RA63-1 / SMRA63-1

Cascadable Amplifier
2000 to 6000 MHz

Rev. V2

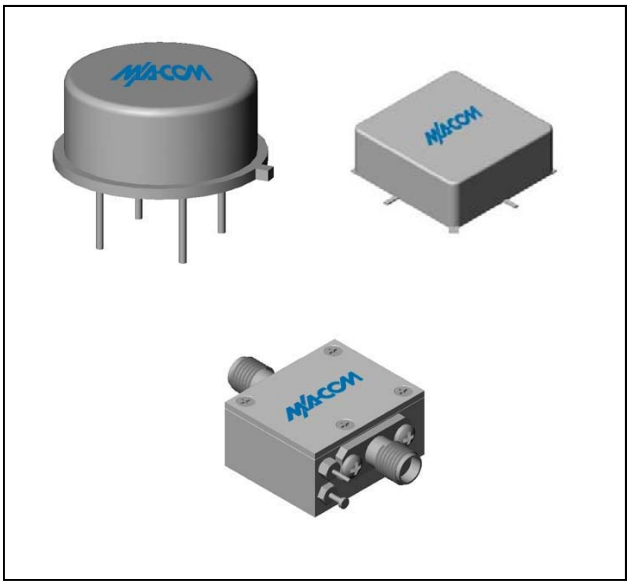
Features

- ULTRAWIDE BANDWIDTH: 1.8-6.2 GHz (TYP.)
- HIGH GAIN: 19.5 dB (TYP.)
- HIGH OUTPUT POWER: +16.0 dBM (TYP)
- LOW POWER SUPPLY VOLTAGE: +5 Vdc

Description

The RA63-1 microwave 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.

Product Image



Ordering Information

Part Number	Package
RA63-1	TO-8B
SMRA63-1	Surface Mount
CRA63-1 **	SMA Connectorized

** The SMA Connectorized version is not RoHs compliant.

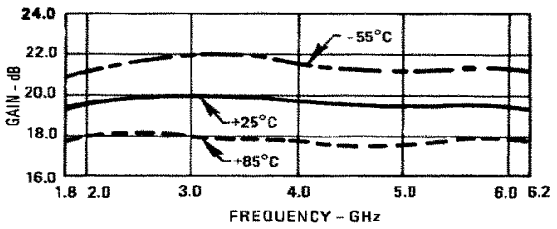
Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +5\ V_{DC}$

Parameter	Units	RA63-1 / SMRA63-1			CRA63-1	
		Typical	Guaranteed		Typical	Guaranteed
		25ºC	0º to 50ºC	-54º to +85ºC*	25ºC	0º to 50ºC
Frequency	GHz	1.8-6.2	2.0-6.0	2.0-6.0	1.8-6.2	2.0-6.0
Small Signal Gain (min)	dB	20.3	18.5	18.0	19.7	18.0
Gain Flatness (max)	dB	±0.7	±1.0	±1.2	±1.1	±1.3
Reverse Isolation	dB	50			50	
Noise Figure (max)	dB	3.5	6.0	6.5	4.0	6.5
Power Output @ 1 dB comp. (min)	dBm	16.0	13.0	12.5	15.5	12.5
IP3	dBm	+32			+31.5	
IP2	dBm	+50			+49.5	
Second Order Harmonic IP	dBm	+54			+53.5	
VSWR Input / Output (max)		2.0:1 / 1.9:1	2.2:1 / 2.1:1	2.3:1 / 2.2:1	2.2:1 / 2.1:1	2.4:1 / 2.3:1
DC Current @ 5 Volts (max)	mA	110	135	140	110	140

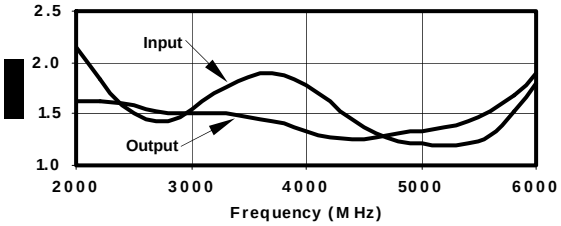
• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

Typical Performance Curves at +25°C

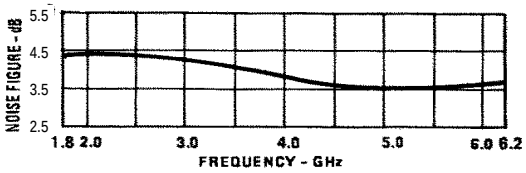
Gain



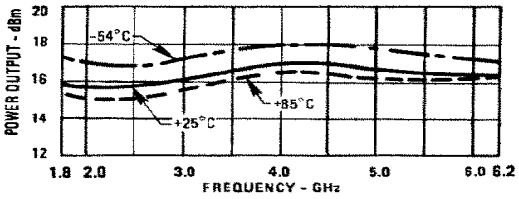
VSWR



Noise Figure

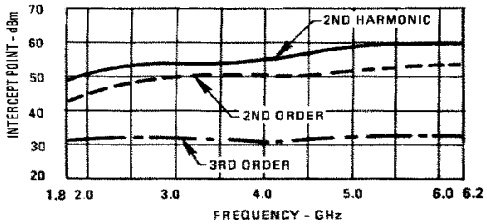


Power Output*



*at 1 dB Gain Compression

Intercept Point



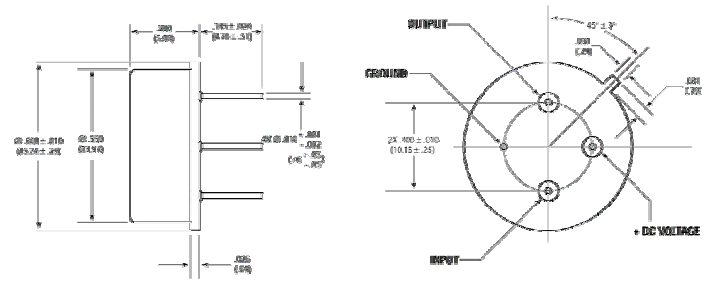
Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-64ºC to +125ºC
Case Temperature	+125ºC
DC Voltage	+6 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)	+125ºC

Thermal Data: V_{CC} = +5 V_{DC}

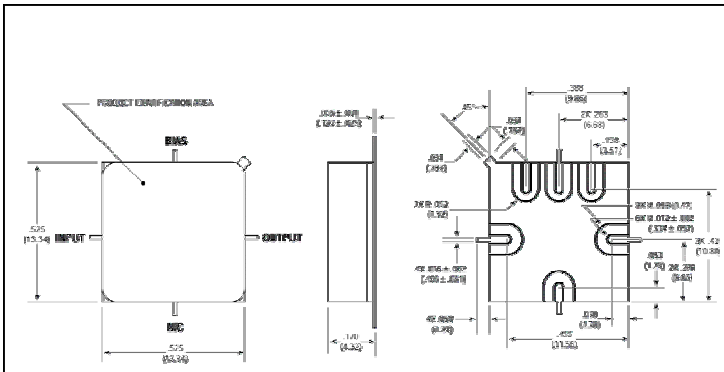
Parameter	Rating
Thermal Resistance θ_{jc}	185ºC/W
Transistor Power Dissipation P_d	0.203 W
Junction Temperature Rise Above Case T_{jc}	+38ºC

Outline Drawing: TO-8B *



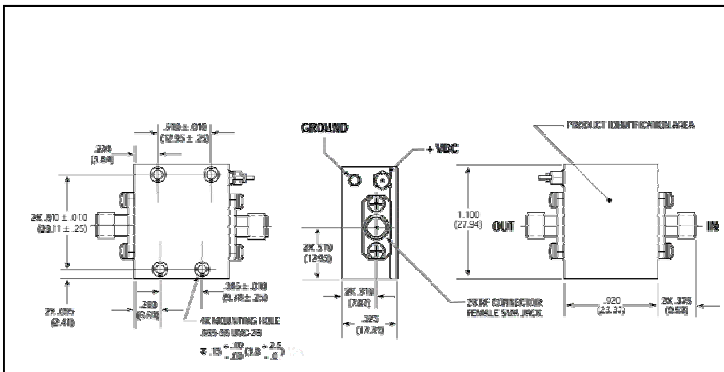
WEIGHT: 2 grams (0.07 oz.) max

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.