

- 1N821 THRU 1N829 AVAILABLE IN JANHC AND JANKC PER MIL-PRF-19500/159
- MONOLITHIC TEMPERATURE COMPENSATED ZENER REFERENCE CHIPS
- ALL JUNCTIONS COMPLETELY PROTECTED WITH SILICON DIOXIDE
- ELECTRICALLY EQUIVALENT TO 1N821 THRU 1N829
- COMPATIBLE WITH ALL WIRE BONDING AND DIE ATTACH TECHNIQUES, WITH THE EXCEPTION OF SOLDER REFLOW

CD821  
thru  
CD829A

### MAXIMUM RATINGS

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

### REVERSE LEAKAGE CURRENT

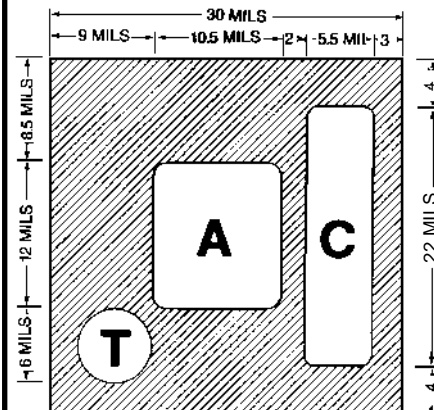
$I_R = 2 \mu A @ 25^\circ C \ \& \ V_R = 3 \ Vdc$

ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified.

CDI TYPE NUMBER	ZENER VOLTAGE $V_{ZT} @ I_{ZT}$	ZENER TEST CURRENT $I_{ZT}$	MAXIMUM ZENER IMPEDANCE $Z_{ZT}$ (Note 1)	-55° TO +100° VOLTAGE TEMPERATURE STABILITY $\Delta V_{ZT}$ (Note 2)	EFFECTIVE TEMPERATURE COEFFICIENT
	VOLTS	mA	OHMS	mV	% / °C
CD821	5.9 - 6.5	7.5	15	96	0.01
CD821A	5.9 - 6.5	7.5	10	96	0.01
CD823	5.9 - 6.5	7.5	15	48	0.005
CD823A	5.9 - 6.5	7.5	10	48	0.005
CD825	5.9 - 6.5	7.5	15	19	0.002
CD825A	5.9 - 6.5	7.5	10	19	0.002
CD826	5.9 - 6.5	7.5	15	20	0.002
CD827	5.9 - 6.5	7.5	15	9	0.001
CD827A	5.9 - 6.5	7.5	10	9	0.001
CD828	6.2 - 6.9	7.5	15	10	0.001
CD829	5.9 - 6.5	7.5	15	5	0.0005
CD829A	5.9 - 6.5	7.5	10	5	0.0005

**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.



Backside is not cathode and must be electrically isolated

T = Metallization Test Pad

### DESIGN DATA

#### METALLIZATION:

Top: C (Cathode) .....Al  
A (Anode) .....Al  
Back: .....Au

AL THICKNESS.....25,000 Å Min

GOLD THICKNESS.....4,000 Å Min

CHIP THICKNESS.....10 Mils

#### CIRCUIT LAYOUT DATA:

Backside must be electrically isolated.

**Backside is not cathode.**

For Zener operation cathode must be operated positive with respect to anode.

#### TOLERANCES: ALL

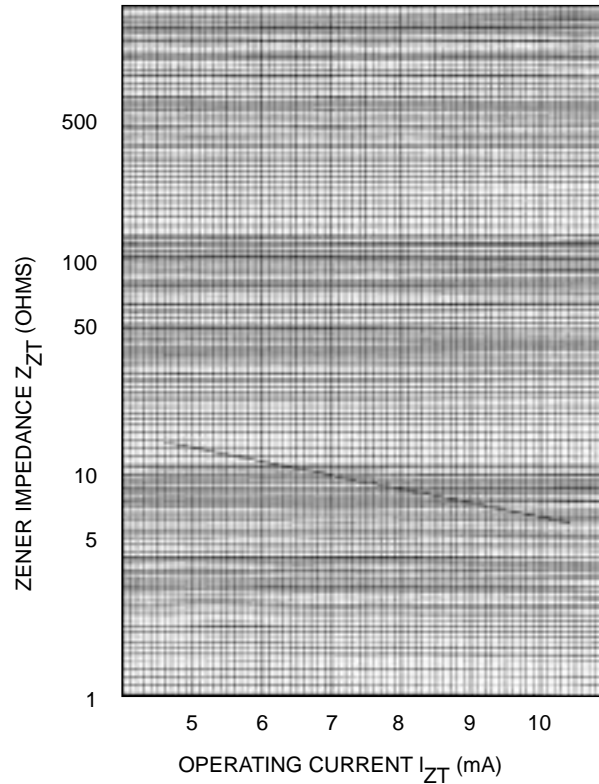
Dimensions  $\pm 2$  mils



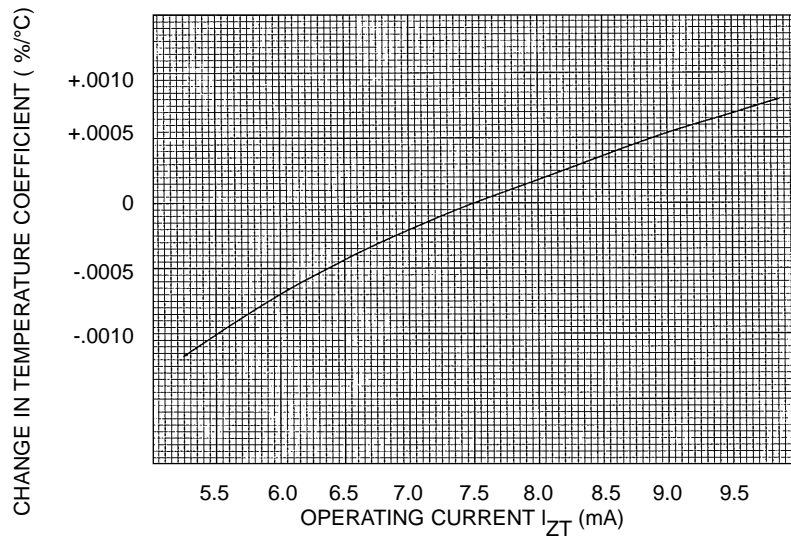
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# CD821 thru CD829A



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



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