

- 1N821-1,1N823-1,1N825-1,1N827-1 AND 1N829-1 AVAILABLE IN JAN, JANTX, JANTXV AND JANS PER MIL-PRF-19500/159
- TEMPERATURE COMPENSATED ZENER REFERENCE DIODES
- METALLURGICALLY BONDED
- DOUBLE PLUG CONSTRUCTION

1N821 thru 1N829A  
and  
1N821-1 thru 1N829-1

## 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

$I_R = 2\mu A @ 25^\circ C \text{ \& } V_R = 3 \text{ Vdc}$

ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified.

JEDEC TYPE NUMBER	ZENER VOLTAGE $V_Z @ I_{ZT}$	ZENER TEST CURRENT $I_{ZT}$	MAXIMUM ZENER IMPEDANCE (Note 1) $Z_{ZT}$	VOLTAGE TEMPERATURE STABILITY $\Delta V_{ZT}$ -55° to +100° (Note 2)	EFFECTIVE TEMPERATURE COEFFICIENT
	VOLTS	mA	OHMS	mV	% / °C
1N821 1N821A 1N822 †	5.9—6.5	7.5	15	96	0.01
1N823 1N823A 1N824 †	5.9—6.5	7.5	15	48	0.005
1N825 1N825A 1N826	5.9—6.5 5.9—6.5 6.2—6.9	7.5 7.5 7.5	15 10 15	19 19 20	0.002 0.002 0.002
1N827 1N827A 1N828	5.9—6.5 5.9—6.5 6.2—6.9	7.5 7.5 7.5	15 10 15	9 9 10	0.001 0.001 0.001
1N829 1N829A	5.9—6.5 5.9—6.5	7.5 7.5	15 10	5 5	0.0005 0.0005

† Double Anode: Electrical Specifications Apply Under Both Bias Polarities.

**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.

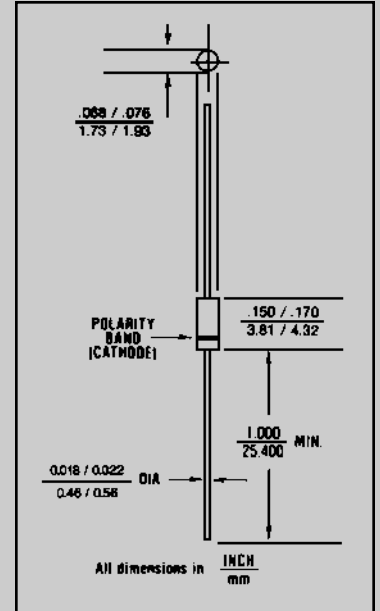


FIGURE 1

## 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.

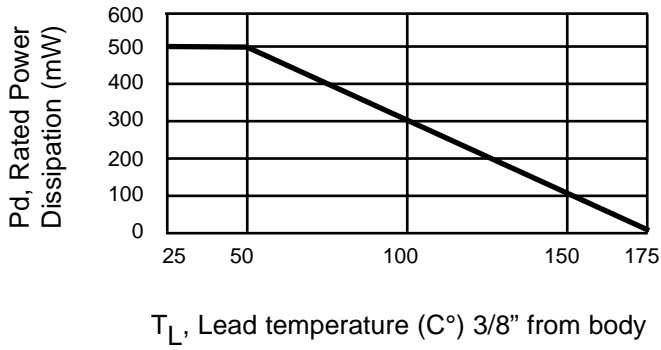


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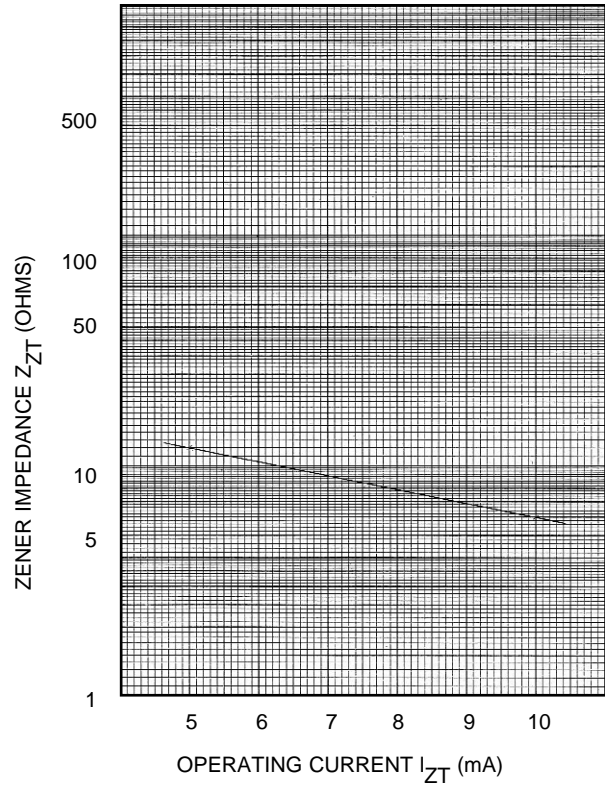
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# 1N821 thru 1N829A

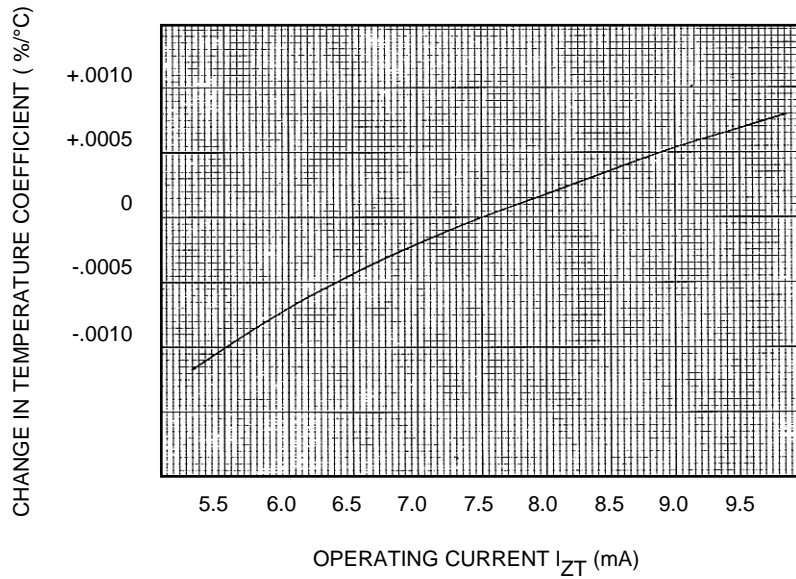
## INCLUDING -1 VERSIONS



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



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



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