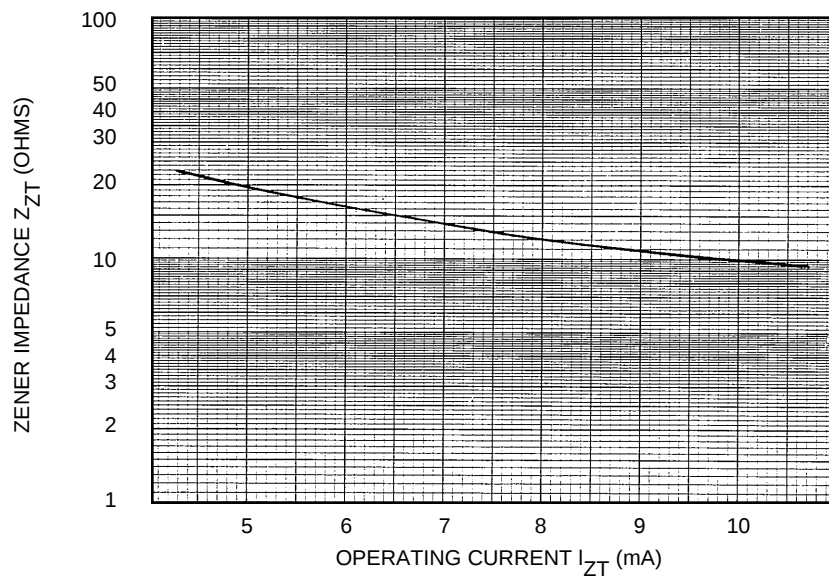
FAX (978) 689-0803

# 1N935 thru 1N938B

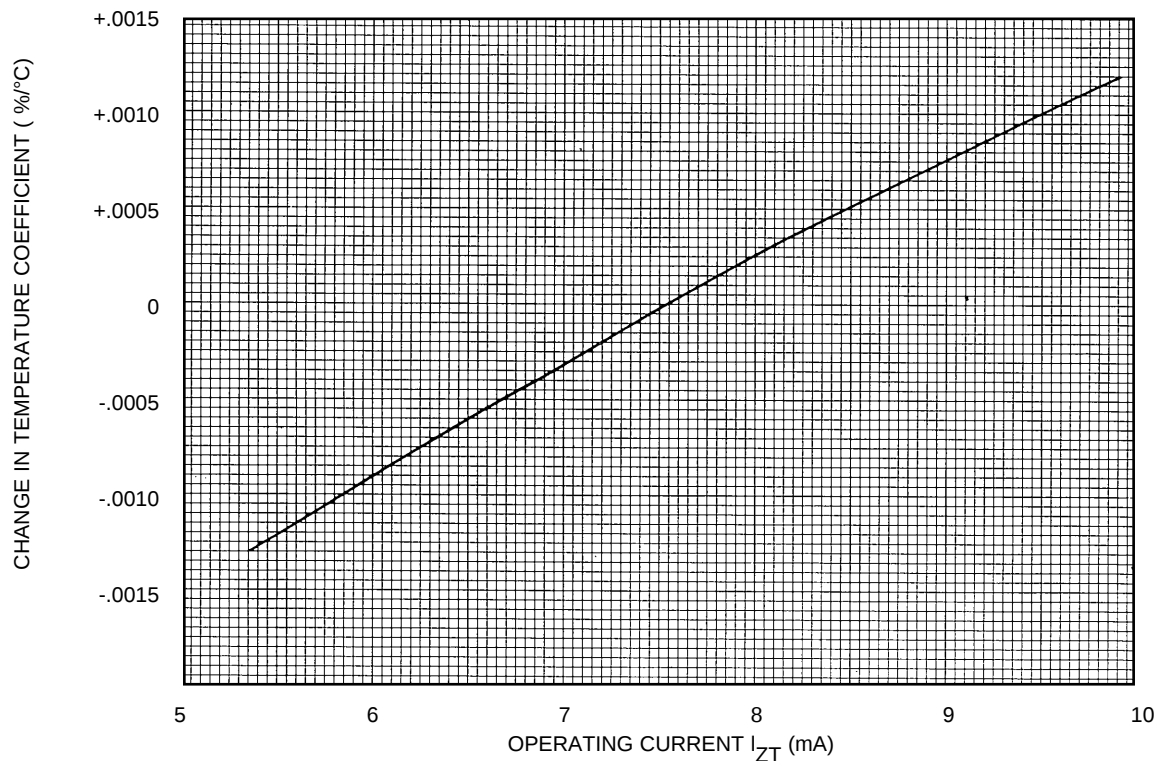
## INCLUDING -1 VERSIONS



**FIGURE 2**  
**POWER DERATING CURVE**



**FIGURE 3**  
**ZENER IMPEDANCE VS. OPERATING CURRENT**



**FIGURE 4**  
**TYPICAL CHANGE OF TEMPERATURE COEFFICIENT**  
**WITH CHANGE IN OPERATING CURRENT**