

- 8.5 VOLT NOMINAL ZENER VOLTAGE  $\pm 5\%$
- TEMPERATURE COMPENSATED ZENER REFERENCE DIODES
- LOW CURRENT RANGE: 0.5 AND 1.0 mA
- METALLURGICALLY BONDED
- DOUBLE PLUG CONSTRUCTION

1N4775  
thru  
1N4784A

## 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 &  $V_R = 6 V_{dc}$

ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified.

| JEDEC<br>TYPE<br>NUMBER | ZENER<br>VOLTAGE<br>$V_Z @ I_{ZT}$<br>(Note 3) | ZENER<br>TEST<br>CURRENT<br>$I_{ZT}$ | MAXIMUM<br>DYNAMIC<br>IMPEDANCE<br>$Z_{ZT}$<br>(Note 1) | VOLTAGE<br>TEMPERATURE<br>STABILITY<br>$\Delta V_{ZT}$<br>(Note 2) | TEMPERATURE<br>RANGE | EFFECTIVE<br>TEMPERATURE<br>COEFFICIENT |
|-------------------------|------------------------------------------------|--------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------|----------------------|-----------------------------------------|
|                         | VOLTS                                          | mA                                   | OHMS                                                    | mV                                                                 | °C                   | % / °C                                  |
| 1N4775                  | 8.5                                            | 0.5                                  | 200                                                     | 64                                                                 | 0 to +75             | 0.01                                    |
| 1N4775A                 | 8.5                                            | 0.5                                  | 200                                                     | 132                                                                | -55 to +100          | 0.01                                    |
| 1N4776                  | 8.5                                            | 0.5                                  | 200                                                     | 32                                                                 | 0 to +75             | 0.005                                   |
| 1N4776A                 | 8.5                                            | 0.5                                  | 200                                                     | 66                                                                 | -55 to +100          | 0.005                                   |
| 1N4777                  | 8.5                                            | 0.5                                  | 200                                                     | 13                                                                 | 0 to +75             | 0.002                                   |
| 1N4777A                 | 8.5                                            | 0.5                                  | 200                                                     | 26                                                                 | -55 to +100          | 0.002                                   |
| 1N4778                  | 8.5                                            | 0.5                                  | 200                                                     | 6.4                                                                | 0 to +75             | 0.001                                   |
| 1N4778A                 | 8.5                                            | 0.5                                  | 200                                                     | 13                                                                 | -55 to +100          | 0.001                                   |
| 1N4779                  | 8.5                                            | 0.5                                  | 200                                                     | 3.2                                                                | 0 to +75             | 0.0005                                  |
| 1N4779A                 | 8.5                                            | 0.5                                  | 200                                                     | 6.6                                                                | -55 to +100          | 0.0005                                  |
| 1N4780                  | 8.5                                            | 1.0                                  | 100                                                     | 64                                                                 | 0 to +75             | 0.01                                    |
| 1N4780A                 | 8.5                                            | 1.0                                  | 100                                                     | 132                                                                | -55 to +100          | 0.01                                    |
| 1N4781                  | 8.5                                            | 1.0                                  | 100                                                     | 32                                                                 | 0 to +75             | 0.005                                   |
| 1N4781A                 | 8.5                                            | 1.0                                  | 100                                                     | 66                                                                 | -55 to +100          | 0.005                                   |
| 1N4782                  | 8.5                                            | 1.0                                  | 100                                                     | 13                                                                 | 0 to +75             | 0.002                                   |
| 1N4782A                 | 8.5                                            | 1.0                                  | 100                                                     | 26                                                                 | -55 to +100          | 0.002                                   |
| 1N4783                  | 8.5                                            | 1.0                                  | 100                                                     | 6.4                                                                | 0 to +75             | 0.001                                   |
| 1N4783A                 | 8.5                                            | 1.0                                  | 100                                                     | 13                                                                 | -55 to +100          | 0.001                                   |
| 1N4784                  | 8.5                                            | 1.0                                  | 100                                                     | 3.2                                                                | 0 to +75             | 0.0005                                  |
| 1N4784A                 | 8.5                                            | 1.0                                  | 100                                                     | 6.6                                                                | -55 to +100          | 0.0005                                  |

**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.

**NOTE 3** Zener voltage range equals 8.5 volts  $\pm 5\%$ .

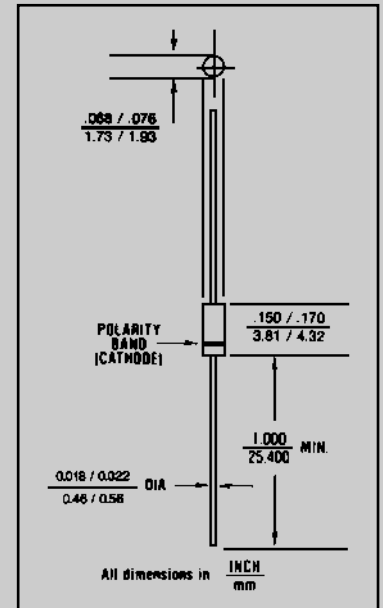


FIGURE 1

## DESIGN DATA

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

**LEAD MATERIAL:** Copper clad steel.

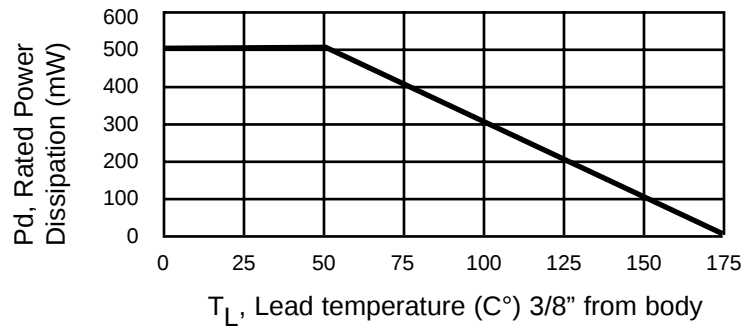
**LEAD FINISH:** Tin / Lead

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

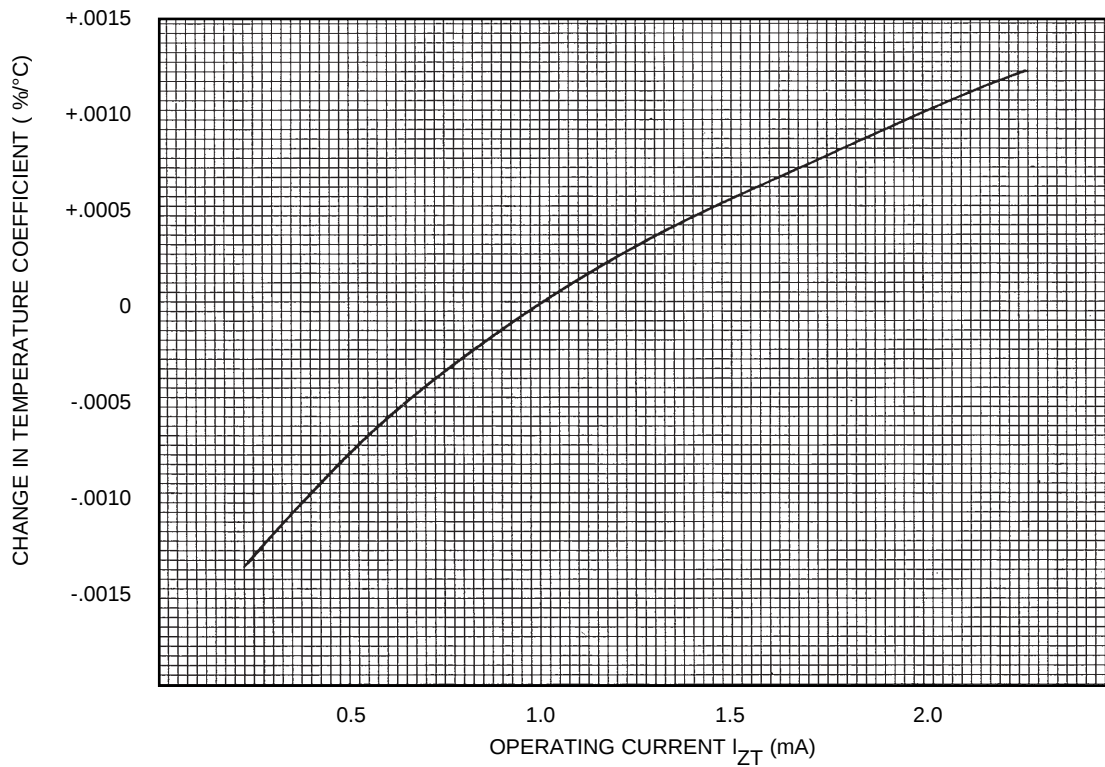
**MOUNTING POSITION:** ANY.



# 1N4775 thru 1N4784A



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



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