

Features

- HIGH OUTPUT POWER: +23 dBm (TYP.)
- HIGH THIRD ORDER IP: +36 dBm (TYP.)
- HIGH SECOND ORDER IP: +64 dBm (TYP.)
- LOW NOISE FIGURE: 3 dB (TYP.)

Description

The A101 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This push-pull cascode design offers the benefits of low noise figure and high linearity.

Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A101	TO-8B
SMA101	Surface Mount
MAAM-008734-OCA101	SMA Connectorized **

** The connectorized version is not RoHs compliant.

Product Image



Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +12 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	3-120	5-100	5-100
Small Signal Gain (min)	dB	17.0	16.0	15.5
Gain Flatness (max)	dB	±0.3	±0.4	±0.4
Reverse Isolation	dB	20		
Noise Figure (max)	dB	3.0	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	23.0	22.0	20.5
IP3	dBm	+36		
IP2	dBm	+64		
Second Order Harmonic IP	dBm	+70		
VSWR Input / Output (max)		1.2:1 / 1.5:1	1.7:1 / 1.7:1	1.9:1 / 1.9:1
DC Current @ 12 Volts (max)	mA	105	115	125

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+15 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)	+85°C

Thermal Data: $V_{CC} = +12 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	54°C/W
Transistor Power Dissipation P_d	0.7 W
Junction Temperature Rise Above Case T_{jc}	+38°C

* Over temperature performance limits for part number CA101, guaranteed from 0°C to +50°C only.

1

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.

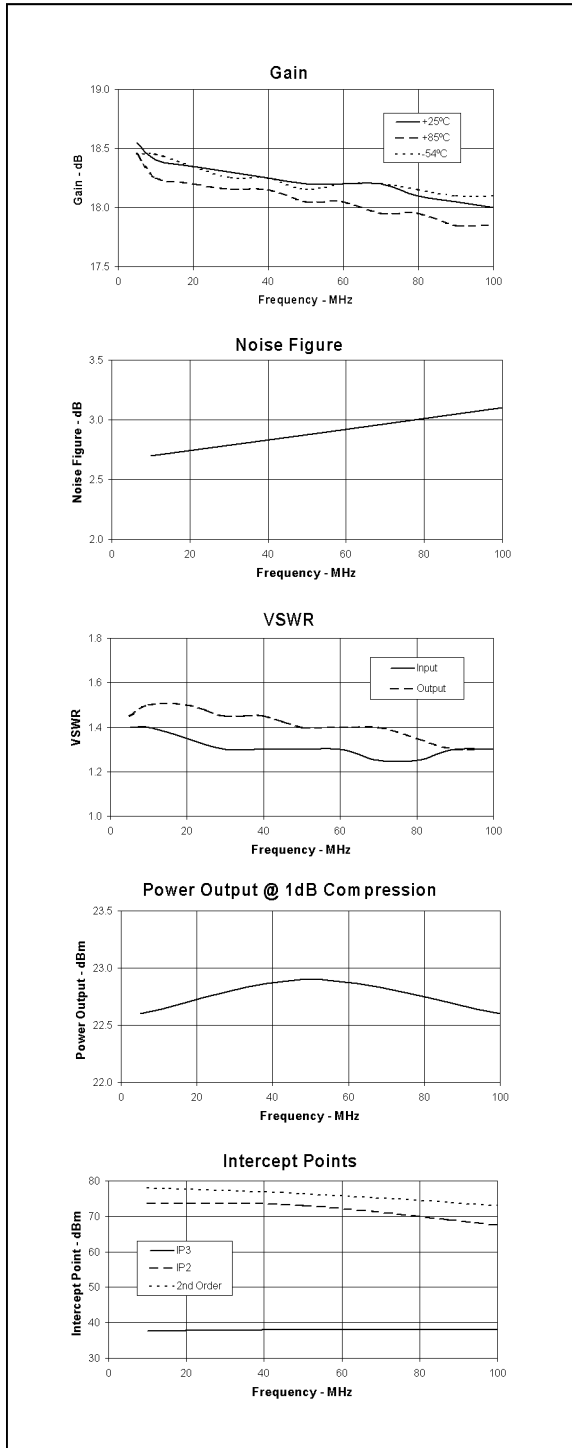
M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

A101 / SMA101

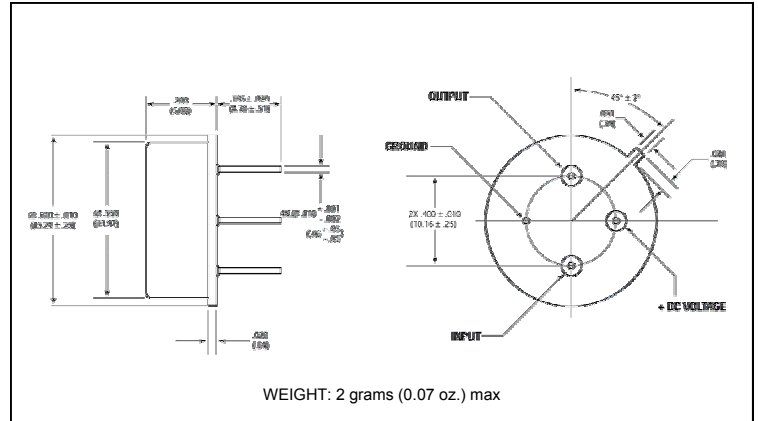
Cascadable Amplifier 5 to 100 MHz

Rev. V2

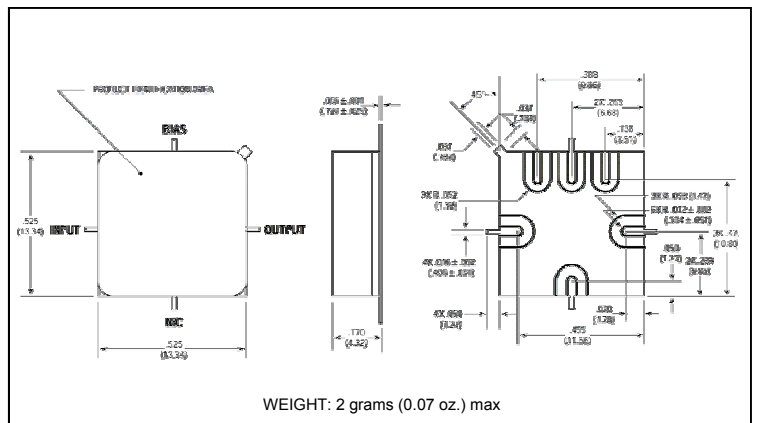
Typical Performance Curves at +25°C



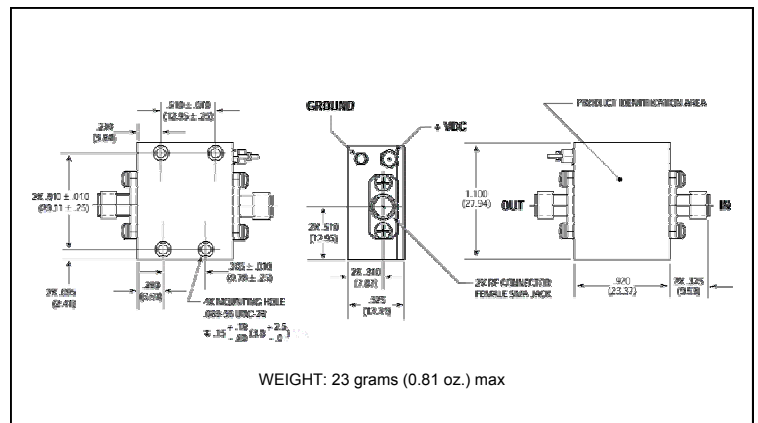
Outline Drawing: TO-8B *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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.macontech.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 product(s) or information contained herein without notice.