RA89-1 / SMRA89-1

Cascadable Amplifier
10 to 500 MHz

Rev. V3

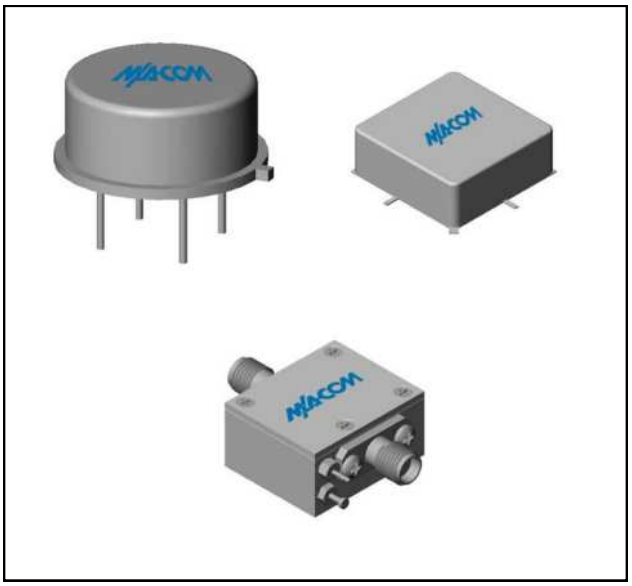
Features

- HIGH GAIN-TWO STAGES: 30.0 dB (TYP.)
- HIGH OUTPUT POWER: +21.5 dBm (TYP.)
- HIGH THIRD ORDER I.P.: +36 dBm (TYP.)
- LOW VSWR: <1.5:1 (TYP.)

Description

The RA89-1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.
This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.
Both TO-8B and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Product Image



Ordering Information

Part Number	Package
RA89-1	TO-8B
SMRA89-1	Surface Mount
CRA89-1 **	SMA Connectorized

**The connectorized version is not RoHs compliant.

Electrical Specifications: Z_0 = 50Ω, V_{CC} = +15 V_{DC}

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
Frequency	MHz	5-600	10-500	10-500
Small Signal Gain (min)	dB	30.0	29.0	28.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	36		
Noise Figure (max)	dB	3.2	4.5	5.0
Power Output @ 1 dB comp. (min)	dBm	21.5	20.0	20.0
IP3	dBm	+36		
IP2	dBm	+50		
Second Order Harmonic IP	dBm	+57		
VSWR Input / Output (max)		1.5:1 / 1.5:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	130	137	140

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	125ºC
DC Voltage	+17 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)	125ºC

Thermal Data: V_{CC} = +15 V_{DC}

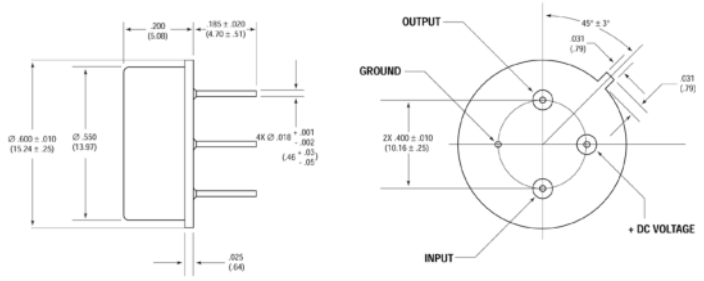
Parameter	Rating
Thermal Resistance θ_{jc}	87ºC/W
Transistor Power Dissipation P_d	0.873 W
Junction Temperature Rise Above Case T_{jc}	76ºC

* Over temperature performance limits for part number CRA89-1, guaranteed from 0°C to +50°C only.

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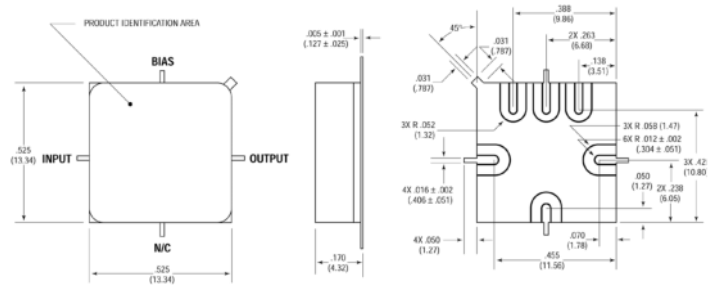
For further information and support please visit:
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Outline Drawing: TO-8B *



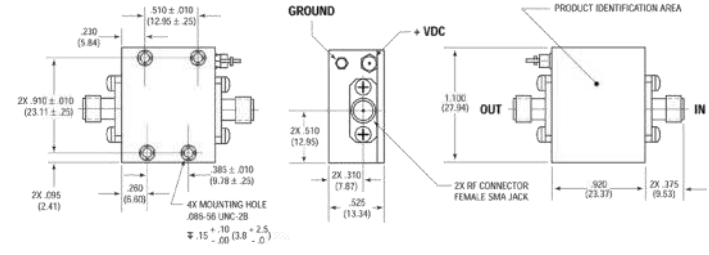
WEIGHT: 2 grams (0.07 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 2 grams (0.07 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 23 grams (0.81 oz.) max

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

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