

Commercial Fixed Frequency CW Gunn Diodes

These Gunn diodes are useful for low power transmitters and local oscillators used in the detection of moving targets in such applications as speed control radars, radar detectors, intrusion alarm systems, door openers and com-

mercial marine navigational radar. These low power diodes can also be used in control applications such as near object direction for vehicles, traffic light control, anti-skid braking systems for vehicles, and door openers.

Specifications @ $T_A = +25^\circ\text{C}$

Model Number	Case Style	Frequency ^{2,3} Min./Max. (GHz)	Min. CW ^{1,3} Output Power (mW)	Maximum ⁵ Operating Current (mA)	Nominal Operating Voltage (Volts)
MA49618*	30	9.0/12.0	5.0	80	8.0
MA49508*	30	9.0/12.0	10.0	160	8.0
MA49628*	30	18.0/26.0	10.0	200	5.0
MA49499*	30	18.0/26.0	5.0	100	5.0

* The heat sink is the anode.

Notes:

1. This power is delivered at a specified single frequency in the specified band.
2. The customer MUST specify the desired operating frequency within the indicated range.
3. Power is measured into a critically coupled load at a customer specified single frequency in the indicated range. Typical bandwidth is $\pm 5\%$. The minimum indicated output power is guaranteed into a critically coupled load over the indicated bandwidth centered around the frequency specified by the customer. Higher power diodes are available on special request.
4. These diodes are designed to operate within a heat sink temperature -30°C to $+70^\circ\text{C}$. However, for higher operating temperatures, please contact the factory.
5. The maximum threshold current is approximately 1.3 times the maximum operating current.
6. All diodes are burned in for a minimum period of 8 hours at diode case temperature (T_c) of $70 \pm 5^\circ\text{C}$ and a dc bias voltage of ($V_{op} + 1.0$ volts). upon request and for an additional charge, these diodes can be burned in for longer periods.

Screening of Gunn Diodes for High Reliability

M/A-COM's Gunn diodes have proven to have a high reliability when operated properly in oscillator systems at junction temperatures not exceeding 260°C . The following prescreening procedure is suggested as a means of further guaranteeing Gunn diode reliability over long periods of time.

Environmental and Lot Sampling Tests

M/A-COM's Environmental Laboratory has complete capability for all Group B and C test requirements including life test as required by MIL-STD19500 and MIL-STD-750.

Available Procedures for JANTX Equivalency

100% Screening	MIL-STD-750 Method	Conditions/Comments
High Temperature Storage	1032	200°C for 24 hours
Temperature Cycle	1051	-65°C to $+200^\circ\text{C}$, 20 Cycles for 30 minutes
Acceleration	2006	20,000 g's
Fine Leak	1071	5×10^{-8} cm ³ /sec
Gross Leak	1071	Fluorocarbon or penetrative dye
Burn-In	1038	70°C heat sink temp. and $V_{OP} + 1$ volt (or 10%) for 96 hours

Specifications Subject to Change Without Notice.