

- 1N5518-1 THRU 1N5546B-1 AVAILABLE INJAN, JANTX AND JANTXV PER MIL-PRF-19500/437
- LOW REVERSE LEAKAGE CHARACTERISTICS
- LOW NOISE CHARACTERISTICS
- DOUBLE PLUG CONSTRUCTION
- METALLURGICALLY BONDED

1N5518 thru 1N5546D  
and  
1N5518B-1 thru 1N5546B-1

## MAXIMUM RATINGS

Junction and Storage Temperature: -65°C to +175°C  
DC Power Dissipation: 500 mW @ +50°C  
Power Derating: 4 mW / °C above +50°C  
Forward Voltage @ 200mA: 1.1 volts maximum

## ELECTRICAL CHARACTERISTICS @ 25°C

JEDEC TYPE NUMBER (NOTE 1)	NOMINAL ZENER VOLTAGE $V_Z$ @ $I_{ZT}$ (NOTE 2)	ZENER TEST CURRENT $I_{ZT}$	MAX. ZENER IMPEDANCE B-C-D SUFFIX $Z_{ZT}$ @ $I_{ZT}$ (NOTE 3)	MAXIMUM REVERSE LEAKAGE CURRENT			B-C-D SUFFIX MAXIMUM DC ZENER CURRENT $I_{ZM}$	B-C-D SUFFIX MAX. NOISE DENSITY @ $I_Z=250\mu A$ $N_D$	REGULATION FACTOR $\%V_Z$ (NOTE 5)	LOW $V_Z$ CURRENT $I_{ZL}$
				$I_R$ (NOTE 4)		$V_R = \text{VOLTS}$				
				$\mu A_{dc}$	NON & A-SUFFIX					
1N5518B	3.3	20	26	5.0	0.90	1.0	115	0.5	0.90	2.0
1N5519B	3.6	20	24	3.0	0.90	1.0	105	0.5	0.90	2.0
1N5520B	3.9	20	22	1.0	0.90	1.0	98	0.5	0.85	2.0
1N5521B	4.3	20	18	3.0	1.0	1.5	88	0.5	0.75	2.0
1N5522B	4.7	10	22	2.0	1.5	2.0	81	0.5	0.60	1.0
1N5523B	5.1	5.0	26	2.0	2.0	2.5	75	0.5	0.65	0.25
1N5524B	5.6	3.0	30	2.0	3.0	3.5	68	1.0	0.30	0.25
1N5525B	6.2	1.0	30	1.0	4.5	5.0	61	1.0	0.20	0.01
1N5526B	6.8	1.0	30	1.0	5.5	6.2	56	1.0	0.10	0.01
1N5527B	7.5	1.0	35	0.5	6.0	6.8	51	2.0	0.05	0.01
1N5528B	8.2	1.0	40	0.5	6.5	7.5	46	4.0	0.05	0.01
1N5529B	9.1	1.0	45	0.1	7.0	8.2	42	4.0	0.05	0.01
1N5530B	10.0	1.0	60	0.05	8.0	9.1	38	4.0	0.10	0.01
1N5531B	11.0	1.0	80	0.05	9.0	9.9	35	5.0	0.20	0.01
1N5532B	12.0	1.0	90	0.05	9.5	10.8	32	10	0.20	0.01
1N5533B	13.0	1.0	90	0.01	10.5	11.7	29	15	0.20	0.01
1N5534B	14.0	1.0	100	0.01	11.5	12.6	27	20	0.20	0.01
1N5535B	15.0	1.0	100	0.01	12.5	13.5	25	20	0.20	0.01
1N5536B	16.0	1.0	100	0.01	13.0	14.4	24	20	0.20	0.01
1N5537B	17.0	1.0	100	0.01	14.0	15.3	22	20	0.20	0.01
1N5538B	18.0	1.0	100	0.01	15.0	16.2	21	20	0.20	0.01
1N5539B	19.0	1.0	100	0.01	16.0	17.1	20	20	0.20	0.01
1N5540B	20.0	1.0	100	0.01	17.0	18.0	19	20	0.20	0.01
1N5541B	22.0	1.0	100	0.01	18.0	19.8	17	20	0.25	0.01
1N5542B	24.0	1.0	100	0.01	20.0	21.6	16	20	0.30	0.01
1N5543B	25.0	1.0	100	0.01	21.0	22.4	15	20	0.35	0.01
1N5544B	28.0	1.0	100	0.01	23.0	25.2	14	20	0.40	0.01
1N5545B	30.0	1.0	100	0.01	24.0	27.0	13	20	0.45	0.01
1N5546B	33.0	1.0	100	0.01	28.0	29.7	12	20	0.50	0.01

- NOTE 1** No Suffix type numbers are  $\pm 20\%$  with guaranteed limits for only  $V_Z$ ,  $I_R$ , and  $V_F$ . Units with "A" suffix are  $\pm 10\%$  with guaranteed limits for  $V_Z$ ,  $I_R$ , and  $V_F$ . Units with guaranteed limits for all six parameters are indicated by a "B" suffix for  $\pm 5.0\%$  units, "C" suffix for  $\pm 2.0\%$  and "D" suffix for  $\pm 1.0\%$ .
- NOTE 2** Zener voltage is measured with the device junction in thermal equilibrium at an ambient temperature of  $25^\circ C \pm 3^\circ C$ .
- NOTE 3** Zener impedance is derived by superimposing on  $I_{ZT}$  A 60Hz rms a.c. current equal to 10% of  $I_{ZT}$ .
- NOTE 4** Reverse leakage currents are measured at  $V_R$  as shown on the table.
- NOTE 5**  $\%V_Z$  is the maximum difference between  $V_Z$  at  $I_{ZT}$  and  $V_Z$  at  $I_{ZL}$  measured with the device junction in thermal equilibrium at the ambient temperature of  $+25^\circ C \pm 3^\circ C$ .

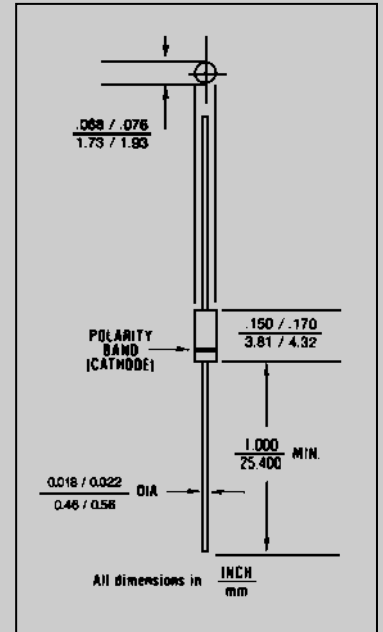


FIGURE 1

## DESIGN DATA

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

**LEAD MATERIAL:** Copper clad steel.

**LEAD FINISH:** Tin / Lead

**THERMAL RESISTANCE: ( $R_{\theta JEC}$ ):** 250 °C/W maximum at L = .375 inch

**THERMAL IMPEDANCE: ( $Z_{\theta JX}$ ):** 35 °C/W maximum

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

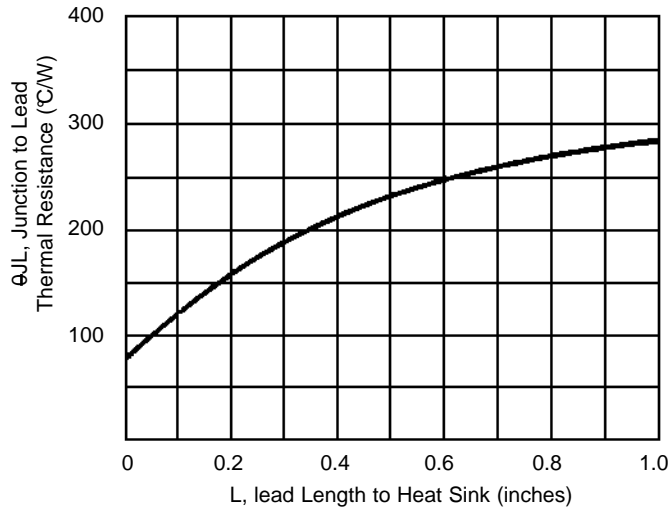
**MOUNTING POSITION:** Any.



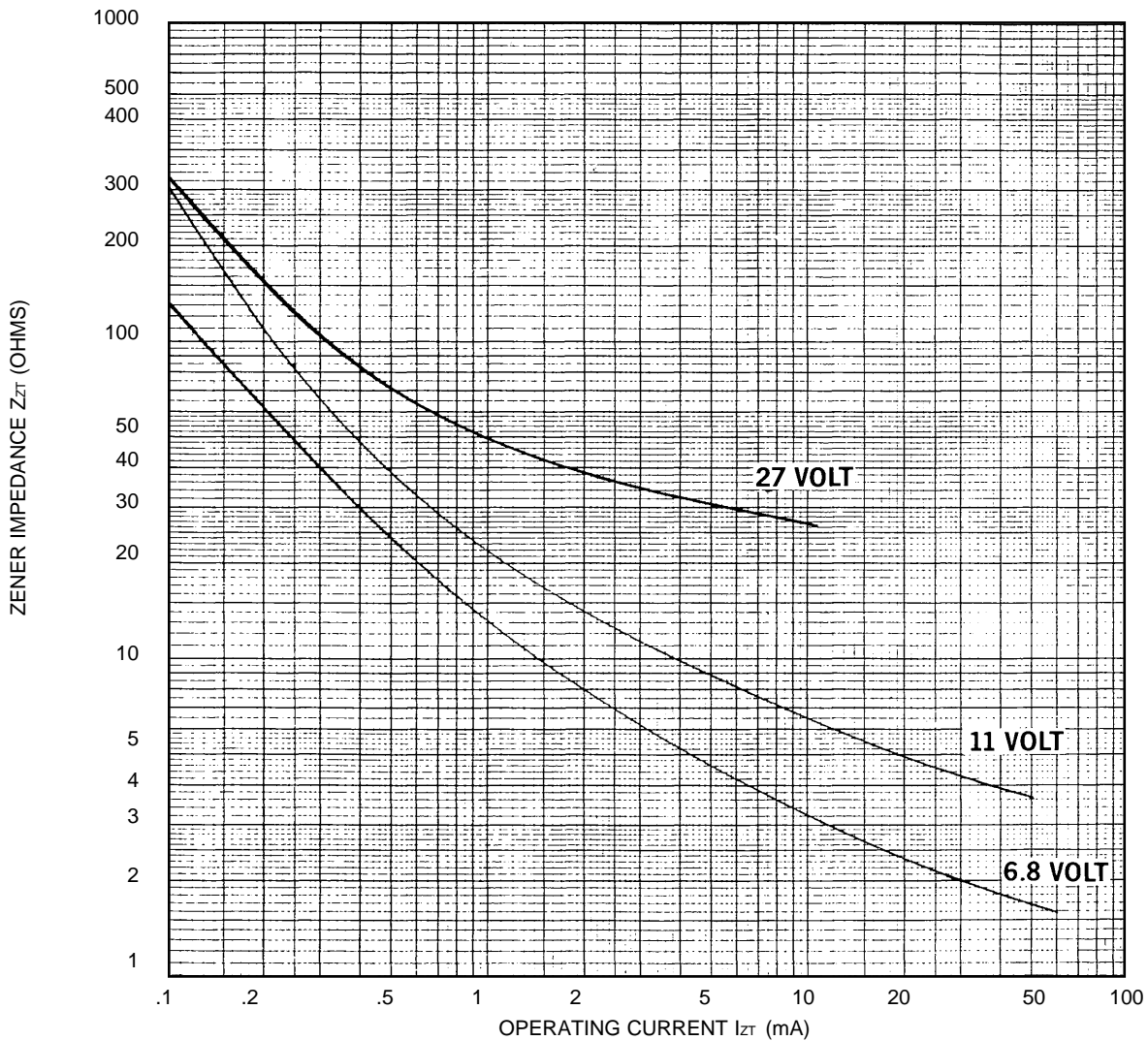
6 LAKE STREET, LAWRENCE, MASSACHUSETTS 01841  
PHONE (978) 620-2600  
WEBSITE: <http://www.microsemi.com>

FAX (978) 689-0803

# 1N5518 thru 1N5546D INCLUDING -1 VERSIONS



**FIGURE 2  
TYPICAL THERMAL RESISTANCE**



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