## MAAM71200-H1



# Low Noise GaAs MMIC Power Amplifier 7.5 - 12.0 GHz

Rev. V7

#### **Features**

Noise Figure: 2.7 dB Typical

Gain: 15.5 dB TypicalSingle Bias Supply

• Low Current Consumption

· DC Decoupled RF Input and Output

• Ceramic Package

#### **Description**

The 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 The MAAM71200 low noise MMIC amplifier chip. The fully monolithic design operates in 50  $\Omega$  without the need for external components.

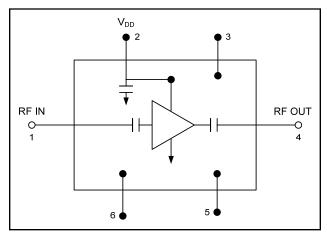
The MAAM71200-H1 is ideally suited for microstrip assemblies where wire or ribbon bonds are used for interconnects. Typical applications include radar, EW and communication systems.

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.
- 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  $V_{DD} = 4 \text{ V}$ .
- Increasing V<sub>DD</sub> 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 <sub>DD</sub>	+7 V		
Junction Temperature	+150°C		
Thermal Resistance	+175°C/W		
Storage Temperature	-65°C to +150°C		

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

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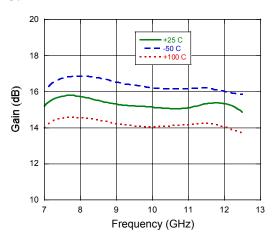
Rev. V7

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

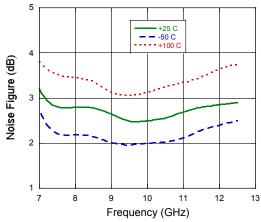
Parameter	Test Conditions	Units	Min.	Тур.	Max.
Gain	<del>-</del>	dB	14.5	15.5	_
Noise Figure	<del>-</del>	dB	_	2.7	3.5
Input VSWR Output VSWR	_ _	Ratio Ratio	_	2.0:1 1.8:1	
Output 1 dB Compression Point	_	dBm	_	11	_
Third Order Intercept Point	_	dBm	_	21	_
Reverse Isolation	_	dB	_	30	_
Bias Current (I <sub>DD</sub> )	<del>_</del>	mA	_	40	55

### **Typical Performance Curves**

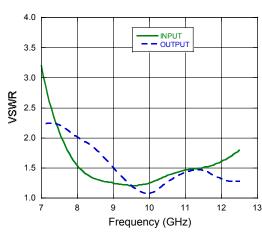
#### Gain



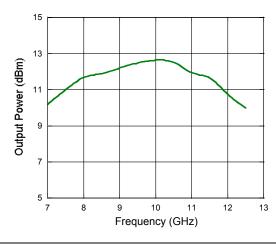
# Noise Figure



#### Input and Output VSWR



#### Output Power @ 1 dB Compression



ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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North America Tel: 800.366.2266
India Tel: +91.80.43537383
Europe Tel: +353.21.244.6400
China Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

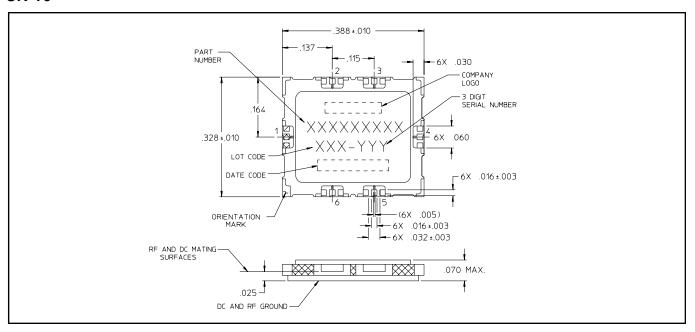
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#### **CR-16**



### **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.

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Europe Tel: +353.21.244.6400

North America Tel: 800.366.2266