Low Noise GaAs MMIC Amplifier
7.5 - 12 GHz

MAAM71200-H1

V 2.00

Features

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

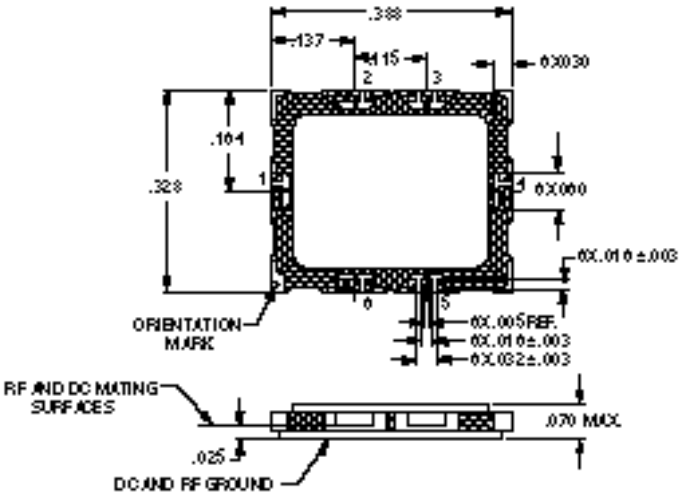
Description

M/A-COM's MAAM71200-H1 is a wide band, low noise GaAs MMIC amplifier enclosed in a leadless ceramic package[1]. 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 is fabricated using a mature 0.5-micron gate length GaAs process for increased reliability and performance repeatability.

CR-16



Dimensions are in inches.

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

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

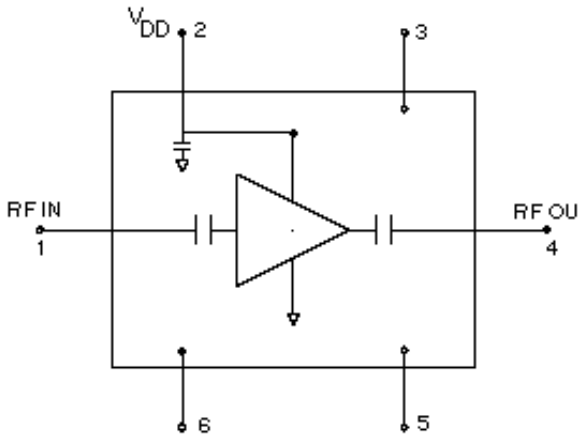
1.Consult factory for a leaded ceramic package version.

Absolute Maximum Ratings [1]

Parameter	Absolute Maximum
Input Power	+20 dBm
V_{DD}	+9 Volts
Junction Temperature	+150°C
Storage Temperature	-65°C to +150°C
Thermal Resistance	175°C/W

1. Operation of this device outside any of these limits may cause permanent damage

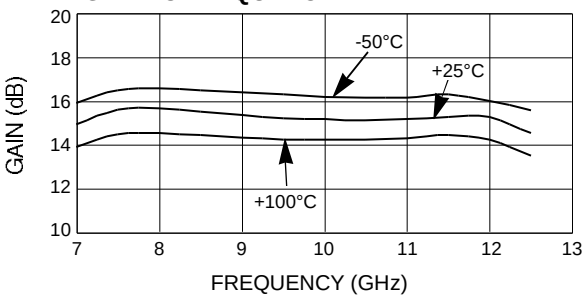
Functional Diagram



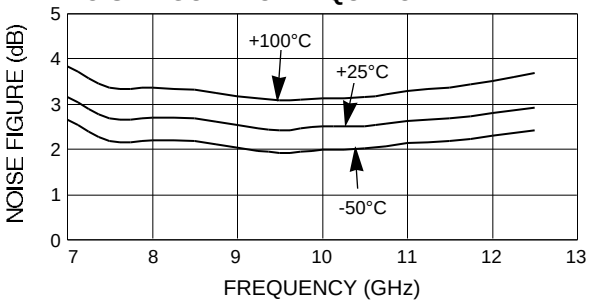
1. Case must be electrically connected to RF and DC ground.
2. The RF bond inductance from the transmission line to the package is assumed to be 0.25 nH. Variations in bond induc- tance will result in variations in VSWR and gain slope. A small capacitive stub may be needed depending on the inductance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

Typical Performance

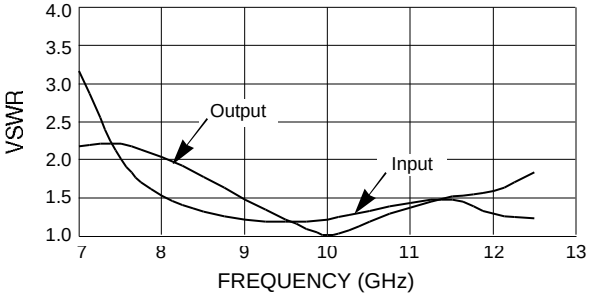
GAIN vs FREQUENCY



NOISE FIGURE vs FREQUENCY



INPUT & OUTPUT vs FREQUENCY



OUTPUT POWER @ 1dB COMPRESSION vs FREQUENCY