RA69 / SMRA69

Cascadable Amplifier
10 to 1000 MHz

Rev. V2

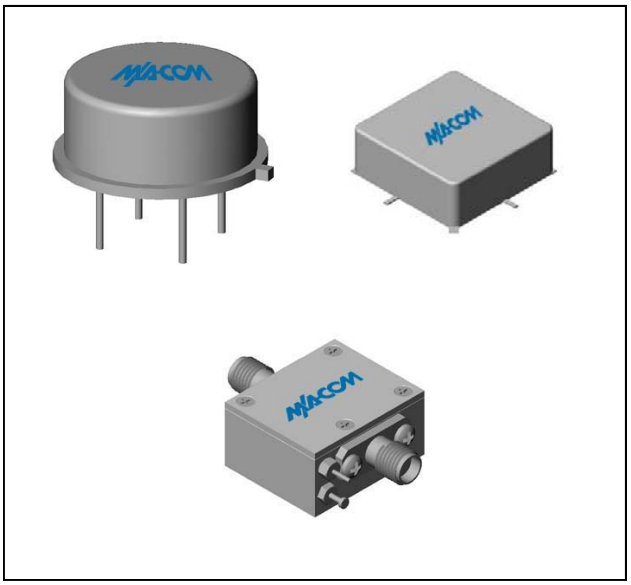
Features

- AVAILABLE IN SURFACE MOUNT
- HIGH GAIN-TWO STAGES: 25 dB (TYP.)
- HIGH OUTPUT POWER +23 dBm (TYP.)
- HIGH THIRD ORDER I.P. +34 dBm (TYP.)

Description

The RA69 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
RA69	TO-8B
SMRA69	Surface Mount
CRA69 **	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	5-1000	10-1000	10-1000
Small Signal Gain (min)	dB	25.0	24.0	23.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	33		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	23.0	20.0	20.0
IP3	dBm	+34		
IP2	dBm	+55		
Second Order Harmonic IP	dBm	+60		
VSWR Input / Output (max)		1.5:1 / 1.5:1	2.0:1 / 2.0:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	130	138	145

* Over temperature performance limits for part number CRA69, guaranteed from 0°C to +50°C only.

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}	100ºC/W
Transistor Power Dissipation P_d	0.865 W
Junction Temperature Rise Above Case T_{jc}	87ºC

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PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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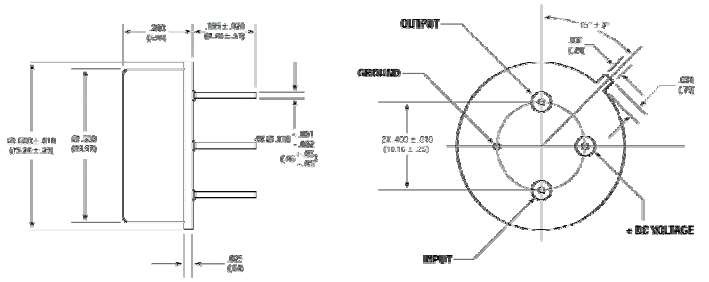
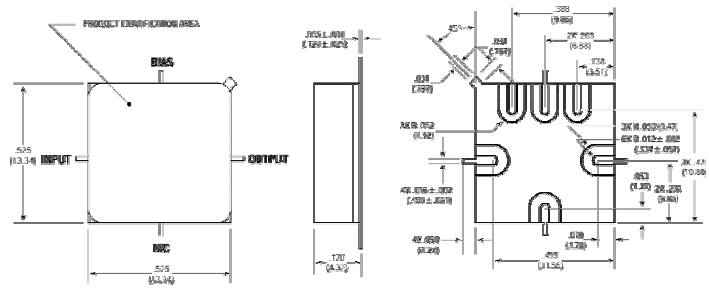
Outline Drawing: TO-8B *



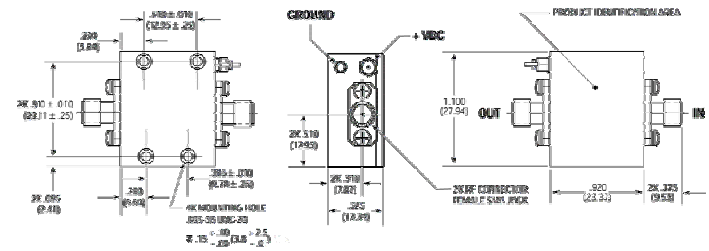
WEIGHT: 2 grams (0.07 oz.) max

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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