

## Cascadable Amplifier 10 to 1000 MHz

Rev. V4

### Features

- 27.5 dB High Gain, 2 Stages
- >3.0 Noise Figure
- 15 dBm Output Power
- 5 - 15 V Bias Range

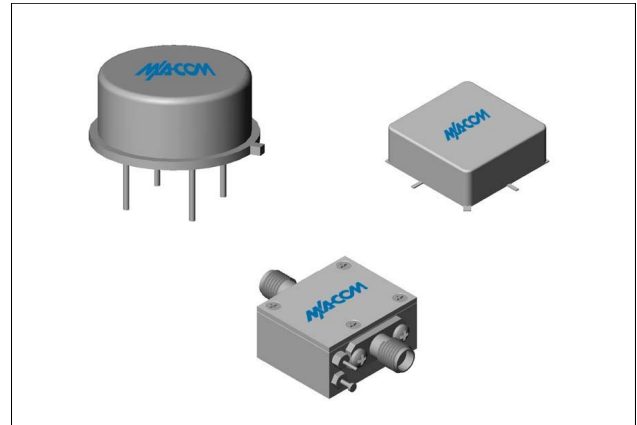
### Description

The A66-1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

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
A66-1	TO-8
SMA66-1	Surface Mount
CA66-1 <sup>1</sup>	SMA Connectorized

1. The connectorized version is not RoHS compliant.

### Electrical Specifications<sup>2</sup>: $Z_0 = 50 \Omega$ , $V_{CC} = 15 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C <sup>2</sup>
Frequency	GHz	5 - 1200	10 - 1000	10 - 1000
Small Signal Gain (min.)	dB	27.5	26.0	25.5
Gain Flatness (max.)	dB	±0.4	±0.7	±1.0
Reverse Isolation	dB	33	—	—
Noise Figure (max.)	dB	2.9	3.5	4.0
Power Output @ 1 dB comp. (min.)	dBm	15.0	14.5	14.0
IP3	dBm	28	—	—
IP2	dBm	38	—	—
Second Order Harmonic IP	dBm	43	—	—
VSWR Input / Output (max.)	Ratio	1.5:1 / 1.5:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max.)	mA	66	69	72

2. Over temperature performance limits for part number CA1212, guaranteed from 0°C to +50°C only.

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## Absolute Maximum Ratings<sup>3,4</sup>

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	17 V
Continuous Input Power	6 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	0.5 W
“S” Series Burn-In Temperature (case)	+125°C

3. Exceeding any one or combination of these limits may cause permanent damage to this device.

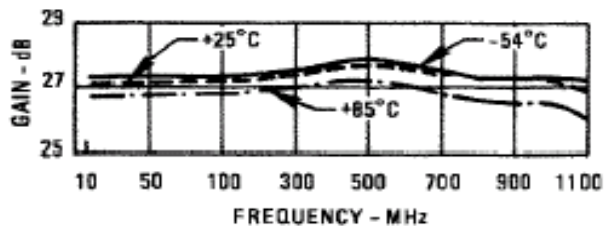
4. MACOM does not recommend sustained operation near these survivability limits.

## Thermal Data: $V_{CC} = 15 V_{DC}$

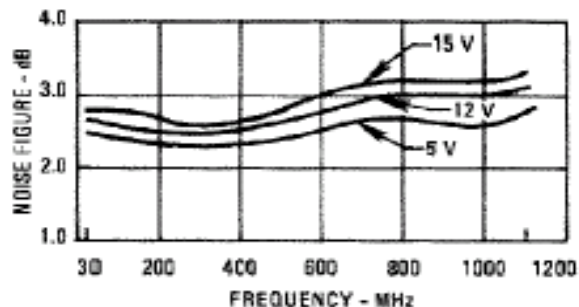
Parameter	Rating
Thermal Resistance $\theta_{JC}$	145°C/W
Transistor Power Dissipation $P_D$	0.419 W
Junction Temperature Rise Above Case $T_{JC}$	61°C

## Typical Performance Curves at +25°C

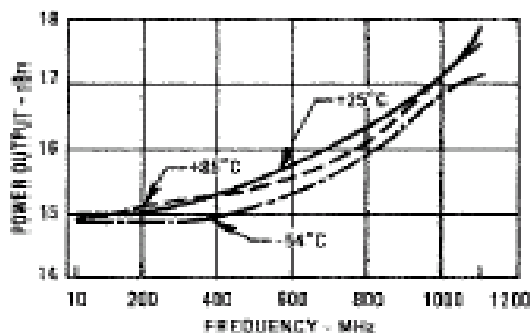
**Gain**



**Noise Figure**

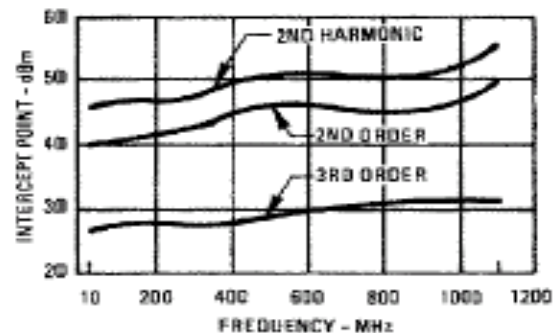


**Power Output\***

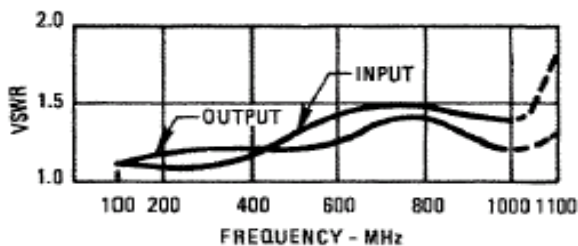


\* at 1 dB Gain Compression

**Intercept Point**



**VSWR**



# A66-1 / SMA66-1 / CA66-1

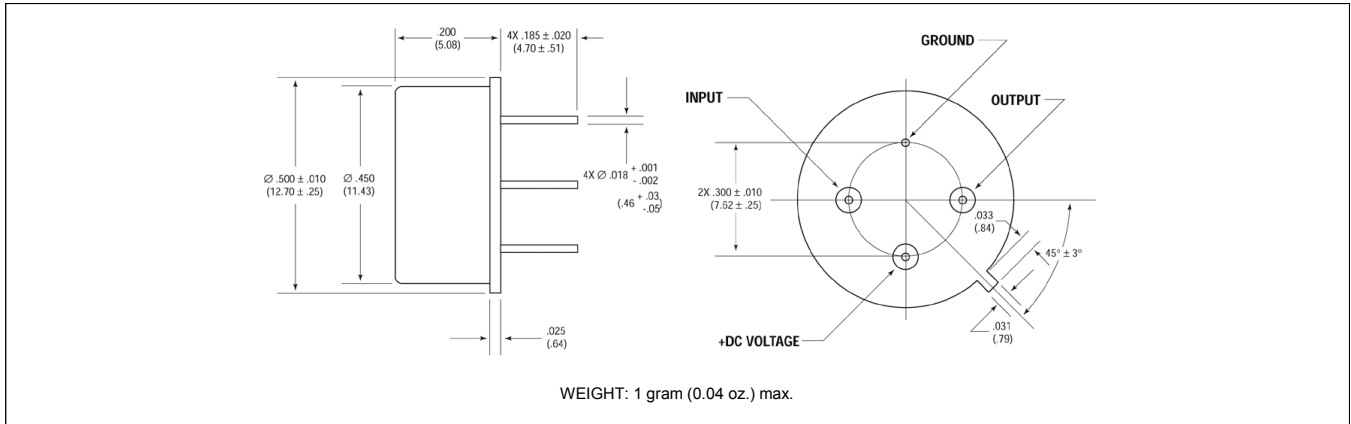


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**10 to 1000 MHz**

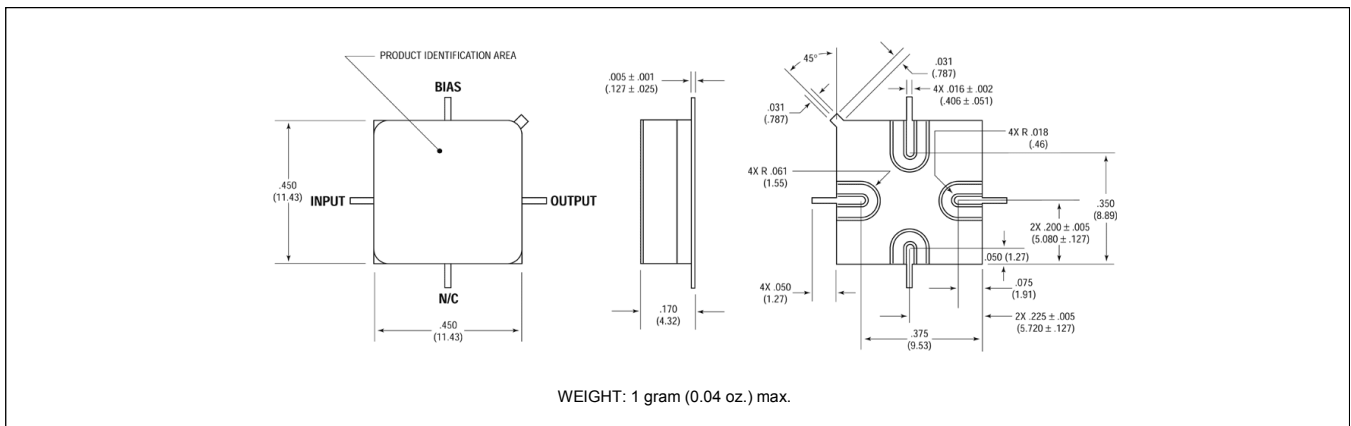
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## Outline Drawings<sup>5</sup>

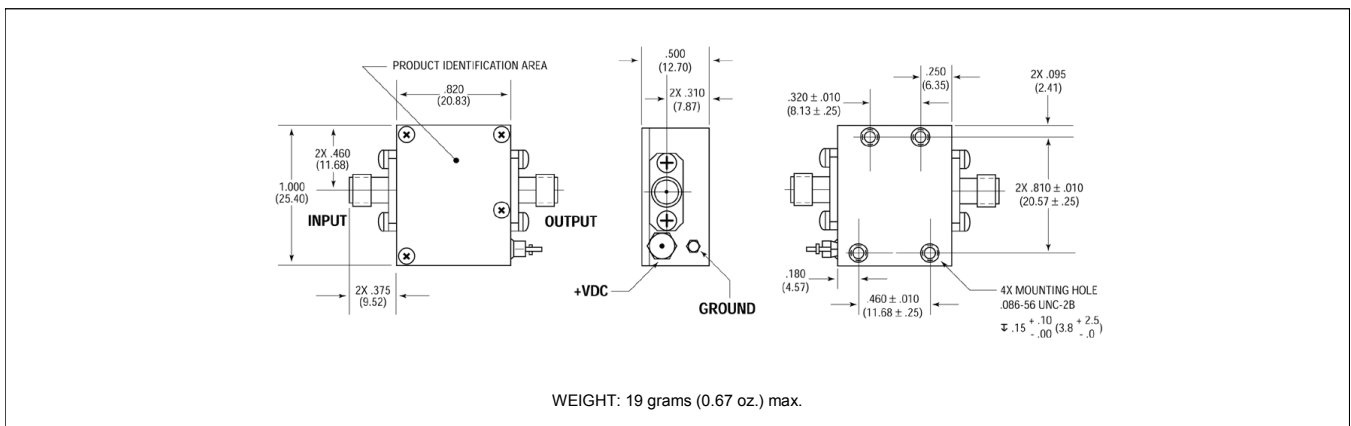
### TO-8



### Surface Mount



### SMA Connectorized



4 5. Dimensions are inches (millimeters)  $\pm 0.015$  (0.38) unless otherwise specified.

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