Microsemi Corp.
The diode experts

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1N3821 thru 1N3830A

SILICON 1 WATT ZENER DIODES

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°C to +175°C

DC Power Dissipation: 1 Watt

Derating: 12.5 mW/°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) Z_{ZT} @ I_{ZT}	MAX. ZENER IMPEDANCE (Note 2) Z_{ZK} @ I_{ZK} = 1mA	MAXIMUM ZENER CURRENT I_{ZM} (Note 3)	MAXIMUM REVERSE CURRENT I_R @ V_R		TYPICAL TEMP. COEFF. of ZENER VOLTAGE α_{VZ}
	VOLTS	mA	OHMS	OHMS	mA	μA	VOLTS	%/°C
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	±.010
1N3826A	5.1	49	7	550	178	10	1	±.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 ±5% on the nominal zener voltage. V_Z measured with device in thermal equilibrium in 25°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.

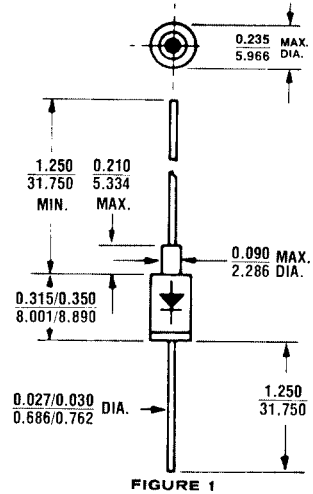

FIGURE 1

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.

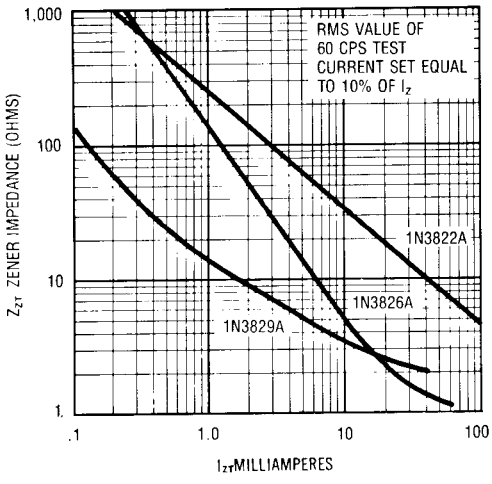

FIGURE 2
TYPICAL ZENER IMPEDANCE vs. ZENER CURRENT FOR TYPES SHOWN

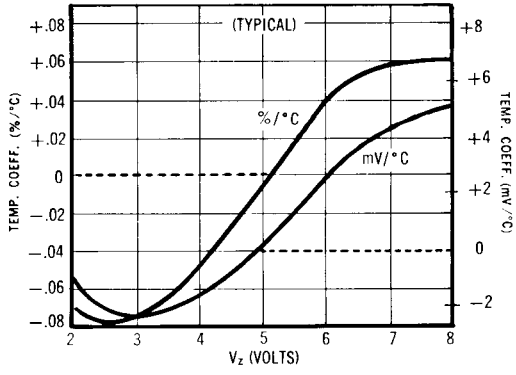

FIGURE 3
TEMP. COEFF. vs. ZENER VOLTAGE

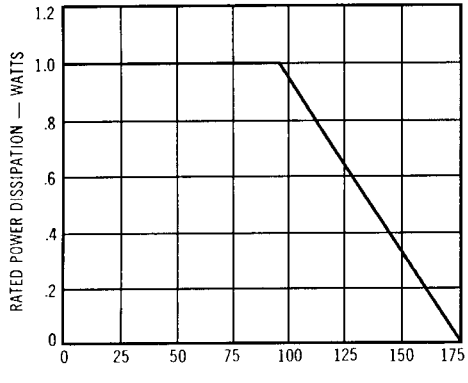

FIGURE 4
POWER DERATING CURVE

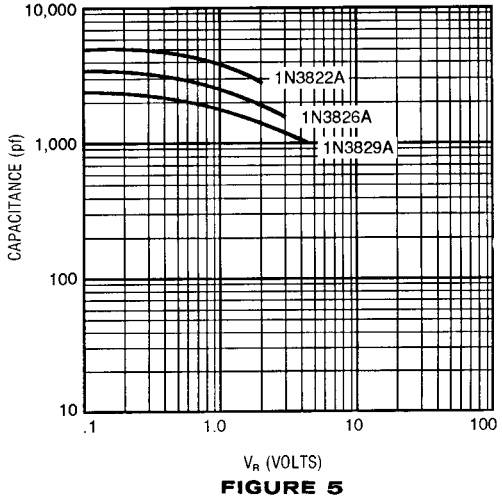

FIGURE 5
TYPICAL CAPACITANCE vs. REVERSE VOLTAGE FOR 1-WATT ZENERS