tyco Electronics

MACOM

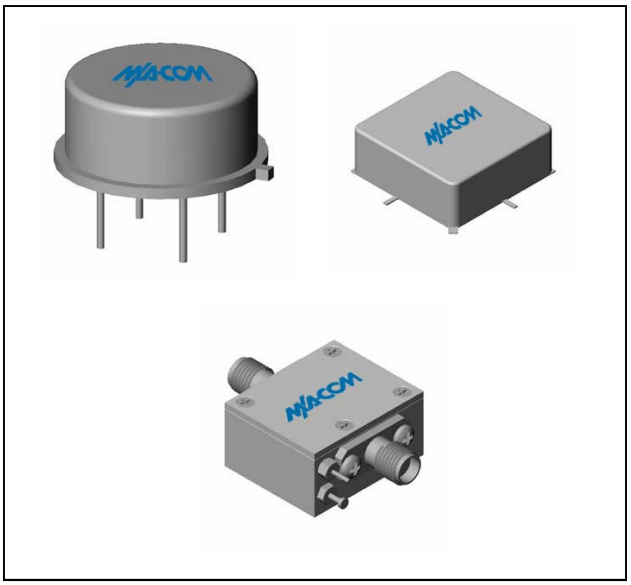
Cascadable Amplifier
2000 to 6000 MHz

RA63-1 / SMRA63-1
V1

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

Product Image



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

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
Frequency	GHz	1.8-6.2	2.0-6.0	2.0-6.0
Small Signal Gain (min)	dB	22.0	19.0	18.0
Gain Flatness (max)	dB	±0.5	±1.0	±1.2
Reverse Isolation	dB	50		
Noise Figure (max)	dB	5.5	7.0	7.5
Power Output @ 1 dB comp. (min)	dBm	16.0	13.0	12.5
IP3	dBm	+32		
IP2	dBm	+50		
Second Order Harmonic IP	dBm	+54		
VSWR Input / Output (max)		1.7:1 / 1.7:1	2.2:1 / 2.0:1	2.3:1 / 2.1:1
DC Current @ 5 Volts (max)	mA	120	135	140

* Over temperature performance limits for part number CRA63-1, guaranteed from 0°C to +50°C only.

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

- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

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

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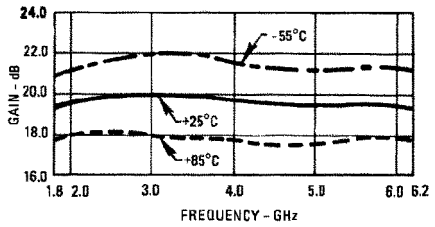
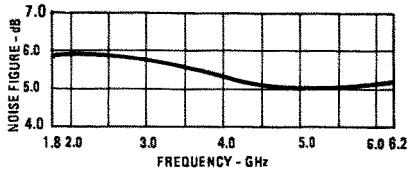
Typical Performance Curves at +25°C

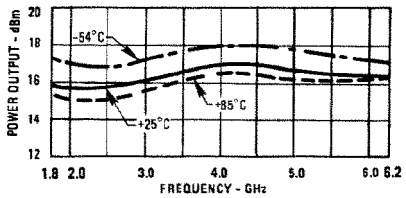
Gain



Noise Figure

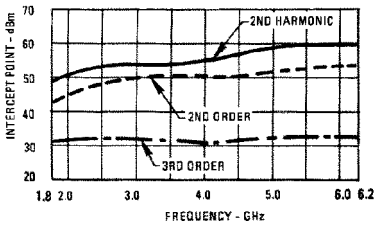


Power Output*

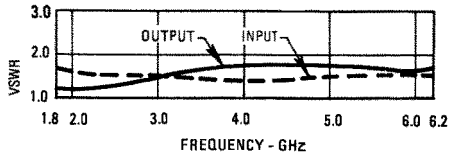


*at 1 dB Gain Compression

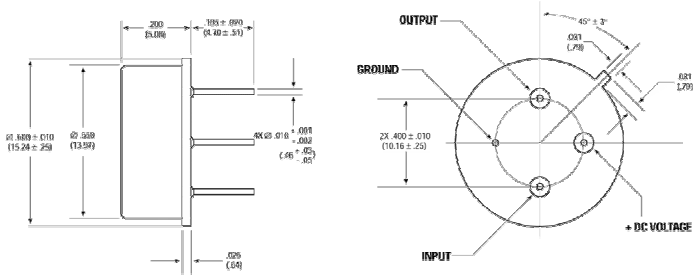
Intercept Point



VSWR

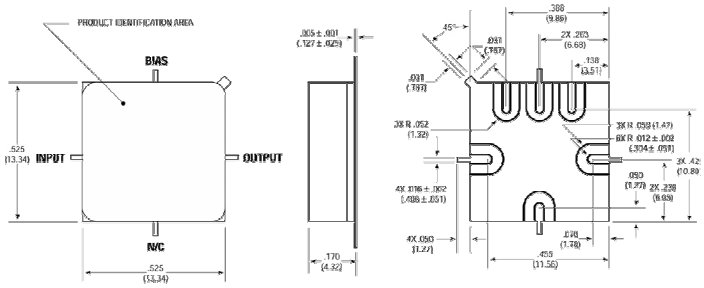


Outline Drawing: TO-8B *



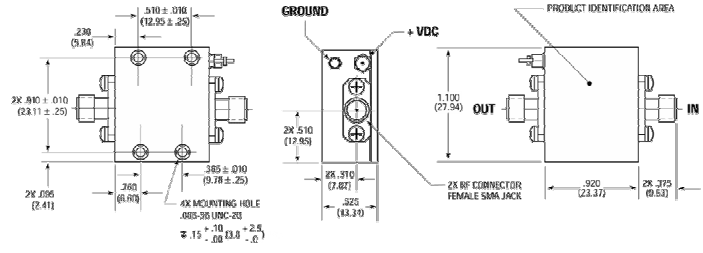
WEIGHT: 2 grams (0.07 oz.) max

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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