

## Cascadable Amplifier 1000 to 4000 MHz

Rev. V3

### Features

- ULTRAWIDE BANDWIDTH: 0.8-4.2 GHz (TYP.)
- HIGH GAIN: 25.5 dB (TYP.)
- HIGH OUTPUT POWER: +19.0 dBm (TYP.)
- LOW NOISE: 4.5 dB (TYP.)

### Description

The RA46 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

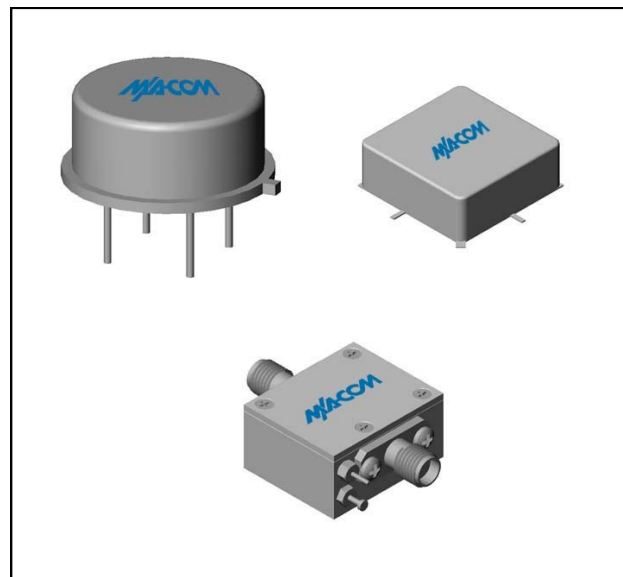
This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8B and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available. An SMA connectorized self assembly kit is also available for the TO-8B module.

### Ordering Information

Part Number	Package
RA46	TO-8B
SMRA46	Surface Mount
MAAM-008740-0CRA46	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	GHz	0.8-4.2	1.0-4.0	1.0-4.0
Small Signal Gain (min)	dB	25.5	24.0	23.5
Gain Flatness (max)	dB	±0.5	±0.8	±1.0
Reverse Isolation	dB	50		
Noise Figure (max)	dB	4.5	5.2	5.7
Power Output @ 1 dB comp. (min)	dBm	19.0	17.0	16.5
IP3	dBm	+30		
IP2	dBm	+50		
Second Order Harmonic IP	dBm	+55		
VSWR Input / Output (max)		1.6:1 / 1.5:1	2.0:1 / 2.0:1	2.1:1 / 2.1:1
DC Current @ 12 Volts (max)	mA	175	185	190

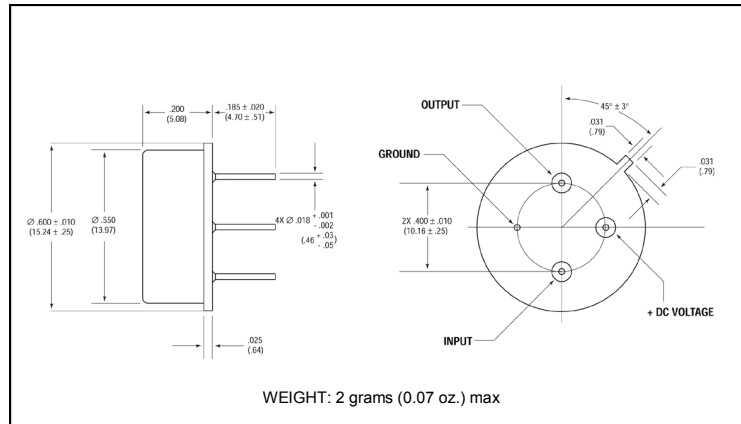
### Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	85°C
DC Voltage	+13 V
Continuous Input Power	+7 dBm
Short Term Input power (1 minute max.)	100 mW
Peak Power (3 µsec max.)	0.25 W
"S" Series Burn-In Temperature (case)	85°C

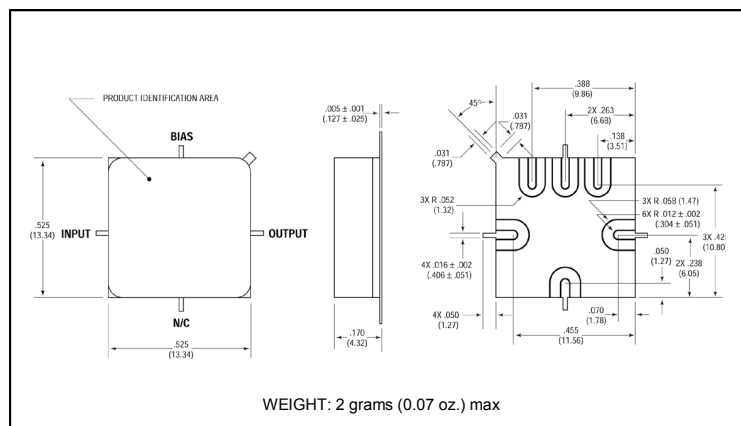
### Thermal Data: $V_{CC} = +12 V_{DC}$

Parameter	Rating
Thermal Resistance $\theta_{jc}$	146°C/W
Transistor Power Dissipation $P_d$	0.49 W
Junction Temperature Rise Above Case $T_{jc}$	72°C

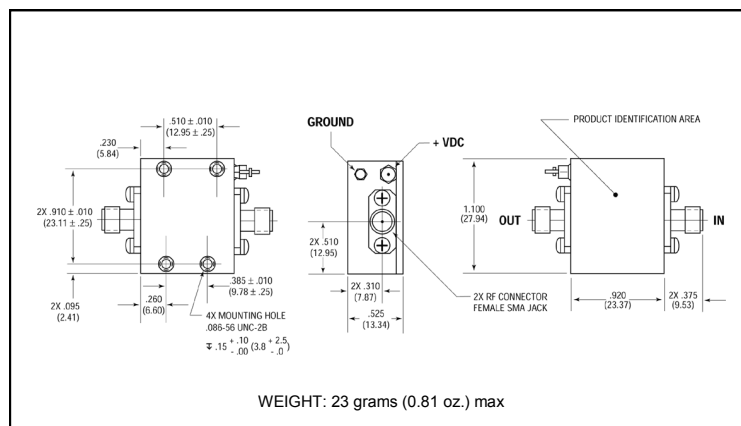
## Outline Drawing: TO-8B \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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