

Low Noise GaAs MMIC Amplifier 3.5 - 7 GHz

MAAM37000-A1

V 2.00

Features

- Low Noise Figure: 2.2 dB
- High Gain: 17 dB
- Gain Flatness: ±0.5 dB
- Single Supply: +4 V
- No External Components Required
- DC Decoupled RF Input and Output
- Small, 8-Lead Ceramic Package

Description

M/A-COM's MAAM37000-A1 is a wide band, low noise, MMIC amplifier housed in a small 8-lead ceramic package. It includes two integrated gain stages and employs series inductive feedback to obtain excellent noise figure and a good, 50-ohm, input and output impedance match over the entire frequency band. The MAAM37000-A1 operates from a single +4 V supply. It is fully monolithic, requires no external components, and is provided in a user-friendly, microwave package.

The MAAM37000-A1 performs well as a low noise amplifier in receive applications and as a driver or buffer amplifier where high gain, excellent linearity and low power consumption are important. Because of its wide bandwidth, the MAAM37000-A1 can be used in numerous commercial and government system applications, such as TVRO, VSAT, missile guidance and radar.

The MAAM37000-A1 is manufactured in-house using a reliable, 0.5-micron, GaAs MESFET process. This product is 100% RF tested to ensure compliance to performance specifications.

ORIENTATION MARK ORIENTATION MARK O.180 SQ. (5.33) (4 57) O.180 SQ. (5.33) O.15 ±0.003 (0.38 ±0.08) TYP Tolerance Non-Cumula five 0.005 ±0.002 (0.75 MAX (1.91) 0.005 ±0.002 (0.75 ±0.003)

Bottom of case is AC ground. Dimensions in () are in mm. Unless Otherwise Noted: 300 ± 0.010 (300 ± 0.25) 300 ± 0.02 ($x = \pm 0.5$)

Ordering Information

CR-3

Part Number	Package
MAAM37000-A1	8-Lead Ceramic
MAAM37000-A1G	Gull Wing

Parameter	Units	Min.	Тур.	Max.	
Gain	dB	15	17		
Noise Figure	dB		2.2	3.2	
Input VSWR			2.0:1		
Output VSWR			2.0:1		
Output 1 dB Compression	dBm		+14		
Input IP3	dBm		+8		
Reverse Isolation	dB		35		
Bias Current	mA		75	110	

Electrical Specifications Test Conditions: $T_A = +25^{\circ}C$, $Z_0 = 50 \Omega$, $V_{DD} = +4 V$, $P_{IN} = -30 dBm$

Absolute Maximum Ratings¹

Parameter	Absolute Maximum
V _{DD}	+7 volts
Input Power	+20 dBm
Current	150 mA
Channel Temperature	+150°C
Operating Temperature ²	-55°C to +100°C
Storage Temperature	-65°C to +150°C

Operation of this device outside these limits may cause permanent damage.
Typical thermal resistance (θjc) = +120°C/W

Typical Performance @ +25°C

GAIN vs FREQUENCY GAIN (dB) FREQUENCY (GHz)



Schematic



