A61 / SMA61

Cascadable Amplifier
2 to 6 GHz

Rev. V3

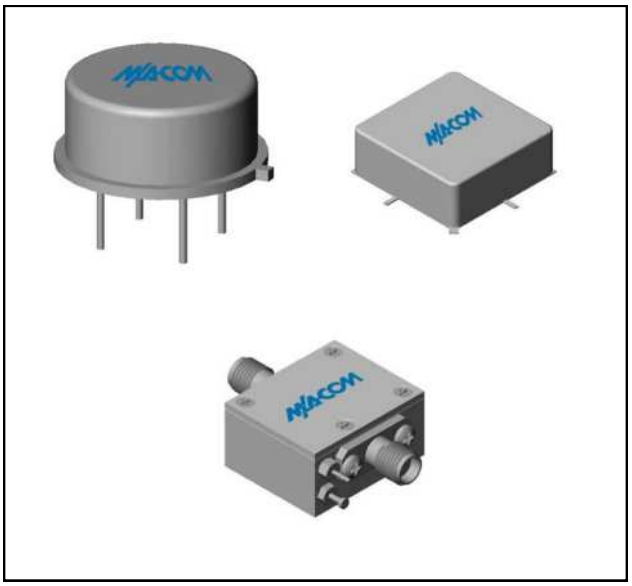
Features

- WIDE BANDWIDTH: 2-6 GHz
- MEDIUM OUTPUT LEVEL: +12.5 dBm (TYP.)
- LOW NOISE: 3.2 dB (TYP.)

Description

The A61 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.
This single stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. An RF choke is used for DC power supply decoupling.
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
A61	TO-8
SMA61	Surface Mount
CA61 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

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	7.5	6.5	6.0
Gain Flatness (max)	dB	±0.4	±0.7	±0.9
Reverse Isolation	dB	14		
Noise Figure (max)	dB	3.2	4.3	4.8
Power Output @ 1 dB comp. (min)	dBm	12.5	11.0	10.5
IP3	dBm	+25		
IP2	dBm	+37		
Second Order Harmonic IP	dBm	+42		
VSWR Input / Output (max)		1.5:1 / 1.5:1	2.0:1 / 2.0:1	2.1:1 / 2.1:1
DC Current @ 5 Volts (max)	mA	35	40	42

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	+125ºC
DC Voltage	+6 V
Continuous Input Power	13 dBm
Short Term Input power (1 minute max.)	50 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}	132ºC/W
Transistor Power Dissipation P_d	0.171 W
Junction Temperature Rise Above Case T_{jc}	23ºC

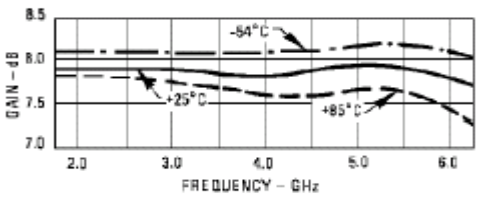
* Over temperature performance limits for part number CA61, guaranteed from 0°C to +50°C only.

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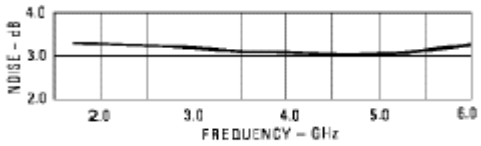
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https://www.macom.com/support

Typical Performance Curves at +25°C

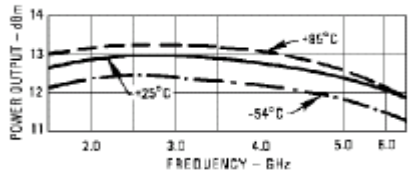
Gain



Noise Figure

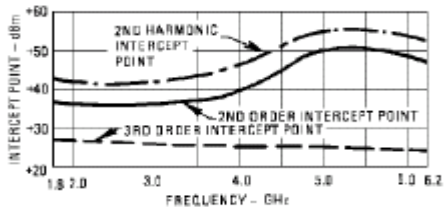


Power Output*

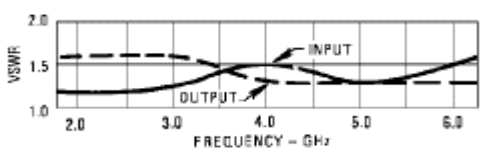


* at 1 dB Gain Compression

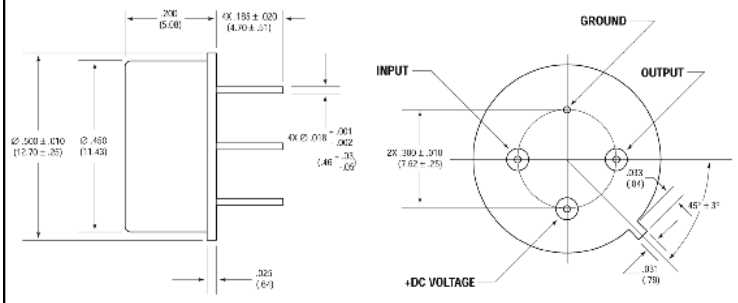
Intercept Point



VSWR

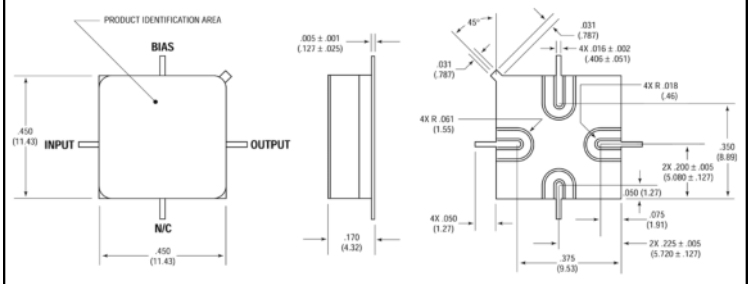


Outline Drawing: TO-8 *



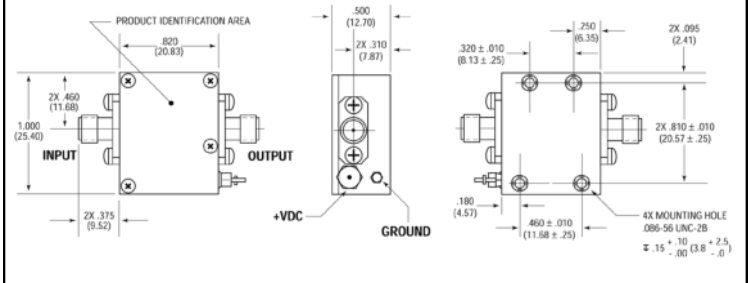
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 19 grams (0.67 oz.) max

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

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