

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

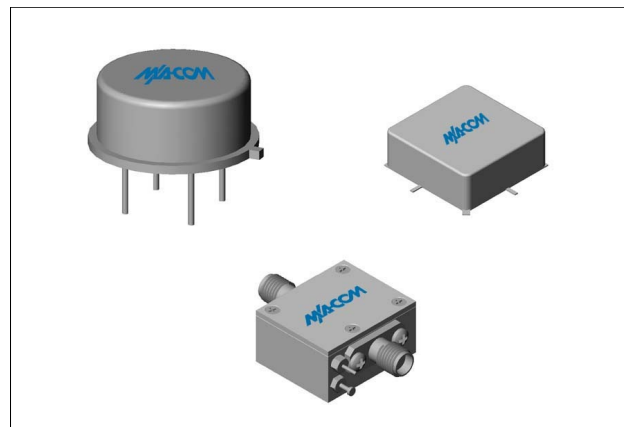
Description

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 ¹	SMA Connectorized

1. The connectorized version is not RoHS compliant.

Electrical Specifications²: $Z_0 = 50 \Omega$, $V_{CC} = 15 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C ²
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.

Absolute Maximum Ratings^{3,4}

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 μ sec 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: $V_{CC} = 15 V_{DC}$

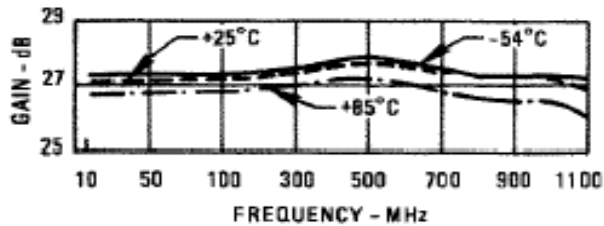
Parameter	Rating
Thermal Resistance θ_{JC}	145°C/W
Transistor Power Dissipation P_D	0.419 W
Junction Temperature Rise Above Case T_{JC}	61°C

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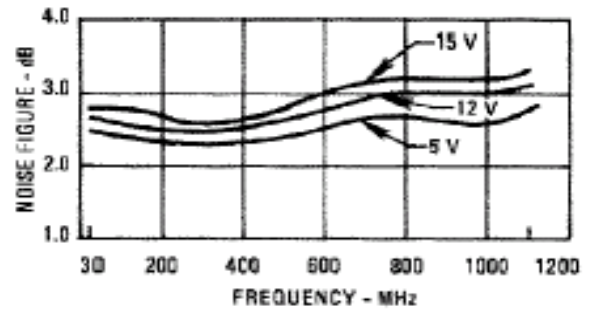
Rev. V4

Typical Performance Curves at +25°C

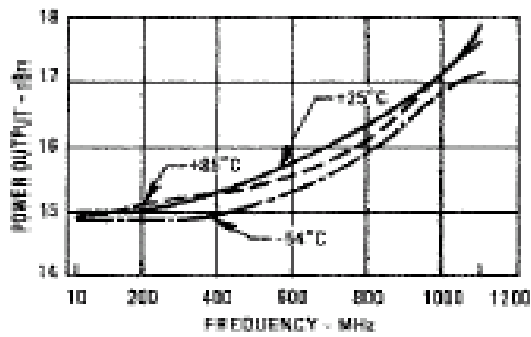
Gain



Noise Figure

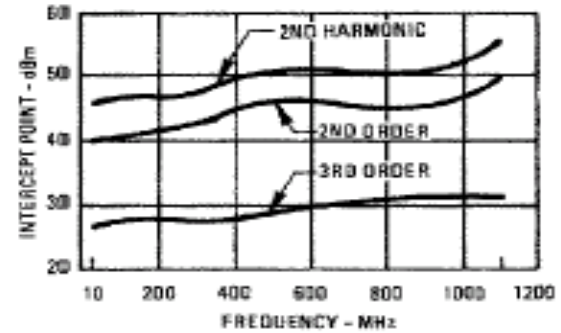


Power Output*

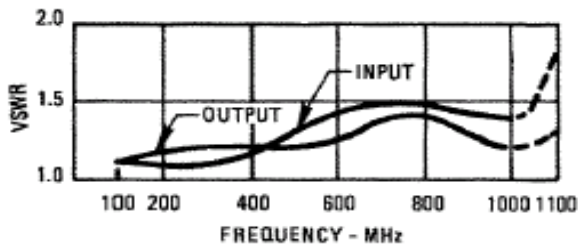


* at 1 dB Gain Compression

Intercept Point



VSWR

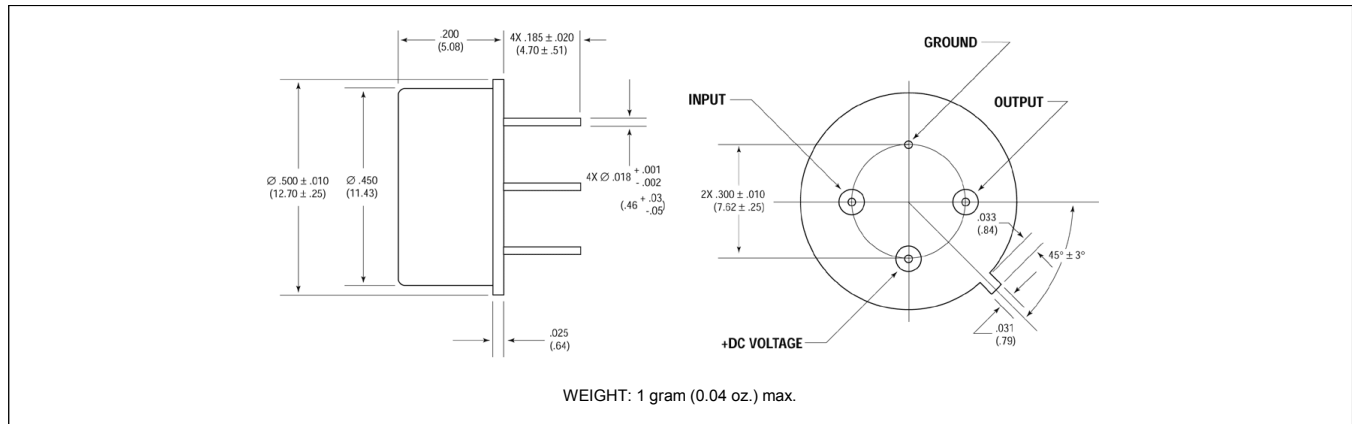


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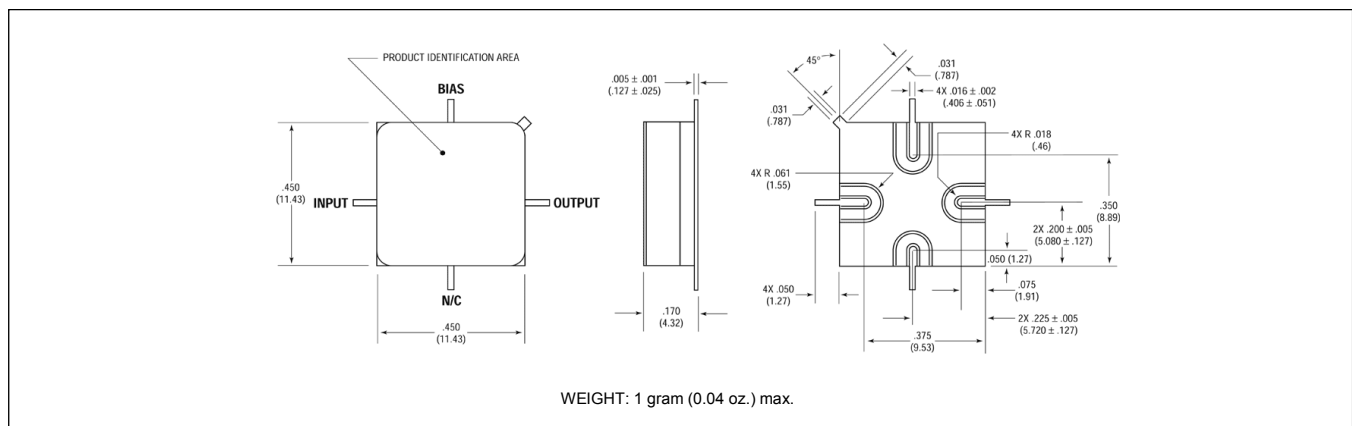
Rev. V4

Outline Drawings⁵

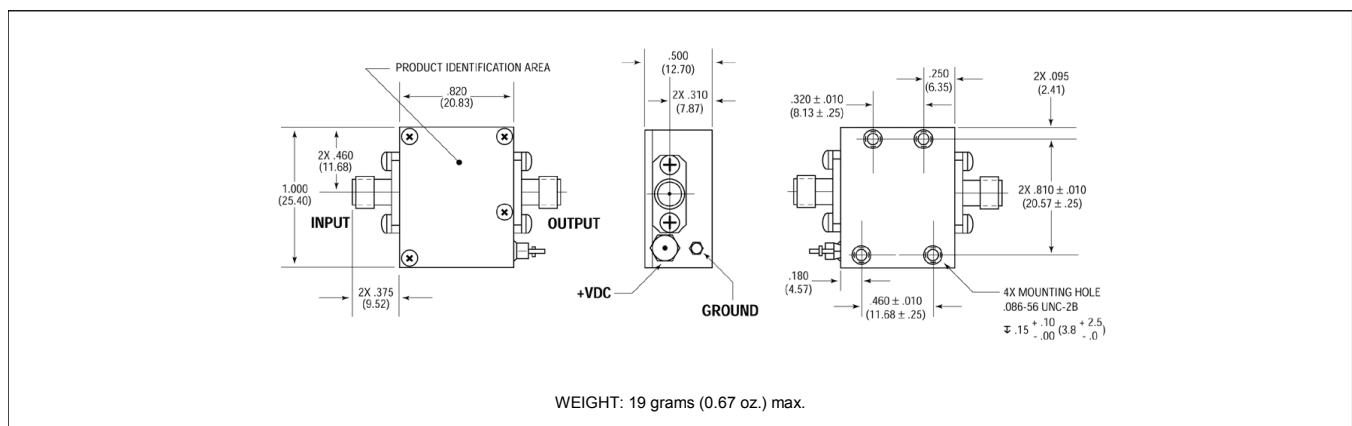
TO-8



Surface Mount



SMA Connectorized



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

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