

**FEATURES**

- ZENER VOLTAGE RANGE: 3.3V to 7.5V
- 1N3821A-1N3828A HAVE JAN, JANTX and JANTXV QUALIFICATIONS TO MIL-S-19500/115

**MAXIMUM RATINGS**

Junction and Storage Temperatures:  $-65^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$

DC Power Dissipation: 1 Watt

Derating: 12.5 mW/ $^{\circ}\text{C}$  above  $T_L$  95°C

Forward Voltage @ 200 mA: 1.5 Volts

**\*ELECTRICAL CHARACTERISTICS @ 25°C**

JEDEC TYPE NO.	NOMINAL ZENER VOLTAGE $V_Z$ @ $I_{ZT}$ (Note 1)	ZENER TEST CURRENT $I_{ZT}$	MAX. ZENER IMPEDANCE (Note 2)		MAXIMUM ZENER CURRENT $I_{ZM}$ (Note 3)	MAXIMUM REVERSE CURRENT $I_R$ @ $V_R$		TYPICAL TEMP. COEFF. of ZENER VOLTAGE $\alpha_{VZ}$
			$Z_{ZT}$ @ $I_{ZT}$	$Z_{ZK}$ @ $I_{ZK} = 1\text{mA}$		$\mu\text{A}$	VOLTS	
1N3821	3.3	76	10	400	276	100	1	-066
1N3821A	3.3	76	10	400	276	100	1	-066
1N3822	3.6	69	10	400	252	100	1	-058
1N3822A	3.6	69	10	400	252	100	1	-058
1N3823	3.9	64	9	400	238	50	1	-046
1N3823A	3.9	64	9	400	238	50	1	-046
1N3824	4.3	58	9	400	213	10	1	-033
1N3824A	4.3	58	9	400	213	10	1	-033
1N3825	4.7	53	8	500	194	10	1	-015
1N3825A	4.7	53	8	500	194	10	1	-015
1N3826	5.1	49	7	550	178	10	1	$\pm 010$
1N3826A	5.1	49	7	550	178	10	1	$\pm 010$
1N3827	5.6	45	5	600	162	10	2	+030
1N3827A	5.6	45	5	600	162	10	2	+030
1N3828	6.2	41	2	700	146	10	3	+049
1N3828A	6.2	41	2	700	146	10	3	+049
1N3829	6.8	37	1.5	500	133	10	3	+053
1N3829A	6.8	37	1.5	500	133	10	3	+053
1N3830	7.5	34	1.5	250	121	10	3	+057
1N3830A	7.5	34	1.5	250	121	10	3	+057

\* JEDEC Registered Data

**NOTE 1** The JEDEC type numbers shown with suffix A have a standard tolerance of  $\pm 5\%$  on the nominal zener voltage.  $V_Z$  measured with device in thermal equilibrium in  $25^{\circ}\text{C}$  still air and mounted in test clips, 3/4" from unit body. If tighter tolerance on  $V_Z$  is required, consult factory.

**NOTE 2** ZENER Impedance derived by superimposing on  $I_{ZT}$ - $I_{ZK}$  a 60 cps, rms. a.c. current equal to 10%  $I_{ZT}$  or  $I_{ZK}$ .

**NOTE 3** Allowance has been made for the increase in  $V_Z$  due to  $Z_Z$  and for the increase in junction temperature as the unit approaches thermal equilibrium at the power dissipation of 1 watt.

**SILICON  
1 WATT  
ZENER DIODES**

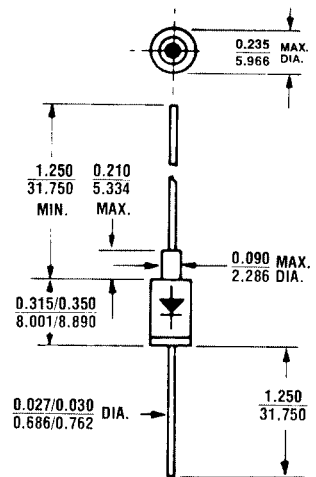


FIGURE 1

All dimensions in INCH  
m.m.

**MECHANICAL CHARACTERISTICS**

**CASE:** DO-13, welded, hermetically sealed metal and glass. Also available in glass DO-41.

**FINISH:** All external surfaces are corrosion resistant and leads solderable.

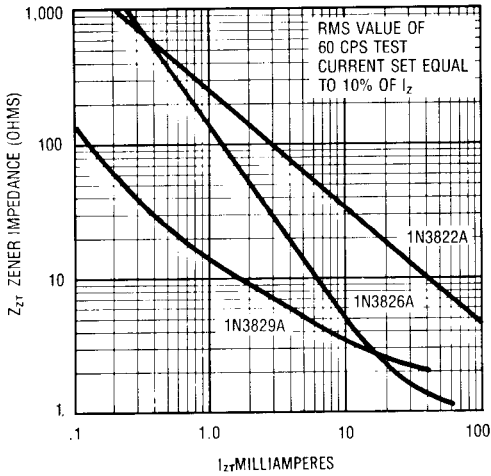
**THERMAL RESISTANCE:** 50° C/W (Typical) junction to lead at 0.375 inches from body and 30° C/Watt junction to case.

**POLARITY:** Cathode connected case.

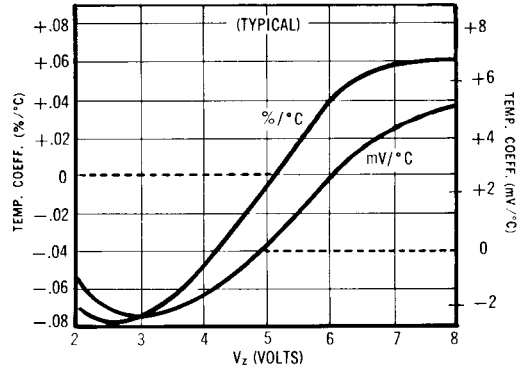
**WEIGHT:** 1.4 grams.

**MOUNTING POSITION:** Any.

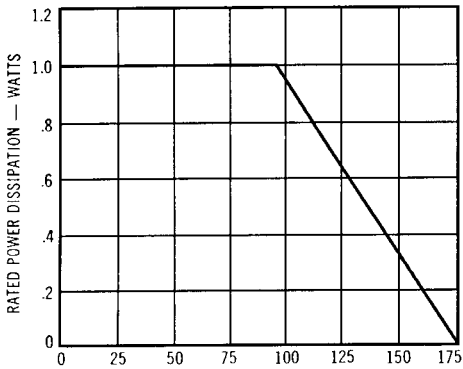
# 1N3821 thru 1N3830A



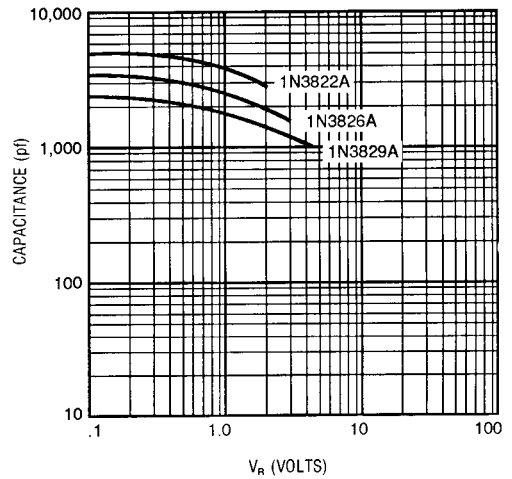
**FIGURE 2**  
TYPICAL ZENER IMPEDANCE vs.  
ZENER CURRENT FOR TYPES SHOWN



**FIGURE 3**  
TEMP. COEFF. vs. ZENER VOLTAGE



**FIGURE 4**  
POWER DERATING CURVE



**FIGURE 5**  
TYPICAL CAPACITANCE vs. REVERSE  
VOLTAGE FOR 1-WATT ZENERS