

## Cascadable Amplifier 10 to 300 MHz

Rev. V3

### Features

- LOW NOISE FIGURE: 3.0 dB (TYP.)
- HIGH FREQUENCY: 15 mA @ +5 Vdc (TYP.)
- HIGH OUTPUT POWER AT 5 VOLTS: +11 dBm (TYP.)
- LOW VSWR: <1.5:1 (TYP.)

### Description

The A87-2 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Use of an impedance transformer offers the benefit of high dynamic range and high efficiency.

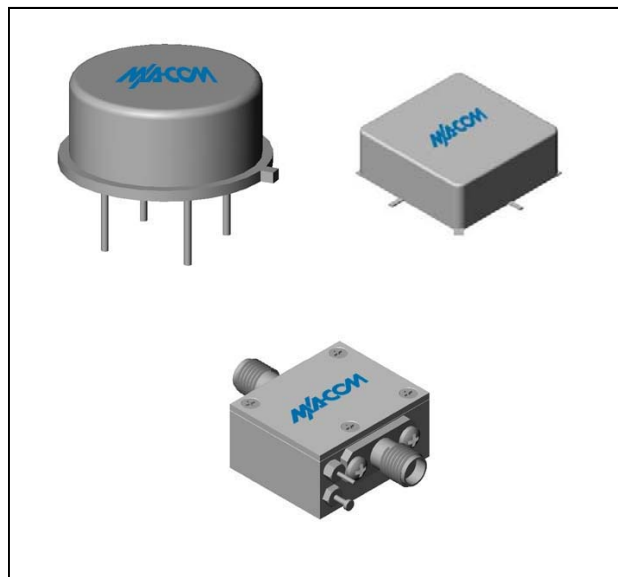
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available

### Ordering Information

Part Number	Package
A87-2	TO-8
SMA87-2	Surface Mount
CA87-2 **	SMA Connectorized

\*\* The connectorized version is not RoHs compliant.

### Product Image



### 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	MHz	5-350	10-300	10-300
Small Signal Gain (min)	dB	16.0	15.0	14.5
Gain Flatness (max)	dB	±0.2	±0.5	±0.8
Reverse Isolation	dB	20		
Noise Figure (max)	dB	2.9	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	11.0	9.0	8.5
IP3	dBm	+24		
IP2	dBm	+35		
Second Order Harmonic IP	dBm	+41		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 5 Volts (max)	mA	15	17	18

### Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+10 V
Continuous Input Power	+13 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

### Thermal Data: $V_{CC} = +5 V_{DC}$

Parameter	Rating
Thermal Resistance $\theta_{jc}$	185°C/W
Transistor Power Dissipation $P_d$	0.034 W
Junction Temperature Rise Above Case $T_{jc}$	6°C

\* Over temperature performance limits for part number CA87-2, guaranteed from 0°C to +50°C only.

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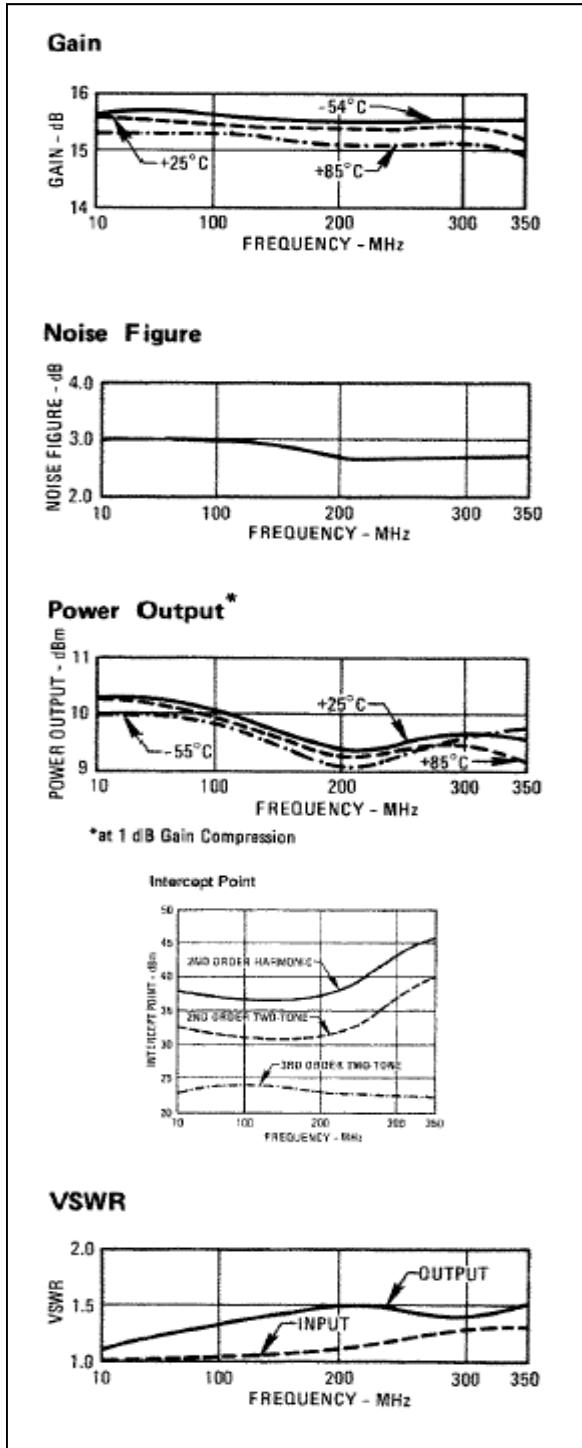
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# A87-2 / SMA87-2

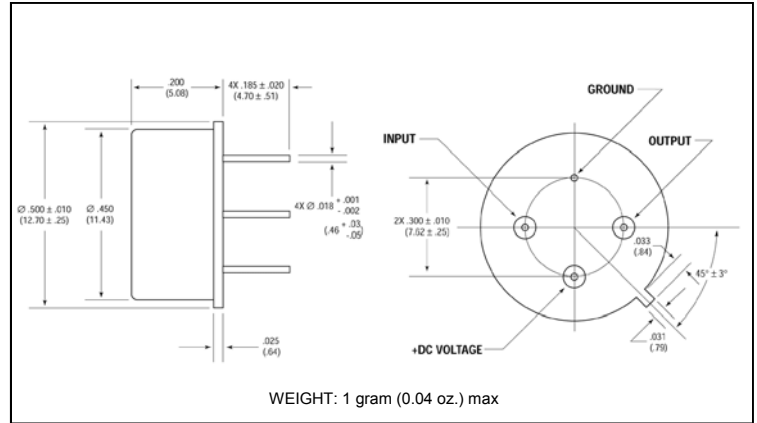
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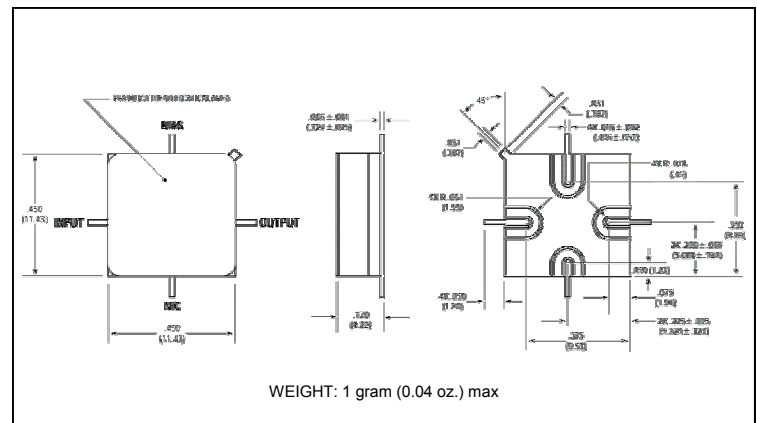
## Typical Performance Curves at +25°C



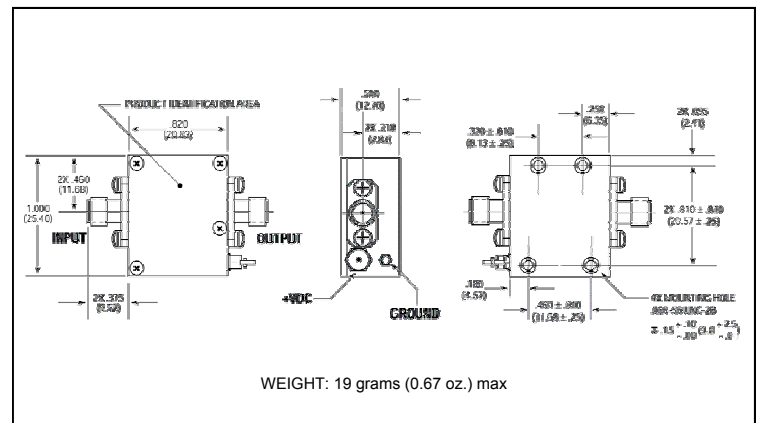
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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

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