

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.

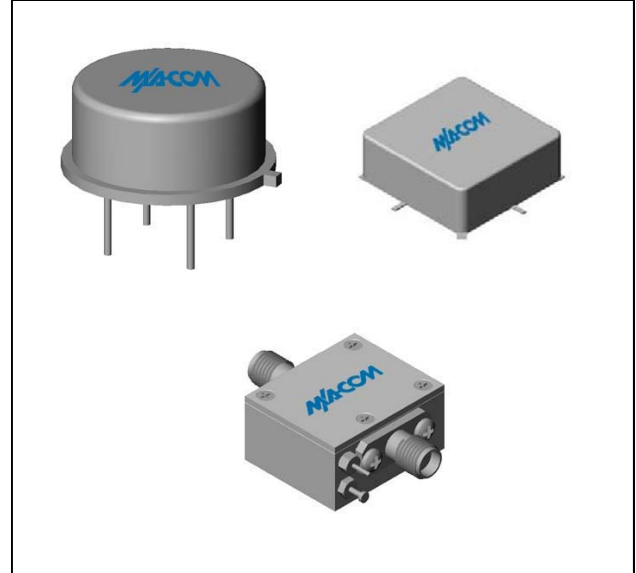
This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8B and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available. An SMA connectorized self assembly kit is also available 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	26.0	24.0	23.5
Gain Flatness (max)	dB	±0.8	±1.0	±1.2
Reverse Isolation	dB	50		
Noise Figure (max)	dB	4.0	5.2	5.7
Power Output @ 1 dB comp. (min)	dBm	20.0	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	170	185	190

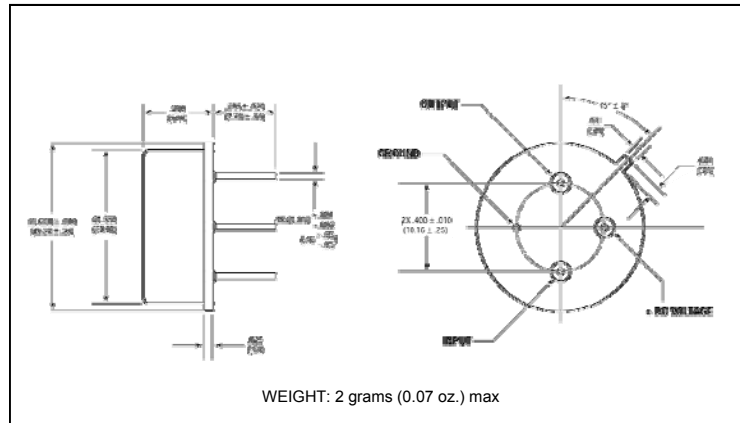
Absolute Maximum Ratings

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

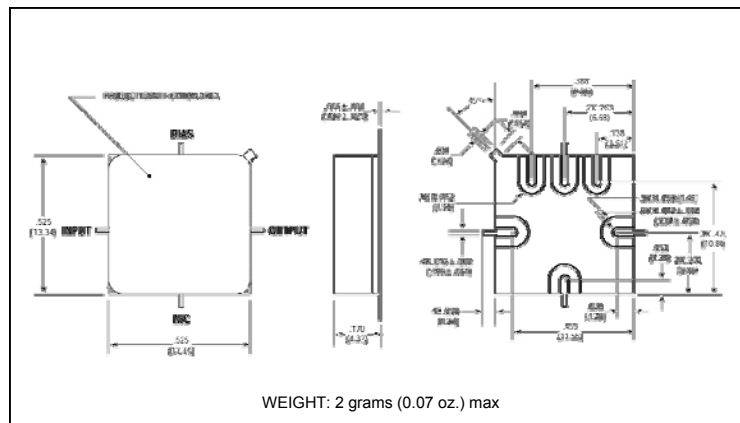
Thermal Data: $V_{CC} = +12 V_{DC}$

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

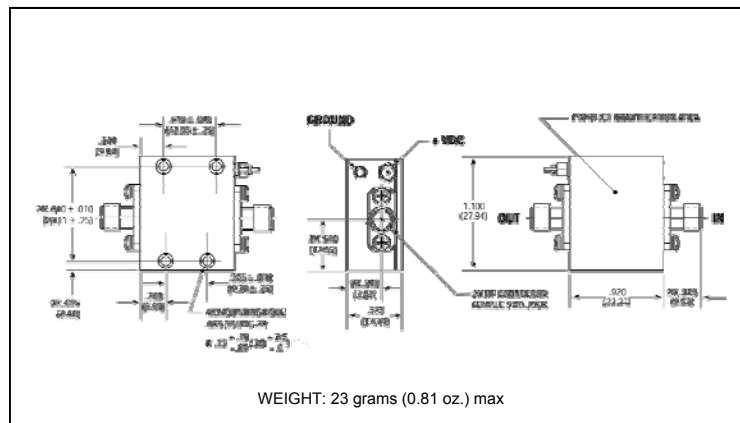
Outline Drawing: TO-8B *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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