

# A101 / SMA101

## Cascadable Amplifier 5 to 100 MHz

Rev. V2

### 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.

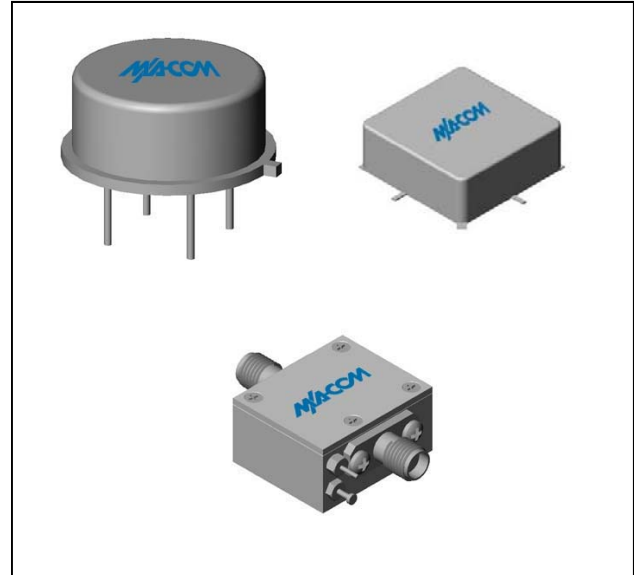
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### 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 $\theta_{jc}$	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.

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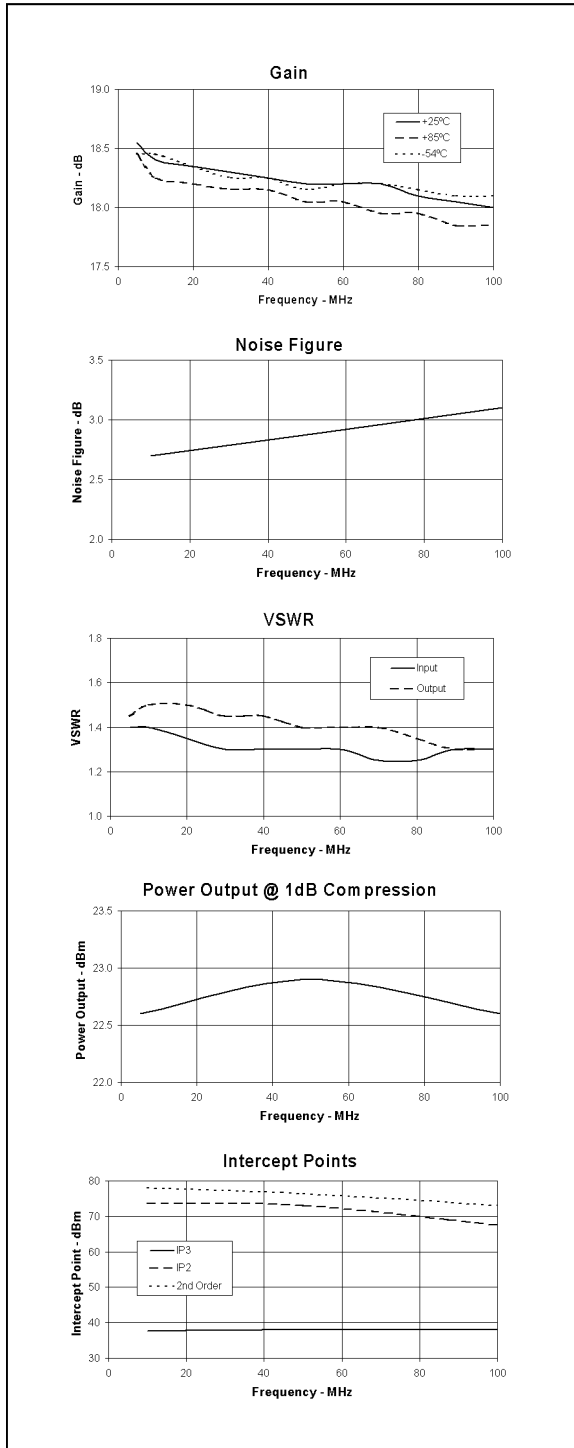
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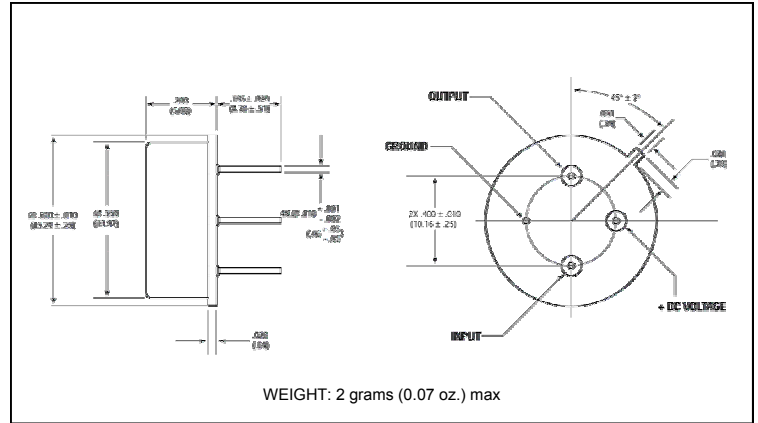
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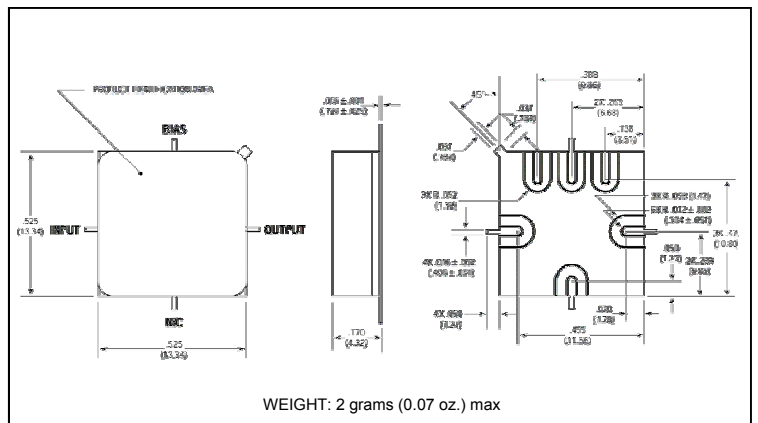
### Typical Performance Curves at +25°C



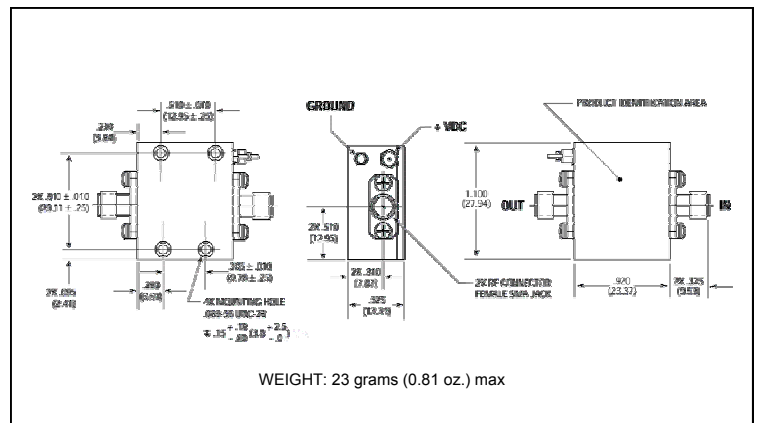
### Outline Drawing: TO-8B \*



### Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*



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

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