

- 1N5283-1 THRU 1N5314-1 AVAILABLE IN JAN, JANTX, JANTXV AND JANS  
PER MIL-PRF-19500/463
- CURRENT REGULATOR DIODES
- HIGH SOURCE IMPEDANCE
- METALLURGICALLY BONDED
- DOUBLE PLUG CONSTRUCTION

1N5283 thru 1N5314  
and  
1N5283-1 thru 1N5314-1

## MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C

Storage Temperature: -65°C to +175°C

DC Power Dissipation: 500mW @  $T_L = +50^\circ\text{C}$ ,  $L = 3/8"$

Power Derating: 4 mW / °C above +50°C

Peak Operating Voltage: 100 Volts

## ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified

| TYPE<br>NUMBER | REGULATOR CURRENT<br>$I_p$ (mA) @ $V_S = 25V$ |       |       | MINIMUM<br>DYNAMIC<br>IMPEDANCE<br>@ $V_S = 25V$<br>$Z_S$ (M)<br>(Note 1) | MINIMUM<br>KNEE<br>IMPEDANCE<br>@ $V_K = 6.0V$<br>$Z_K$ (M)<br>(Note 2) | MAXIMUM<br>LIMITING<br>VOLTAGE<br>@ $I_L = 0.8 I_p$ (min)<br>$V_L$ (VOLTS) |
|----------------|-----------------------------------------------|-------|-------|---------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------|
|                | NOM                                           | MIN   | MAX   |                                                                           |                                                                         |                                                                            |
| 1N5283         | 0.22                                          | 0.198 | 0.242 | 25.0                                                                      | 2.75                                                                    | 1.00                                                                       |
| 1N5284         | 0.24                                          | 0.216 | 0.264 | 19.0                                                                      | 2.35                                                                    | 1.00                                                                       |
| 1N5285         | 0.27                                          | 0.243 | 0.297 | 14.0                                                                      | 1.95                                                                    | 1.00                                                                       |
| 1N5286         | 0.30                                          | 0.270 | 0.330 | 9.0                                                                       | 1.60                                                                    | 1.00                                                                       |
| 1N5287         | 0.33                                          | 0.297 | 0.363 | 6.6                                                                       | 1.35                                                                    | 1.00                                                                       |
| 1N5288         | 0.39                                          | 0.351 | 0.429 | 4.10                                                                      | 1.00                                                                    | 1.05                                                                       |
| 1N5289         | 0.43                                          | 0.387 | 0.473 | 3.30                                                                      | 0.870                                                                   | 1.05                                                                       |
| 1N5290         | 0.47                                          | 0.423 | 0.517 | 2.70                                                                      | 0.750                                                                   | 1.05                                                                       |
| 1N5291         | 0.56                                          | 0.504 | 0.616 | 1.90                                                                      | 0.560                                                                   | 1.10                                                                       |
| 1N5292         | 0.62                                          | 0.558 | 0.682 | 1.55                                                                      | 0.470                                                                   | 1.13                                                                       |
| 1N5293         | 0.68                                          | 0.612 | 0.748 | 1.35                                                                      | 0.400                                                                   | 1.15                                                                       |
| 1N5294         | 0.75                                          | 0.675 | 0.825 | 1.15                                                                      | 0.335                                                                   | 1.20                                                                       |
| 1N5295         | 0.82                                          | 0.738 | 0.902 | 1.00                                                                      | 0.290                                                                   | 1.25                                                                       |
| 1N5296         | 0.91                                          | 0.819 | 1.001 | 0.880                                                                     | 0.240                                                                   | 1.29                                                                       |
| 1N5297         | 1.00                                          | 0.900 | 1.100 | 0.800                                                                     | 0.205                                                                   | 1.35                                                                       |
| 1N5298         | 1.10                                          | 0.990 | 1.210 | 0.700                                                                     | 0.180                                                                   | 1.40                                                                       |
| 1N5299         | 1.20                                          | 1.08  | 1.32  | 0.640                                                                     | 0.155                                                                   | 1.45                                                                       |
| 1N5300         | 1.30                                          | 1.17  | 1.43  | 0.580                                                                     | 0.135                                                                   | 1.50                                                                       |
| 1N5301         | 1.40                                          | 1.26  | 1.54  | 0.540                                                                     | 0.115                                                                   | 1.55                                                                       |
| 1N5302         | 1.50                                          | 1.35  | 1.65  | 0.510                                                                     | 0.105                                                                   | 1.60                                                                       |
| 1N5303         | 1.60                                          | 1.44  | 1.76  | 0.475                                                                     | 0.092                                                                   | 1.65                                                                       |
| 1N5304         | 1.80                                          | 1.62  | 1.98  | 0.420                                                                     | 0.074                                                                   | 1.75                                                                       |
| 1N5305         | 2.00                                          | 1.80  | 2.20  | 0.395                                                                     | 0.061                                                                   | 1.85                                                                       |
| 1N5306         | 2.20                                          | 1.98  | 2.42  | 0.370                                                                     | 0.052                                                                   | 1.95                                                                       |
| 1N5307         | 2.40                                          | 2.16  | 2.64  | 0.345                                                                     | 0.044                                                                   | 2.00                                                                       |
| 1N5308         | 2.70                                          | 2.43  | 2.97  | 0.320                                                                     | 0.035                                                                   | 2.15                                                                       |
| 1N5309         | 3.00                                          | 2.70  | 3.30  | 0.300                                                                     | 0.029                                                                   | 2.25                                                                       |
| 1N5310         | 3.30                                          | 2.97  | 3.63  | 0.280                                                                     | 0.024                                                                   | 2.35                                                                       |
| 1N5311         | 3.60                                          | 3.24  | 3.96  | 0.265                                                                     | 0.020                                                                   | 2.50                                                                       |
| 1N5312         | 3.90                                          | 3.51  | 4.29  | 0.255                                                                     | 0.017                                                                   | 2.60                                                                       |
| 1N5313         | 4.30                                          | 3.87  | 4.73  | 0.245                                                                     | 0.014                                                                   | 2.75                                                                       |
| 1N5314         | 4.70                                          | 4.23  | 5.17  | 0.235                                                                     | 0.012                                                                   | 2.90                                                                       |

**NOTE 1**  $Z_S$  is derived by superimposing A 90Hz RMS signal equal to 10% of  $V_S$  on  $V_S$

**NOTE 2**  $Z_K$  is derived by superimposing A 90Hz RMS signal equal to 10% of  $V_K$  on  $V_K$

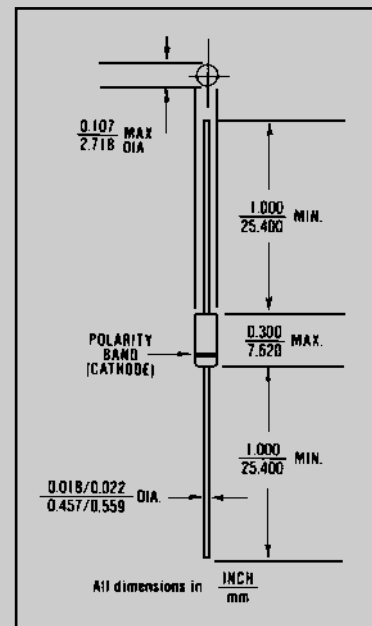


FIGURE 1

## DESIGN DATA

**CASE:** Hermetically sealed glass case. DO - 7 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:** ( $Z_{\theta JX}$ ): 25 °C/W maximum

**POLARITY:** Diode to be operated with the banded (Cathode) end negative.

**WEIGHT:** 0.2 grams.

**MOUNTING POSITION:** Any.



# 1N5283 thru 1N5314 INCLUDING -1 VERSIONS

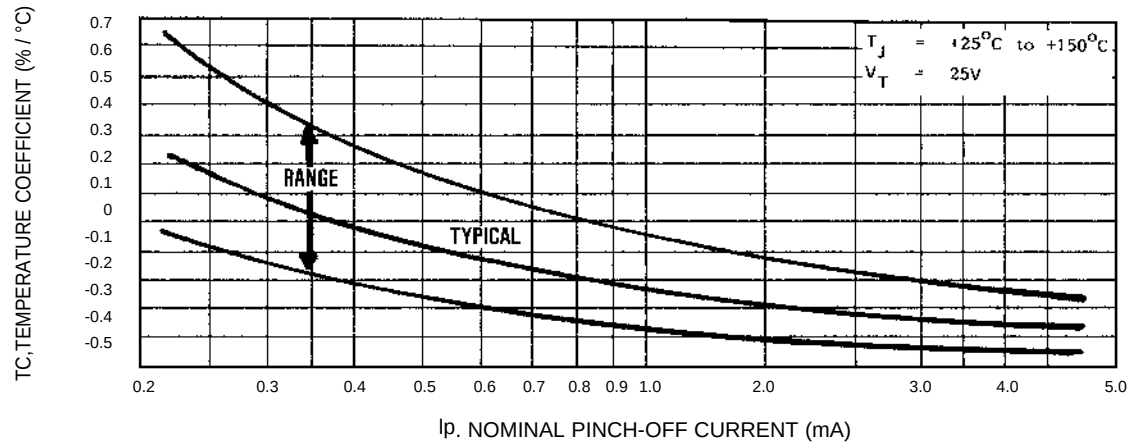


FIGURE 2 TEMPERATURE COEFFICIENT

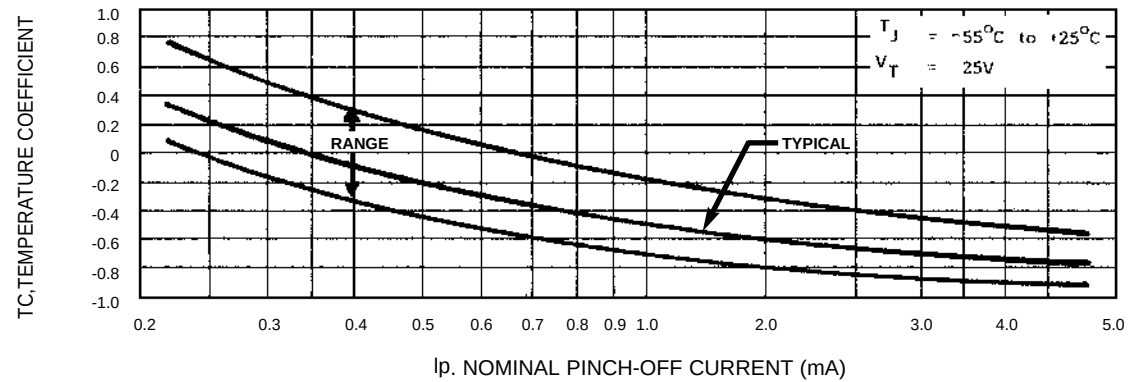


FIGURE 3 TEMPERATURE COEFFICIENT

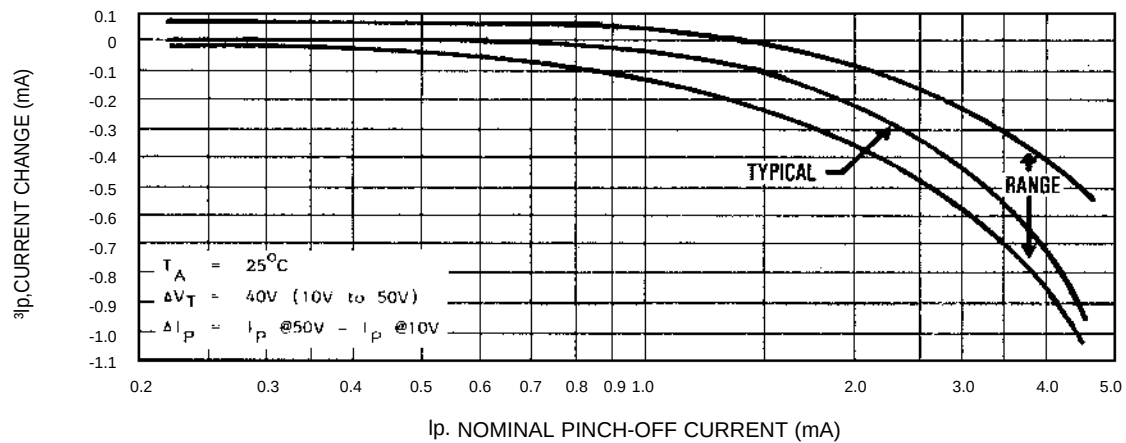


FIGURE 4 CURRENT REGULATION FACTOR