

Cascadable Amplifier 1000 to 4000 MHz

Rev. V3

Features

- WIDE BANDWIDTH: 1.0 to 4.0 GHz (TYP.)
- HIGH GAIN: 18 dB (TYP.)
- MEDIUM OUTPUT POWER: +15.5 dBm (TYP.)
- LOW NOISE FIGURE: 3.5 dB (TYP.)

Description

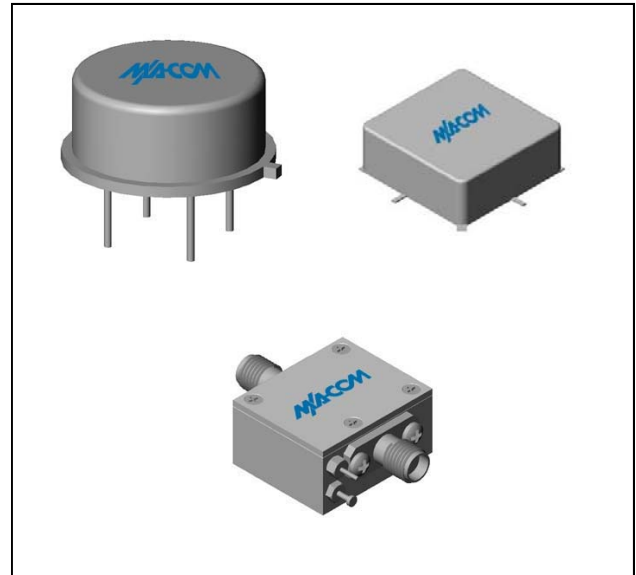
The A4012 microwave amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A4012	TO-8
SMA4012	Surface Mount
MAAM-008738-CA4012	SMA Connectorized **

** The connectorized version is not RoHs compliant.

Product Image



Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +5 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	GHz	0.8-4.5	1.0-4.0	1.0-4.0
Small Signal Gain (min)	dB	18.0	17.5	17.0
Gain Flatness (max)	dB	±0.4	±0.6	±0.8
Reverse Isolation	dB	36		
Noise Figure (max)	dB	3.5	4.0	4.5
Power Output @ 1 dB comp. (min)	dBm	15.5	14.5	14.0
IP3	dBm	+26		
IP2	dBm	+34		
Second Order Harmonic IP	dBm	+49		
VSWR Input / Output (max)		1.7:1 / 1.7:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 5 Volts (max)	mA	65	73	78

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+6 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	100 mW
Peak Power (3 µsec max.)	0.25 W
"S" Series Burn-In Temperature (case)	+125°C

Thermal Data: $V_{CC} = +5 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	132°C/W
Transistor Power Dissipation P_d	0.171 W
Junction Temperature Rise Above Case T_{jc}	+24°C

* Over temperature performance limits for part number CA4012, guaranteed from 0°C to +50°C only.

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.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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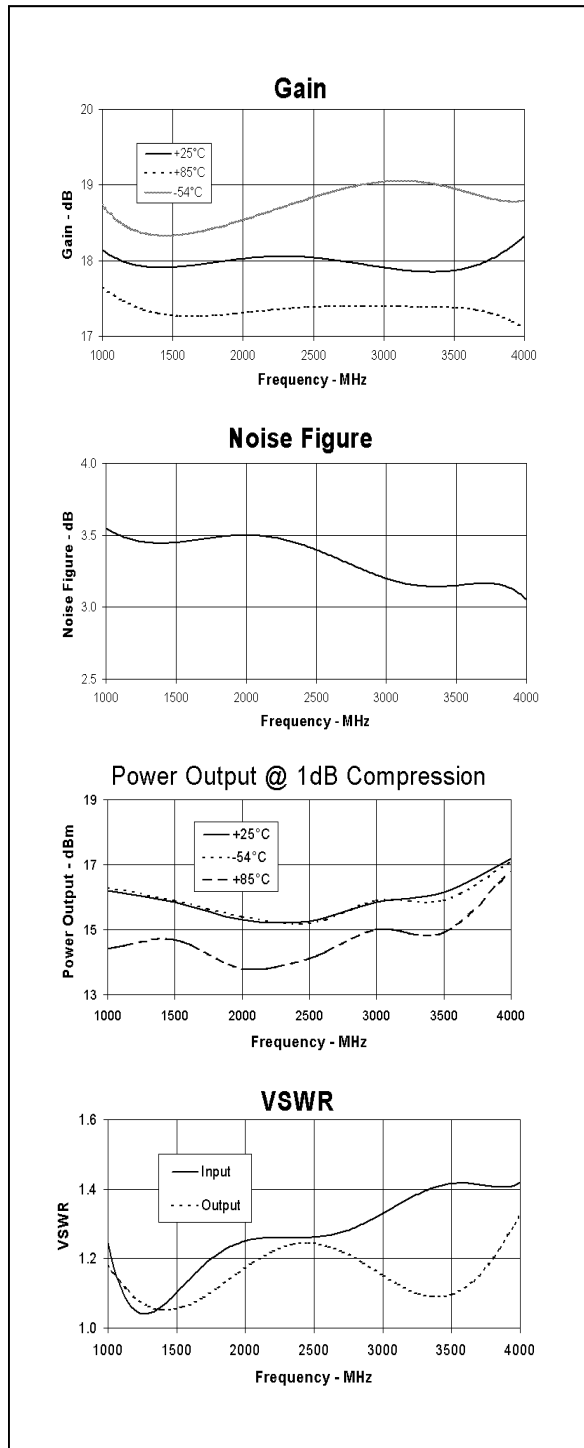
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A4012 / SMA4012

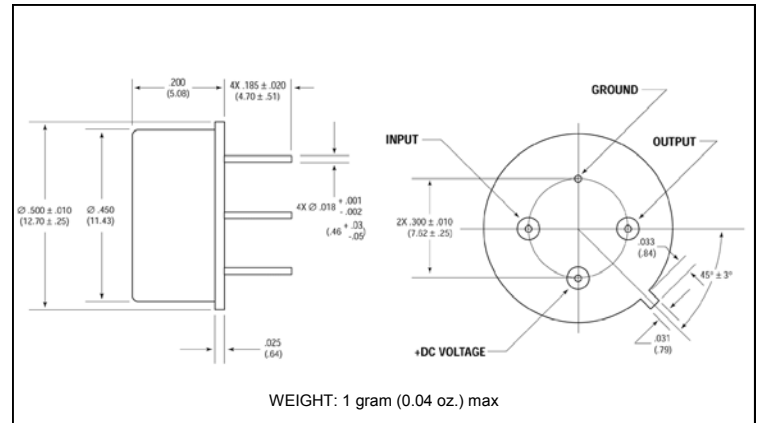
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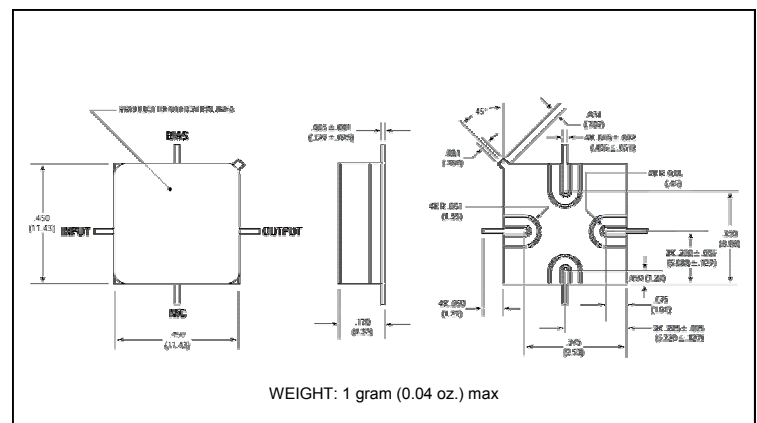
Typical Performance Curves at +25°C



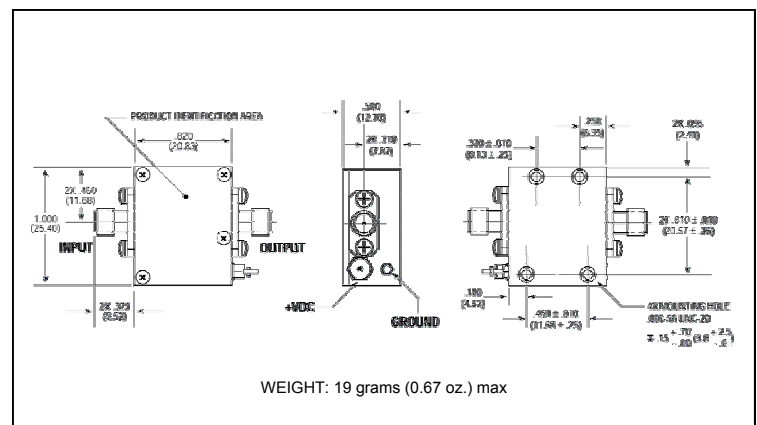
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



* Dimensions are inches (millimeters) ± 0.015 (0.38) unless otherwise specified.

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