INTERNATIONAL SEMICONDUCTOR, INC.

400 MILLIWATT HERMETICALLY SEALED GLASS SILICON
LOW NOISE **ZENER DIODES**

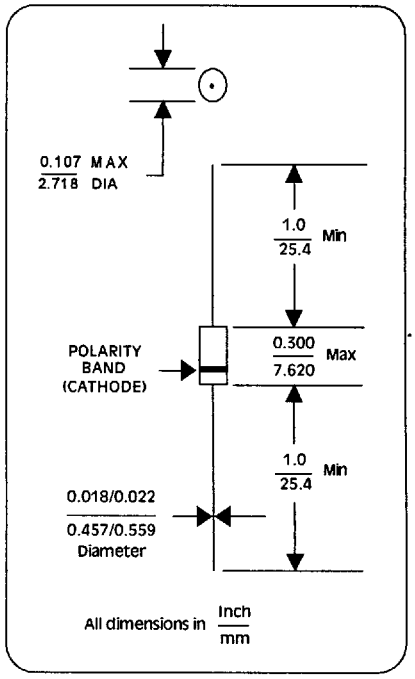
C8204-1 thru C8204-16

MAXIMUM RATINGS *

Operating Temperature: -65 °C to +200 °C
Storage Temperature: -65 °C to +200 °C
DC Power Dissipation: 400 mW at T_A=50 °C
Power Derating: 4.0 mW/° C above 75 °C
Forward Voltage 1.0 Volts Max at 200 mA

FEATURES:

- Low Noise Avalanche Diodes
- Zener Voltages 4.3 to 16 Volts
- Hermetically Sealed Glass Package (DO-7)
- Capable of meeting requirements of MIL-S-19500/437



ELECTRICAL CHARACTERISTICS @ 25 °C, unless otherwise specified

JEDEC TYPE NUMBER	NOMINAL ZENER VOLTAGE V_Z @ I_{ZT}	ZENER TEST CURRENT I_{ZT}	B,C,D MAXIMUM ZENER IMPEDANCE Z_{ZT}@I_{ZT}	MAXIMUM REVERSE LEAKAGE CURRENT			B,C,D MAXIMUM NOISE DENSITY N_D@I_{ZT}	B,C,D MAXIMUM ZENER CURRENT I_{ZM}	REGULATION FACTOR ΔV_Z	LOW V_Z CURRENT I_{ZL}
				I_R@V_R	V_R NON&A	V_R B,C,D				
	Volts	mA	Ohms	uA	Volts	Volts	uV/$\sqrt{Hz}$	mA	Volts	mA
C8204-1	4.3	20	18	3.0	1.0	1.5	0.5	88	0.75	2.0
C8204-2	4.7	10	22	2.0	1.5	2.0	0.5	81	0.60	1.0
C8203-3	5.1	5.0	26	2.0	2.0	2.5	0.5	75	0.65	0.25
C8204-4	5.6	3.0	30	2.0	3.0	3.5	1.0	68	0.30	0.25
C8204-5	6.2	1.0	30	1.0	4.5	5.0	1.0	61	0.20	0.01
C8204-6	6.8	1.0	30	1.0	5.5	6.2	1.0	56	0.10	0.01
C8204-7	7.5	1.0	35	0.5	6.0	6.8	2.0	51	0.05	0.01
C8204-8	8.2	1.0	40	0.50	6.5	7.5	4.0	46	0.05	0.01
C8204-9	9.1	1.0	45	0.10	7.0	8.2	4.0	42	0.05	0.01
C8204-10	10.0	1.0	60	0.05	8.0	9.1	4.0	38	0.10	0.01
C8204-11	11.0	1.0	80	0.05	9.0	9.9	5.0	35	0.20	0.01
C8204-12	12.0	1.0	90	0.05	9.5	10.8	10	32	0.20	0.01
C8204-13	13.0	1.0	90	0.01	10.5	11.7	15	29	0.20	0.01
C8204-14	14.0	1.0	100	0.01	11.5	12.6	20	27	0.20	0.01
C8204-15	15.0	1.0	100	0.01	12.5	13.5	20	26	0.20	0.01
C8204-16	16.0	1.0	100	0.01	13.0	14.4	20	24	0.20	0.01

Not6 1: Zener Voltage Toleranve is is ±5%.

Note 2: Special selection of Zener Voltage and/or Matched Characteristics available on request.

Note 3: I_{ZM} = 400 mW/$V_{Z(Nom)}$ + Tolerance

Note 4: Z_{ZT} and Z_{ZK} impedances are derived from the 1kHz voltage created when an AC current with RMS value of ± 10% of DC zener test current is superimposed on the test current.

Note 5: Voltage Measurements performed with the device junction in thermal equilibrium with ambient temperature = 25 °C.

DESIGN DATA

CASE: Hermetically sealed glass case. DO-7 Outline.

LEAD MATERIAL: Copper clad steel

LEAD FINISH: Tin Plate

THERMAL RESISTANCE: 250 °C/w (Typical) junction to ambient

POLARITY: Diode to be operated with the banded (cathode) end positive with respect to the opposite end

WEIGHT: 0.2 Grams

MOUNTING POSITION: Any

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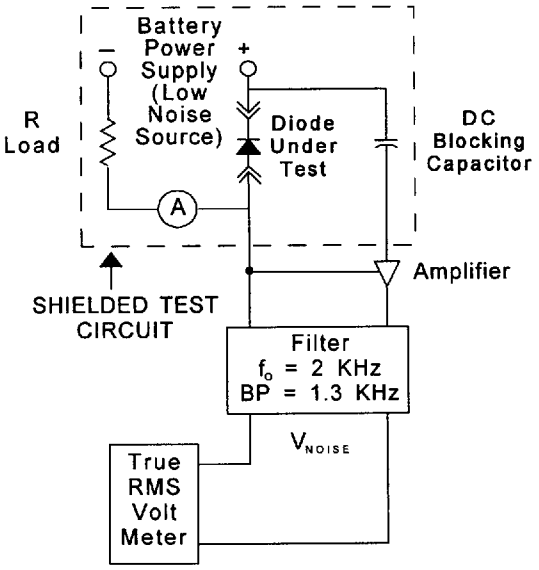
C8204-1 thru C8204-16



Noise density (N_D)is specified in Microvolts-RMS per Square-Root-Hertz. Actual measurement is performed using 1 KHz to 3 KHZ frequency bandpass filter at a constant Zener test current (I_{ZT}) at 25°C ambient temperature.

Figure 2 - NOISE DENSITY MEASUREMENT CIRCUIT

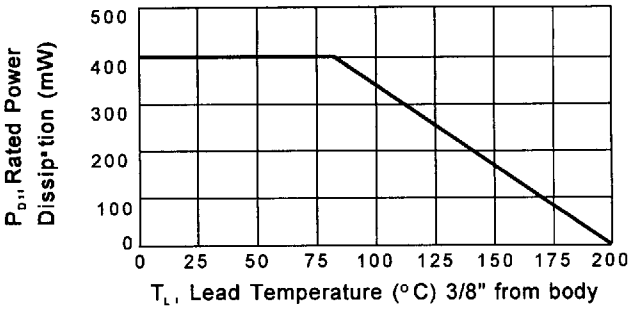


Figure 2 - POWER DERATING CURVE

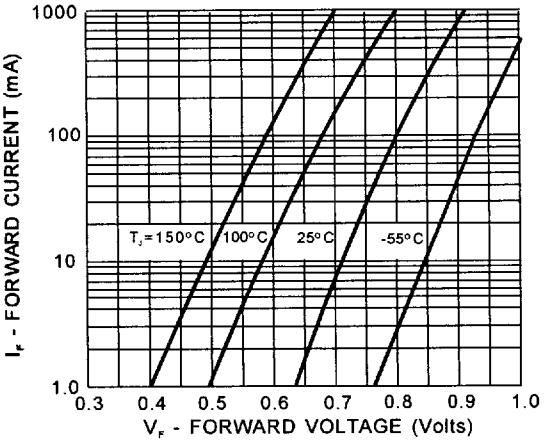


Figure 4 - TYPICAL FORWARD CHARACTERISTICS

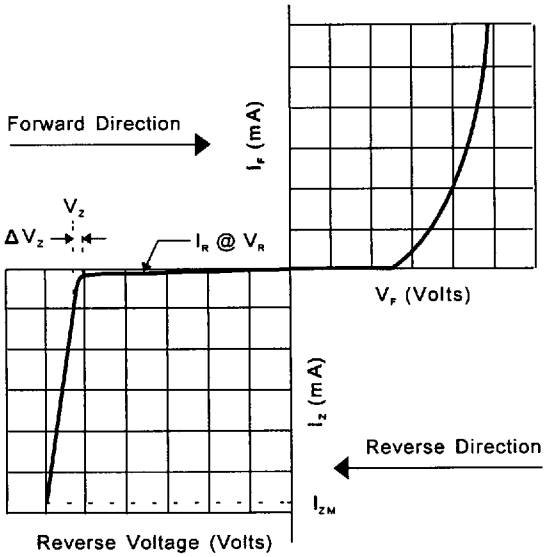


Figure 5
ZENER DIODE CHARACTERISTICS AND SYMBOL IDENTIFICATION

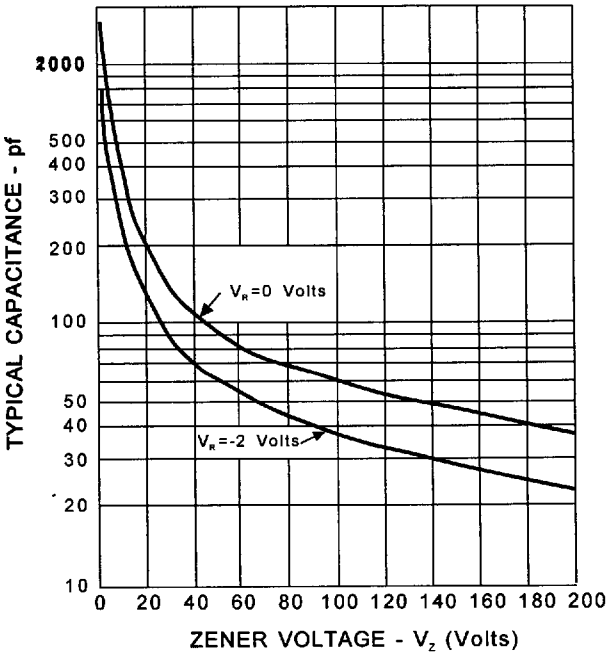


Figure 6
CAPACITANCE VERSUS ZENER OPERATING CURRENT