

- AVAILABLE IN JAN, JANTX, JANTXV AND JANS
PER MIL-PRF-19500/533
- 500 mW ZENER DIODES
- NON CAVITY CONSTRUCTION
- METALLURGICALLY BONDED

**1N6309US
THRU
1N6320US**

MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C
 Storage Temperature: -65°C to +175°C
 Power Dissipation: 500 mW @ $T_{EC}=+125^{\circ}C$
 Power Derating: 10 mW/°C above $T_{EC}=+125^{\circ}C$
 Forward Voltage: 1.4V dc @ $I_F=1A$ dc (pulsed)

ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified

| TYPE | V_{Z2} NOM. ±5% @ I_{Z2} | V_{Z1} MIN. @ I_{Z1} 250 μ A | I_{Z2} TEST CURRENT | Z_Z @ I_{Z2} | Z_{ZK} @ 250 μ A | I_{ZM} | V_Z (reg) ΔV_Z (1) | I_{ZSM} SURGE | V_R | I_{R1} @ 25°C | I_{R2} @ $T_A=$ 150°C | N_D @250 μ A 1-3 kHz |
|----------|---------------------------------------|---|-----------------------------|------------------------|------------------------------|----------|------------------------------------|--------------------|-------|-----------------------|----------------------------------|----------------------------------|
| | VOLTS | VOLTS | mA | OHMS | OHMS | mA | VOLTS | AMPS | VOLTS | μ A | μ A | μ V/ \sqrt{Hz} |
| 1N6309US | 2.4 | 1.1 | 20 | 30 | 1200 | 177 | 1.5 | 2.5 | 1.0 | 100 | 200 | 1.0 |
| 1N6310US | 2.7 | 1.2 | 20 | 30 | 1300 | 157 | 1.5 | 2.2 | 1.0 | 60 | 150 | 1.0 |
| 1N6311US | 3.0 | 1.3 | 20 | 29 | 1400 | 141 | 1.5 | 2.0 | 1.0 | 30 | 100 | 1.0 |
| 1N6312US | 3.3 | 1.5 | 20 | 24 | 1400 | 128 | 1.6 | 1.8 | 1.0 | 5.0 | 20 | 1.0 |
| 1N6313US | 3.6 | 1.8 | 20 | 22 | 1400 | 117 | 1.6 | 1.65 | 1.0 | 3.0 | 12 | 1.0 |
| 1N6314US | 3.9 | 2.0 | 20 | 20 | 1700 | 108 | 1.6 | 1.5 | 1.0 | 2.0 | 12 | 1.0 |
| 1N6315US | 4.3 | 2.4 | 20 | 18 | 1400 | 99 | 0.9 | 1.4 | 1.0 | 2.0 | 12 | 1.0 |
| 1N6316US | 4.7 | 2.8 | 20 | 16 | 1500 | 90 | 0.5 | 1.27 | 1.5 | 5.0 | 12 | 1.0 |
| 1N6317US | 5.1 | 3.3 | 20 | 14 | 1300 | 83 | 0.4 | 1.17 | 2.0 | 5.0 | 12 | 1.0 |
| 1N6318US | 5.6 | 4.3 | 20 | 8.0 | 1200 | 76 | 0.4 | 1.10 | 2.5 | 5.0 | 10 | 2.0 |
| 1N6319US | 6.2 | 5.2 | 20 | 3.0 | 800 | 68 | 0.3 | 0.97 | 3.5 | 5.0 | 10 | 5.0 |
| 1N6320US | 6.8 | 6.0 | 20 | 3.0 | 400 | 63 | 0.35 | 1.23 | 4.0 | 2.0 | 50 | 5.0 |

NOTE 1: $\Delta V_Z = V_Z @ 20$ mAdc minus $V_Z @ 2$ mAdc

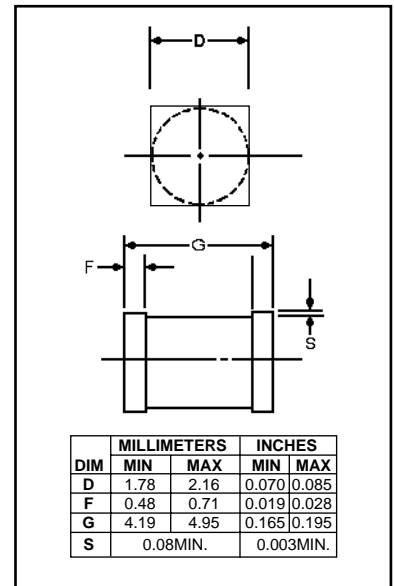


FIGURE 1

DESIGN DATA

CASE: D-5D, Hermetically sealed glass case, per MIL-PRF- 19500/533

LEAD FINISH: Tin / Lead

THERMAL RESISTANCE: ($R_{\theta JC}$): 50 °C/W maximum

THERMAL IMPEDANCE: ($Z_{\theta JX}$): 15 °C/W maximum

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

MOUNTING SURFACE SELECTION:
 The Axial Coefficient of Expansion (COE) of this device is approximately + 4PPM / °C. The COE of the Mounting Surface System should be selected to provide a suitable match with this device.

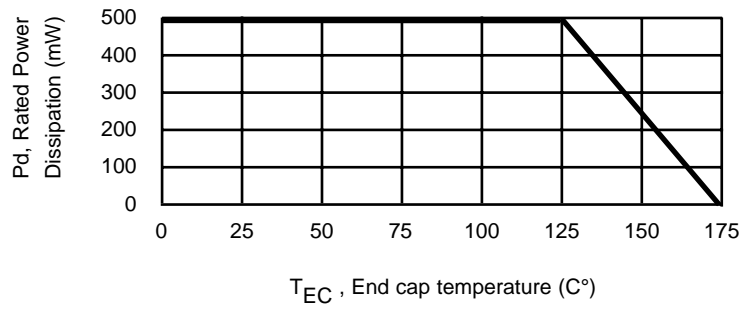


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1N6309US thru 1N6320US

FIGURE 2



POWER DERATING CURVE

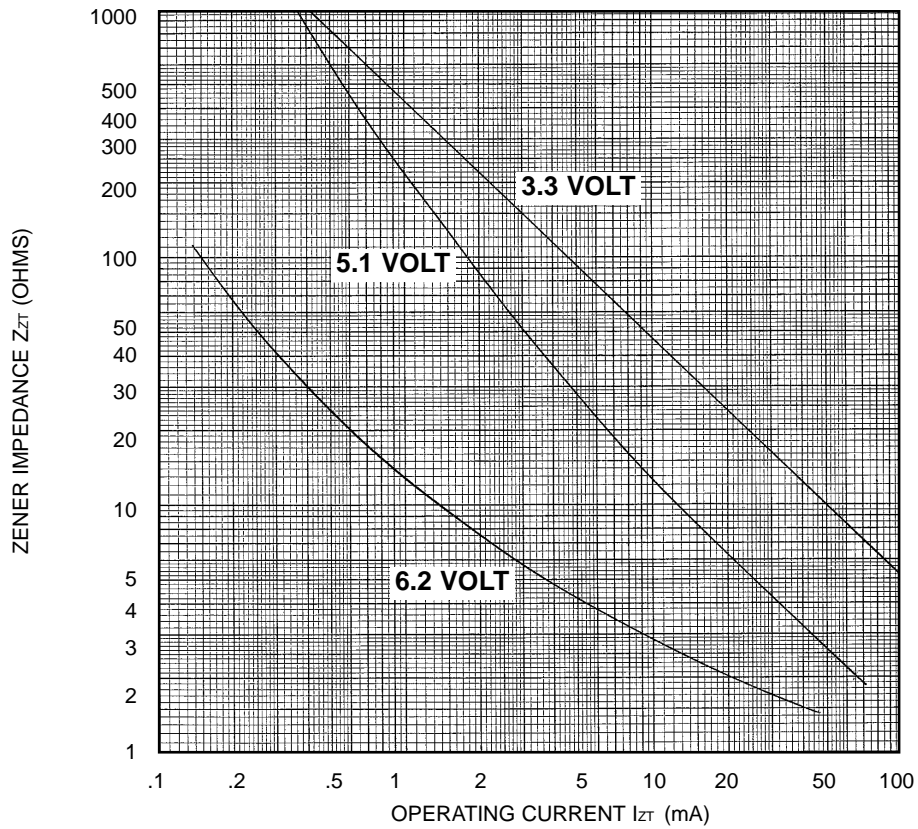


FIGURE 3

ZENER IMPEDANCE VS. OPERATING CURRENT