

Cascadable Amplifier 2000 to 6000 MHz

RA62/SMRA62

V2

Features

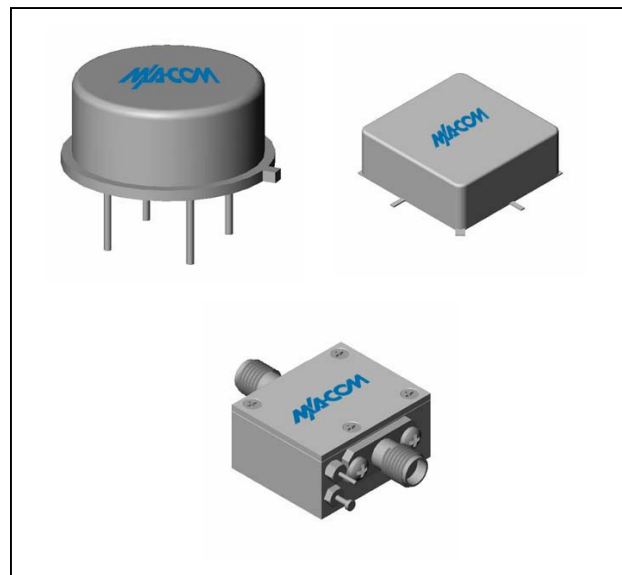
- ULTRAWIDE BANDWIDTH 1.5-6.2 GHz (TYP.)
- MEDIUM GAIN 16 dB (TYP.)
- MEDIUM OUTPUT POWER +13 dBm (TYP.)
- LOW NOISE FIGURE 4 dB (TYP.)

Description

The RA62 RF 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-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Product Image



Ordering Information

Part Number	Package
RA62	TO-8
SMRA62	Surface Mount
CRA62	SMA Connectorized

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

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	GHz	1.5-6.2	2.0-6.0	2.0-6.0
Small Signal Gain (min)	dB	16.0	14.0	13.5
Gain Flatness (max)	dB	±0.4	±0.7	±1.0
Reverse Isolation	dB	30		
Noise Figure (max)	dB	4.0	5.0	5.5
Power Output @ 1 dB comp. (min)	dBm	13.0	12.0	11.5
IP3	dBm	+28		
IP2	dBm	+40		
Second Order Harmonic IP	dBm	+45		
VSWR Input / Output (max)		1.5:1 / 1.5:1	1.9:1 / 1.9:1	2.1:1 / 2.1:1
DC Current @ 5 Volts (max)	mA	65	72	74

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°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: $V_{CC} = +5 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	92.2°C/W
Transistor Power Dissipation P_d	0.171 W
Junction Temperature Rise Above Case T_{jc}	16°C

* Over temperature performance limits for part number CRA62, guaranteed from 0°C to +50°C only.

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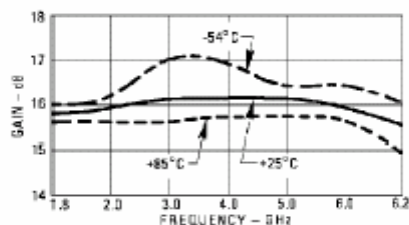
• **North America** Tel: 800.366.2266 / Fax: 978.366.2266
 • **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
 • **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

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

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V2

Outline Drawing: TO-8 *



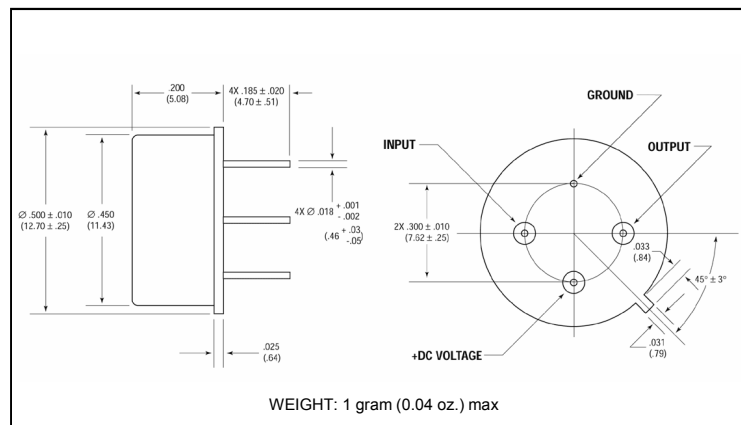
Frequency (GHz)	Noise Figure (dB)
1.8	4.0
2.0	3.9
3.0	3.7
4.0	3.5
5.0	3.3
6.0	3.3
6.2	3.5

The graph shows the power output in dBm as a function of frequency in GHz for three different models. The y-axis ranges from 12.0 to 15.0 dBm, and the x-axis ranges from 1.8 to 6.2 GHz. The 85 GHz model (solid line) has the highest power output, peaking at approximately 14.8 dBm around 3.1 GHz. The 95 GHz model (dashed line) has a power output between 13.0 and 13.5 dBm. The 125 GHz model (dotted line) has the lowest power output, ranging from approximately 12.5 to 13.0 dBm.

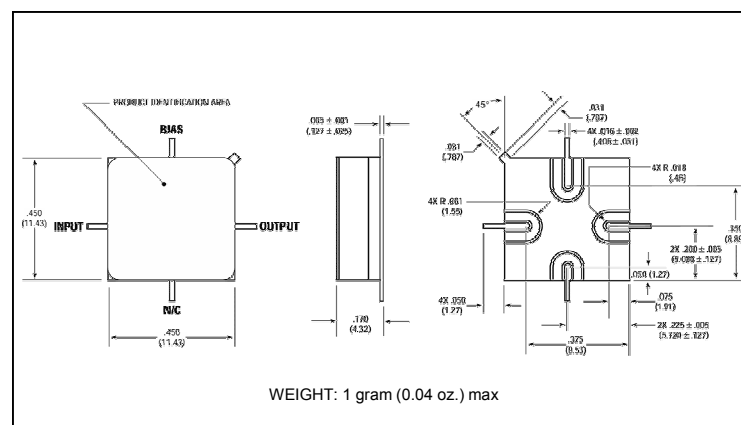
Frequency (GHz)	85 GHz Model (dBm)	95 GHz Model (dBm)	125 GHz Model (dBm)
1.8	13.5	13.0	12.5
2.0	14.0	13.2	12.6
3.1	14.8	13.3	12.7
4.0	14.5	13.2	12.6
5.0	14.2	13.1	12.5
6.0	13.8	12.9	12.4
6.2	13.5	12.8	12.3

*at 1 dB Gain Compression

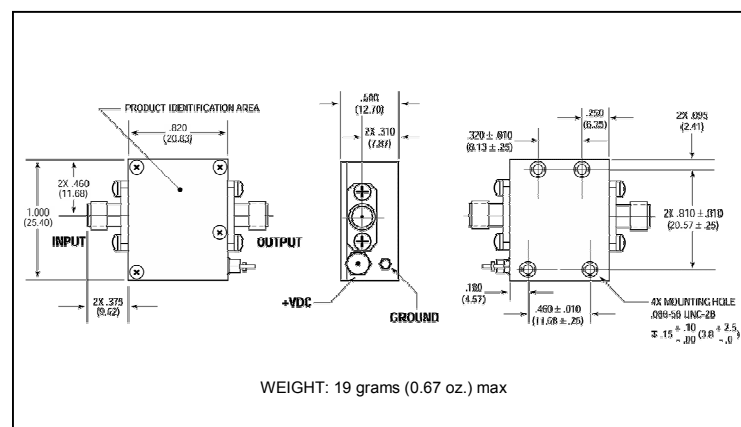
Frequency (GHz)	2ND HARMONIC (dBm)	2ND ORDER TWO TONE (dBm)	3RD ORDER TWO TONE (dBm)
1.8	50	40	25
2.0	48	38	26
3.0	40	35	28
4.0	45	40	27
5.0	50	45	26
6.0	60	50	25



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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