RA46/SMRA46



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.

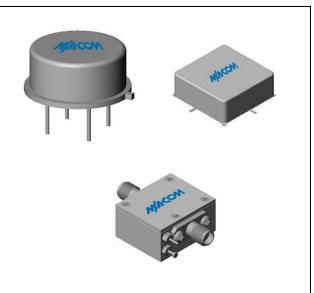
This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8B and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available. An SMA connectorized self assembly kit is also available 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	
Farameter		25°C	0º to 50ºC	-54º to +85ºC*
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 Pd	0.49 W	
Junction Temperature Rise Above Case T _{jc}	72°C	

typical. Mechanical outline has been fixed. Engineering samples Commitment to produce in volume is not duardited.

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 MIA-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are

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[•] India Tel: +91.80.43537383

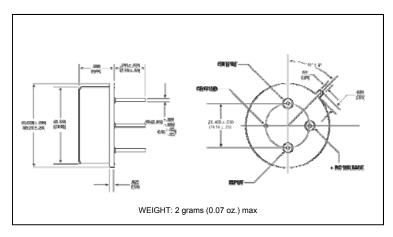
[•] China Tel: +86.21.2407.1588



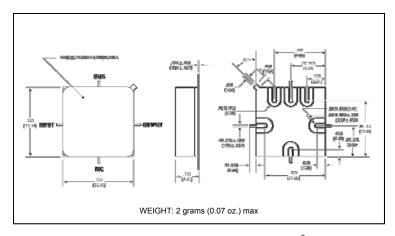
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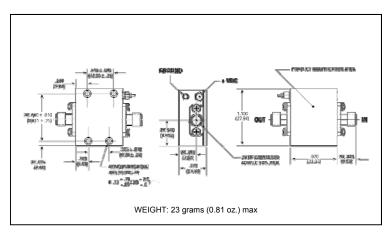
Outline Drawing: TO-8B *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized *



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

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