

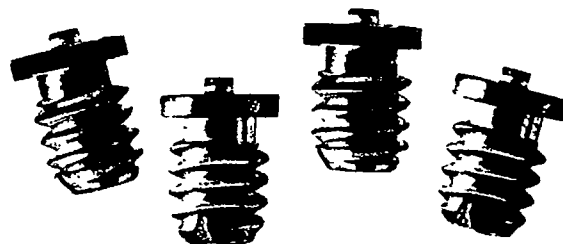
GALLIUM ARSENIDE PULSED IMPATT DIODES

9251 Series 5–21 GHz

- High Peak Output Power
- High Efficiency—Typically 18–20%
- Burnout Resistant to Circuit Mismatches
- High Reliability—Greater than 10^6 hrs MTTF
- Pulse Widths from 0.25 to 30 μ sec
- Duty Cycles from 0.5% to 35%

DESCRIPTION

Litton 9251 diodes are hi-low, gallium arsenide IMPATT diodes. They are especially ideal for use in injection-locked oscillators and amplifier stages in missile seekers and radar transmitters. Rugged, reliable diode construction is assured by using a grown P+ hi-low doping profile with a high-temperature metallization process on P+N⁺N⁻N⁺ GaAs. These diodes can be readily combined in multiple diode oscillators.



ABSOLUTE MAXIMUM RATINGS

Junction Operating Temperature 225°C
 Storage Temperature 225°C
 Soldering Temperature, 5 sec. maximum 230°C

GENERAL CHARACTERISTICS

Frequency Range (GHz)	Minimum RF Power (W)	Minimum Efficiency (%)	Typical Operating Voltage (V)	Typical Operating Current (A)	Typical Breakdown Voltage (V)	Typical Device Capacitance (pF)	Typical Thermal Resistivity (°C/W)	Part Number (Package)
5–7	16	16	85	1.2	70	3.5	7.0	VSC 9251 S1 (N23)
	19	18	86	1.2	72	3.5	7.0	VSC 9251 S2 (N23)
8–10	17	19	60	1.5	45	3.0	7.5	VSX 9251 S1 (N57)
	20	21	64	1.5	47	3.0	7.5	VSX 9251 S2 (N57)
14–16	10	18	35	1.6	28	2.9	8.5	VSU 9251 S1 (N58)
	12	20	38	1.6	29	2.9	8.5	VSU 9251 S2 (N58)
19–21	8	18	32	1.4	20	1.9	14.0	VSK 9251 S1 (N113)
	10	20	35	1.4	22	1.9	14.0	VSK 9251 S2 (N113)

NOTES:

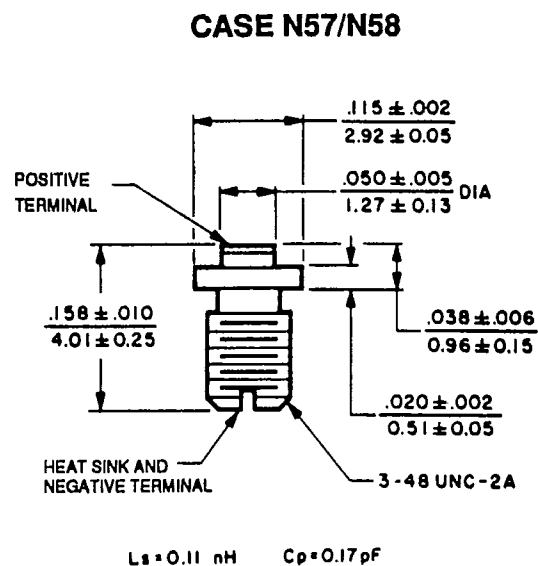
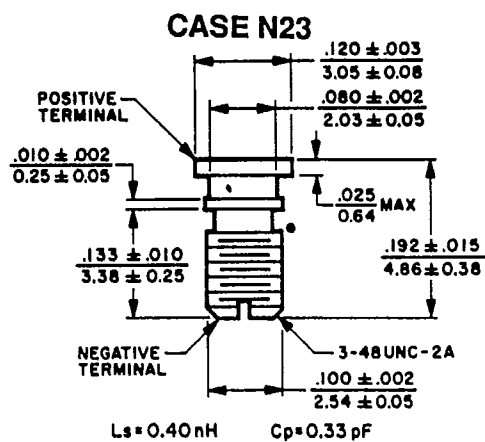
1. RF performance is measured at an ambient of 25°C in a hi-Q coaxial or waveguide test cavity. Cavity design information is available upon request. Data shown is for pulse lengths of 10 μ sec, 1% duty cycle. High duty cycle operation requires a custom-designed part for reliable operation. Special considerations are required for use of other media (microstrip, suspended-substrate); information available upon request.
2. Reverse Breakdown Voltage (BV), measured with a reverse current of 1 mA.
3. Device capacitance measured under a reverse bias voltage of 80% of BV.
4. S-Parameter data for design of matching circuits is available upon request.

Litton

Solid State

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OUTLINE DRAWINGS



DIMENSIONS: $\frac{\text{inch}}{\text{mm}}$

