

Cascadable Amplifier 5 to 500 MHz

Rev. V3

Features

- LOW NOISE: 2.4 dB (TYP.)
- LOW VSWR: 1.3:1 (TYP.)
- HIGH GAIN: 16 dB (TYP.)

Description

The A1 RF amplifier is a discrete hybrid design, which uses thin film RF manufacturing processes for accurate performance and high reliability.

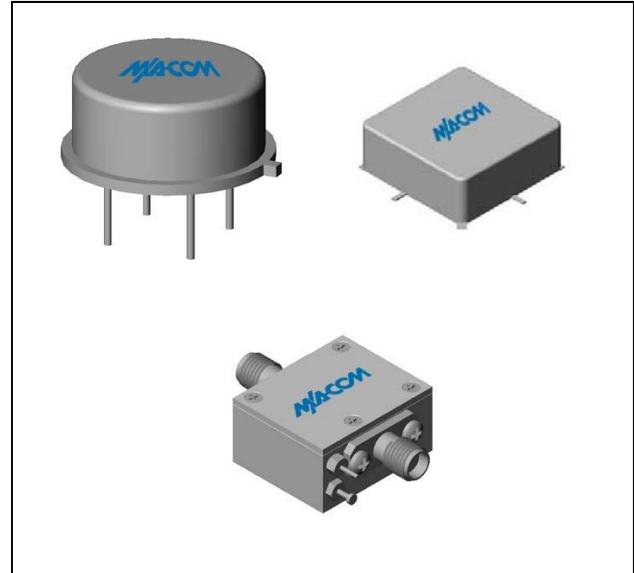
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A1	TO-8
SMA1	Surface Mount
MAAM-008712-000CA1	SMA Connectorized **

**The connectorized version is not RoHs compliant.

Product Image



Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +15 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	1-600	5-500	5-500
Small Signal Gain (min)	dB	16.0	15.0	14.5
Gain Flatness (max)	dB	±0.2	±0.7	±1.0
Reverse Isolation	dB	19		
Noise Figure (max)	dB	2.4	3.0	3.5
Power Output @ 1 dB comp. (min)	dBm	-1.0	-2.0	-3.0
IP3	dBm	+11		
IP2	dBm	+10		
Second Order Harmonic IP	dBm	+15		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	9	11	12

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+18 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	+125°C

Thermal Data: $V_{CC} = +15 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	130°C/W
Transistor Power Dissipation P_d	0.057 W
Junction Temperature Rise Above Case T_{jc}	7°C

* Over temperature performance limits for part number CA1, 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.

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
 • **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
 Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc and its affiliates reserve the right to make changes to the products and information contained herein without notice.

