

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

**1N6309  
THRU  
1N6320**

## MAXIMUM RATINGS

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

Storage Temperature: -65°C to +175°C

Power Dissipation: 500 mW @  $T_L = +75^\circ\text{C}$  @  $L = 3/8"$

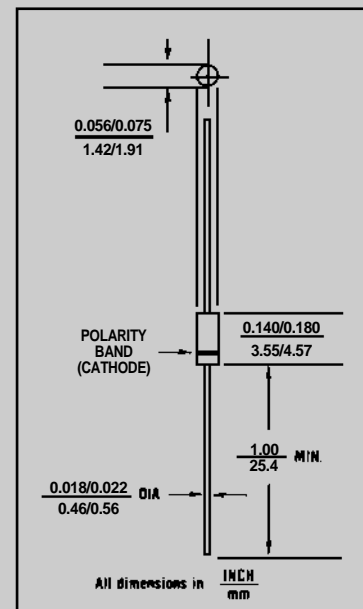
Power Derating: 5mW/°C above  $T_L = +75^\circ\text{C}$

Forward Voltage: 1.4V dc @  $I_F = 1\text{A}$  dc (Pulsed)

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

TYPE	V <sub>Z2</sub> NOM. ±5% @ I <sub>Z2</sub>	V <sub>Z1</sub> MIN. @ I <sub>Z1</sub> 250μA	I <sub>Z2</sub> TEST CURRENT	Z <sub>Z</sub> @ I <sub>Z2</sub>	Z <sub>ZK</sub> @ 250μA	I <sub>ZM</sub>	V <sub>Z</sub> (reg) Δ V <sub>Z</sub> (1)	I <sub>ZSM</sub> SURGE	V <sub>R</sub>	I <sub>R1</sub> @ 25°C	I <sub>R2</sub> @ TA = 150°C	N <sub>D</sub> @ 250 μA 1-3 kHz
	VOLTS	VOLTS	mA	OHMS	OHMS	mA	VOLTS	AMPS	VOLTS	μA	μA	μ
1N6309	2.4	1.1	20	30	1200	177	1.5	2.5	1.0	100	200	1.0
1N6310	2.7	1.2	20	30	1300	157	1.5	2.2	1.0	60	150	1.0
1N6311	3.0	1.3	20	29	1400	141	1.5	2.0	1.0	30	100	1.0
1N6312	3.3	1.5	20	24	1400	128	1.6	1.8	1.0	5.0	20	1.0
1N6313	3.6	1.8	20	22	1400	117	1.6	1.65	1.0	3.0	12	1.0
1N6314	3.9	2.0	20	20	1700	108	1.6	1.5	1.0	2.0	12	1.0
1N6315	4.3	2.4	20	18	1400	99	0.9	1.4	1.0	2.0	12	1.0
1N6316	4.7	2.8	20	16	1500	90	0.5	1.27	1.5	5.0	12	1.0
1N6317	5.1	3.3	20	14	1300	83	0.4	1.17	2.0	5.0	12	1.0
1N6318	5.6	4.3	20	8.0	1200	76	0.4	1.10	2.5	5.0	10	2.0
1N6319	6.2	5.2	20	3.0	800	68	0.3	0.97	3.5	5.0	10	5.0
1N6320	6.8	6.0	20	3.0	400	63	0.35	1.23	4.0	2.0	50	5.0

**NOTE 1** Δ V<sub>Z</sub> = V<sub>Z</sub> @ 20 mAdc minus V<sub>Z</sub> @ 2 mAdc



**FIGURE 1**

## DESIGN DATA

**CASE:** Hermetically sealed, Glass "D"  
Body per MIL-PRF- 19500/533. D-5D

**LEAD MATERIAL:** Copper clad steel

**LEAD FINISH:** Tin / Lead

**THERMAL RESISTANCE:** (R<sub>ΘJL</sub>): 250  
°C/W maximum

**THERMAL IMPEDANCE:** (Z<sub>ΘJX</sub>): 15  
°C/W maximum

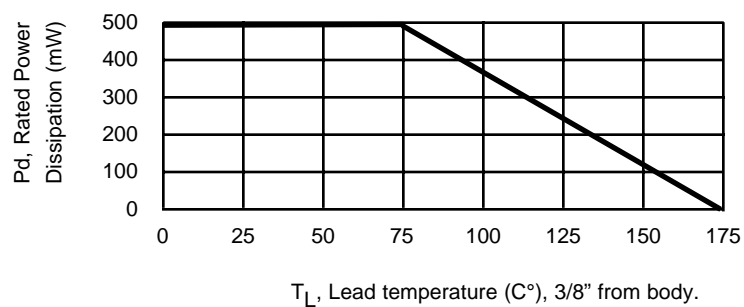
**POLARITY:** Diode to be operated with  
the banded (cathode) end positive.

**MOUNTING POSITION:** Any



# 1N6309 thru 1N6320

FIGURE 2



POWER DERATING CURVE

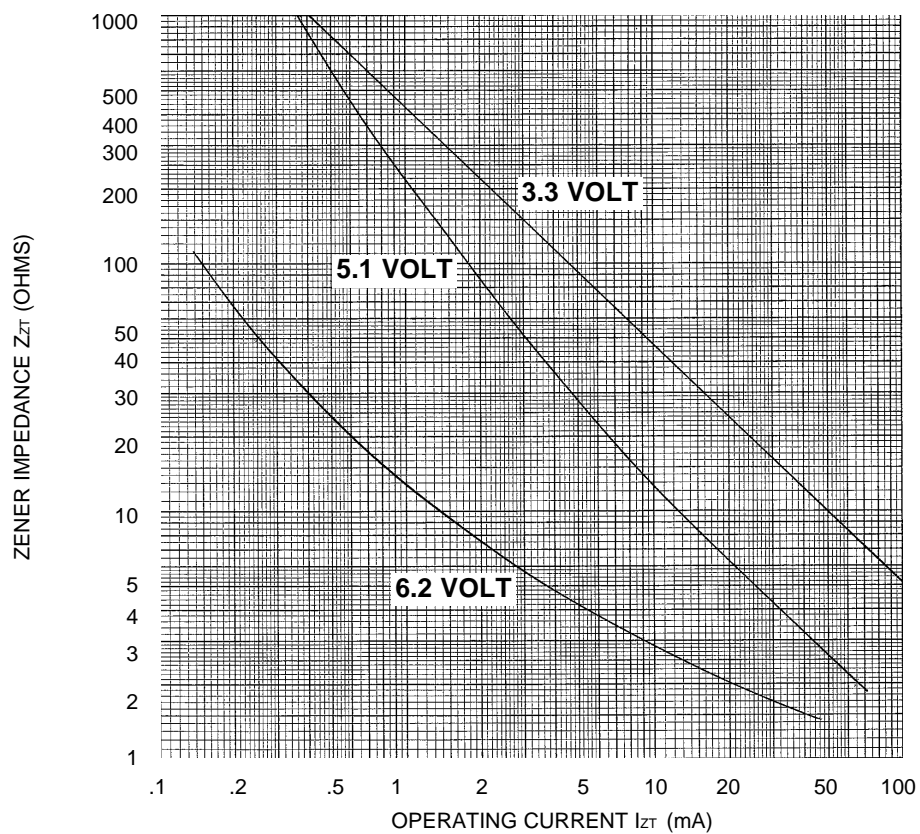


FIGURE 3

ZENER IMPEDANCE VS. OPERATING CURRENT