Microsemi Corp.
The diode experts

SANTA ANA, CA

SCOTTSDALE, AZ
For more information call:
(602) 941-6300

1N4916
thru
1N4932A

19.2 VOLT LOW NOISE TEMPERATURE COMPENSATED ZENER REFERENCE DIODES

FEATURES

- **ZENER VOLTAGE 19.2V**
- **TEMPERATURE COEFFICIENT RANGE: 0.01%/°C to 0.001%/°C**
- **N_D YIELDS MAXIMUM-RMS NOISE FOR ANY BANDWIDTH**

MAXIMUM RATINGS

Junction and Storage Temperatures: −65°C to +175°C
DC Power Dissipation: 400 mW
Power Derating: 3.20 mW/°C above 50°C

*ELECTRICAL CHARACTERISTICS

@ 25°C, unless otherwise specified

JEDEC TYPE NUMBER	TEST CURRENT I_{ZT} (Note 1 & 5)	MAX. VOLTAGE CHANGE WITH TEMPERATURE ΔV_{ZT} (Note 2 & 5)	TEMPERATURE RANGE	EFFECTIVE TEMPERATURE COEFFICIENT α_{VZ} (Note 3)	MAXIMUM DYNAMIC IMPEDANCE Z_{ZT} (Note 4)	MAXIMUM NOISE DENSITY N_D
	mA	VOLTS	°C	±%/°C	OHMS	μV/√ cps
1N4916	0.5	0.144	+25 to +100	0.01	600	1.0
1N4916A	0.5	0.298	−55 to +100	0.01	600	1.0
1N4917	0.5	0.072	+25 to +100	0.005	600	1.0
1N4917A	0.5	0.149	−55 to +100	0.005	600	1.0
1N4918	0.5	0.029	+25 to +100	0.002	600	1.0
1N4918A	0.5	0.060	−55 to +100	0.002	600	1.0
1N4919	1.0	0.144	+25 to +100	0.01	300	0.5
1N4919A	1.0	0.298	−55 to +100	0.01	300	0.5
1N4920	1.0	0.072	+25 to +100	0.005	300	0.5
1N4920A	1.0	0.149	−55 to +100	0.005	300	0.5
1N4921	1.0	0.029	+25 to +100	0.002	300	0.5
1N4921A	1.0	0.060	−55 to +100	0.002	300	0.5
1N4922	2.0	0.144	+25 to +100	0.01	150	0.25
1N4922A	2.0	0.298	−55 to +100	0.01	150	0.25
1N4923	2.0	0.072	+25 to +100	0.005	150	0.25
1N4923A	2.0	0.149	−55 to +100	0.005	150	0.25
1N4924	2.0	0.029	+25 to +100	0.002	150	0.25
1N4924A	2.0	0.060	−55 to +100	0.002	150	0.25
1N4925	4.0	0.144	+25 to +100	0.01	75	0.22
1N4925A	4.0	0.298	−55 to +100	0.01	75	0.22
1N4926	4.0	0.072	+25 to +100	0.005	75	0.22
1N4926A	4.0	0.149	−55 to +100	0.005	75	0.22
1N4927	4.0	0.029	+25 to +100	0.002	75	0.22
1N4927A	4.0	0.060	−55 to +100	0.002	75	0.22
1N4928	4.0	0.014	+25 to +100	0.001	75	0.22
1N4928A	4.0	0.030	−55 to +100	0.001	75	0.22
1N4929	7.5	0.144	+25 to +100	0.01	36	0.20
1N4929A	7.5	0.298	−55 to +100	0.01	36	0.20
1N4930	7.5	0.072	+25 to +100	0.005	36	0.20
1N4930A	7.5	0.149	−55 to +100	0.005	36	0.20
1N4931	7.5	0.029	+25 to +100	0.002	36	0.20
1N4931A	7.5	0.060	−55 to +100	0.002	36	0.20
1N4932	7.5	0.014	+25 to +100	0.001	36	0.20
1N4932A	7.5	0.030	−55 to +100	0.001	36	0.20

*JEDEC Registered Data.

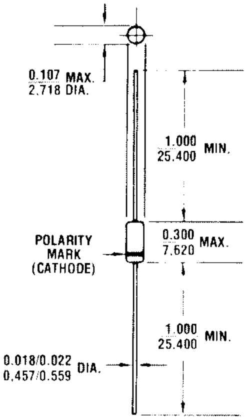

FIGURE 1

All dimensions in $\frac{\text{INCH}}{\text{m.m.}}$

MECHANICAL CHARACTERISTICS

CASE: Hermetically sealed glass case. DO-7.

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

THERMAL RESISTANCE: 300°C/W (Typical) junction to lead at 0.375-inches from body.

POLARITY: Diode to be operated with the banded end positive with respect to the opposite end.

WEIGHT: 0.2 grams.

MOUNTING POSITION: Any.

NOTE 1 Nominal voltage for all types is 19.2 Volts ±5%.

NOTE 2 Referred to as the 'box' measurement method, the ΔV_{ZT} is the maximum voltage variance that will occur as the voltage is scanned thru all temperatures between the temperature range limits.

NOTE 3 The effective temperature coefficients are tabulated in %/°C primarily for information only because temperature compensated diodes inherently have a non-linear voltage-temperature relationship.

NOTE 4 The dynamic Zener impedance Z_{ZT} is derived from the resulting a.c. voltage developed when a 60 cps, rms, a.c. current equal to 10% of the D.C. Zener current I_{ZT} is superimposed on I_{ZT}.

NOTE 5 Voltage measurements to be performed 15 seconds after application of DC current.

NOTE 6 To specify radiation hardened devices, use "RH" prefix instead of "IN", i.e. RH4916A instead of IN4916A.

NOTE 7 Consult factory for TX, TXV or JANS equivalent SCDs.

Noise Density (N_D) is specified in Microvolts-rms per square root cycle. Actual measurement is performed using a 1 to 3 $\mathrm{KH_z}$ frequency bandpass at the Zener test current(I_{ZT}) @ 25° C ambient temperature.

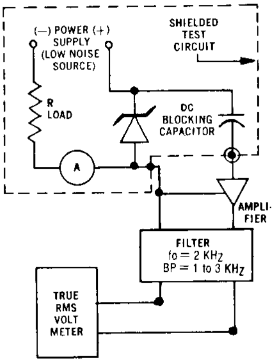

FIGURE 2
NOISE DENSITY MEASUREMENT CIRCUIT

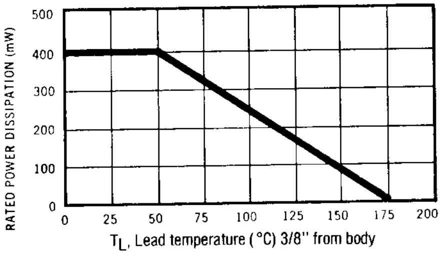

FIGURE 3
POWER DERATING CURVE