Low Noise GaAs MMIC Amplifier
7.5 - 12.0 GHz

MAAM71200-H1
V5

Features

- Noise Figure: 2.7 dB Typical
- Gain: 15.5 dB Typical
- Single Bias Supply
- Low Current Consumption
- DC Decoupled RF Input and Output
- Ceramic Package

Description

M/A-COM's MAAM71200-H1 is a wide band, low noise GaAs MMIC amplifier enclosed in a leadless ceramic package. The MAAM71200-H1 is a packaged version of M/A-COM's MAAM71200 low noise MMIC amplifier chip. The fully monolithic design operates in 50 ohms without the need for external components.

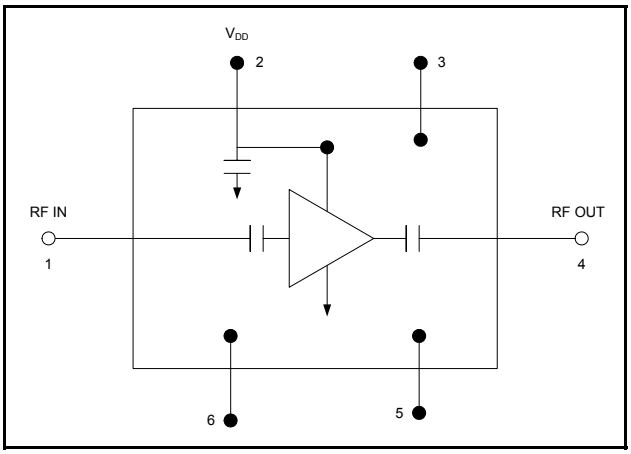
The MAAM71200-H1 is ideally suited for microstrip assemblies where wire or ribbon bonds are used for interconnects. Typical applications include radar, EW and communication systems.

The MAAM71200-H1 is fabricated using a mature 0.5-micron gate length GaAs process for increased reliability and performance repeatability.

Ordering Information

Part Number	Package
MAAM71200-H1	Bulk Packaging

Functional Diagram



1. Case must be electrically connected to RF and DC ground.
2. The RF bond inductance from the transmission line to the package is assumed to be 0.25 nH. Variations in bond inductance will result in variations in VSWR and gain slope. A small capacitive stub may be needed depending on the inductance realized in the final assembly.
3. Nominal bias is obtained by setting V_{DD} = 4 V.
4. Increasing V_{DD} from 4 volts to 6 volts increases output power and high frequency bandwidth.

Absolute Maximum Ratings [5,6]

Parameter	Absolute Maximum
Input Power	+20 dBm
V_{DD}	+7 V
Junction Temperature	+150°C
Thermal Resistance	+175°C/W
Storage Temperature	-65°C to +150°C

5. Exceeding any one or combination of these limits may cause permanent damage to this device.
6. M/A-COM does not recommend sustained operation near these survivability limits.

• **North America** Tel: 800.366.2266 / Fax: 978.366.2266
• **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
• **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

Visit www.macom.com for additional data sheets and product information.

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Electrical Specifications: T_A = 25°C, V_{DD} = 4 V

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Gain	—	dB	14.5	15.5	—
Noise Figure	—	dB	—	2.7	3.5
Input VSWR Output VSWR	— —	Ratio Ratio	— —	2.0:1 1.8:1	— —
Output 1 dB Compression Point	—	dBm	—	11	—
Third Order Intercept Point	—	dBm	—	21	—
Reverse Isolation	—	dB	—	30	—
Bias Current (I_{DD})	—	mA	—	40	55

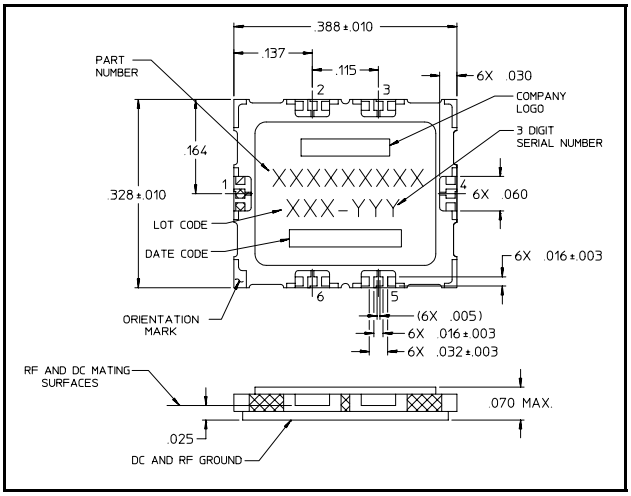
Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

CR-16



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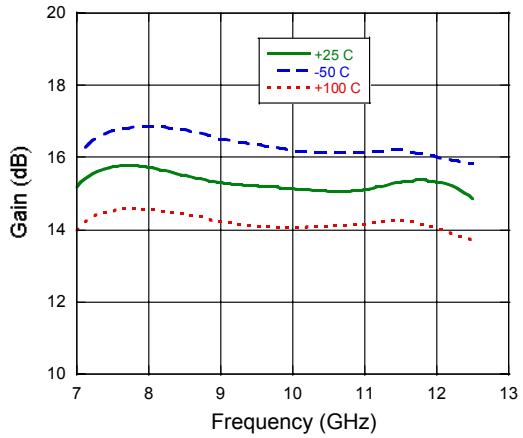
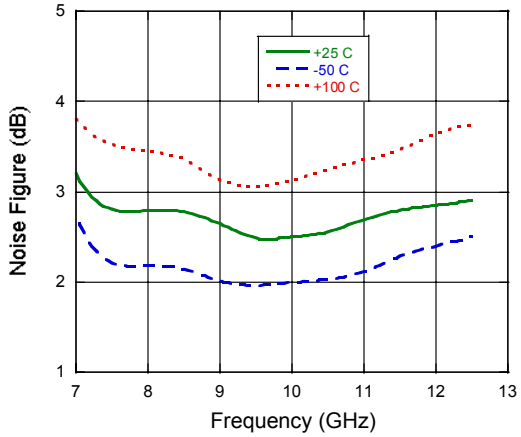
Typical Performance Curves

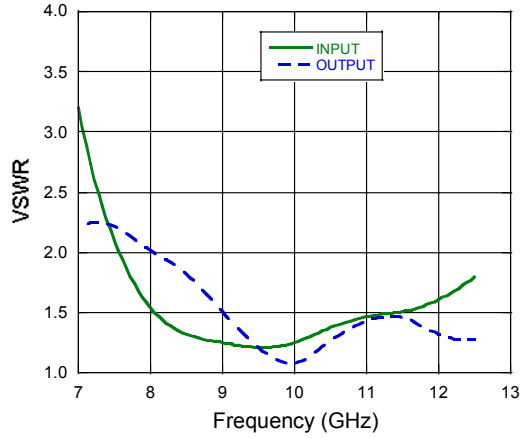
Gain



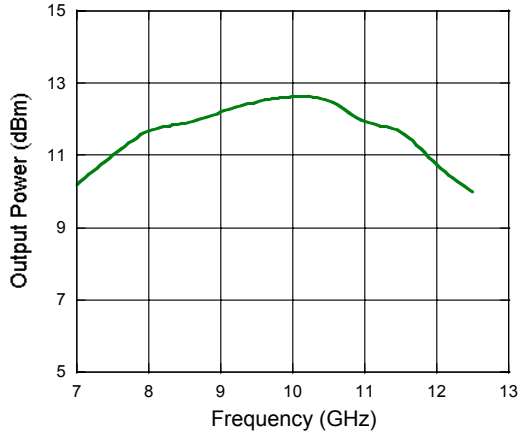
Noise Figure



Input and Output VSWR



Output Power @ 1 dB Compression



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