# RA63-1 / SMRA63-1



# Cascadable Amplifier 2000 to 6000 MHz

#### **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.

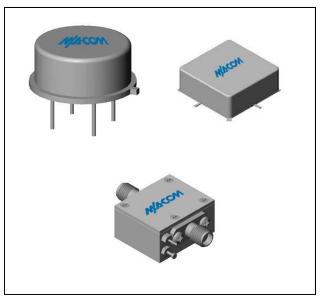
#### Ordering Information

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

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

\*\* The SMA Connectorized version is not RoHs compliant.

## Product Image



		RA63-1 / SMRA63-1			CRA63-1	
Parameter	Units	Typical Guaranteed		Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*	25⁰C	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

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Visit www.macomtech.com for additional data sheets and product information.

Rev. V2

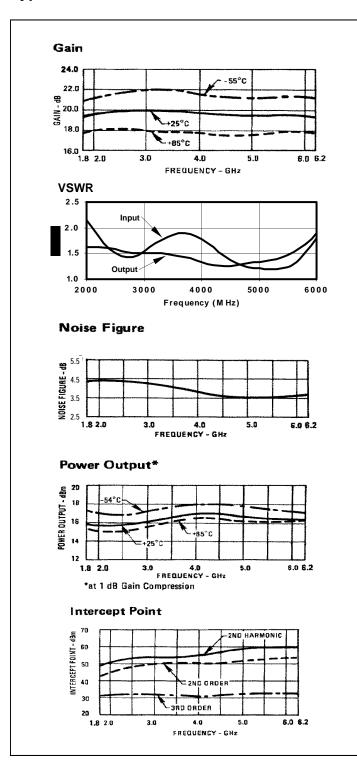
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Rev. V2

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#### Typical Performance Curves at +25°C



## **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Storage Temperature	-64°C to +125°C	
Case Temperature	+125°C	
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)	+125°C	

## Thermal Data: V<sub>CC</sub> = +5 V<sub>DC</sub>

Parameter	Rating
Thermal Resistance $\theta_{jc}$	185°C/W
Transistor Power Dissipation $P_d$	0.203 W
Junction Temperature Rise Above Case $\mathrm{T}_{\mathrm{jc}}$	+38°C

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Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples indo no tock may be available commitment to produce in volume is not guaranteed.

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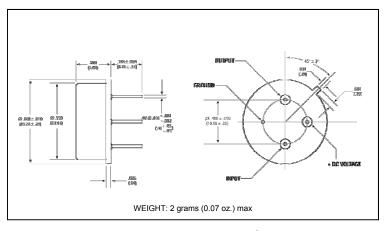


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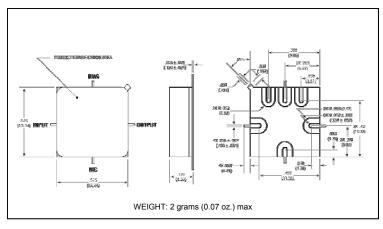
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Rev. V2

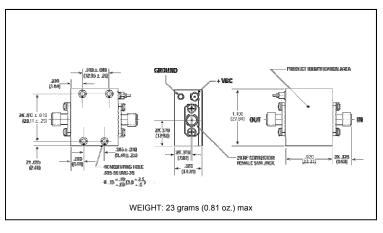
## Outline Drawing: TO-8B \*



Outline Drawing: Surface Mount



#### Outline Drawing: SMA Connectorized \*



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

