

# A82-1 / SMA82-1

## Cascadable Amplifier 20 to 250 MHz

Rev. V3

### Features

- HIGH REVERSE ISOLATION: >34 dB (TYP.)
- HIGH OUTPUT POWER: +15 dBm (TYP.)
- HIGH GAIN: 19.0 dB (TYP.)
- LOW OUTPUT VSWR: 1.1:1 (TYP.)

### Description

The A82-1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

The 2 stage silicon bipolar feedback amplifier design displays impressive performance over a broadband frequency range.

An isolation transformer is used in the feedback loop, with the benefit of high reverse isolation.

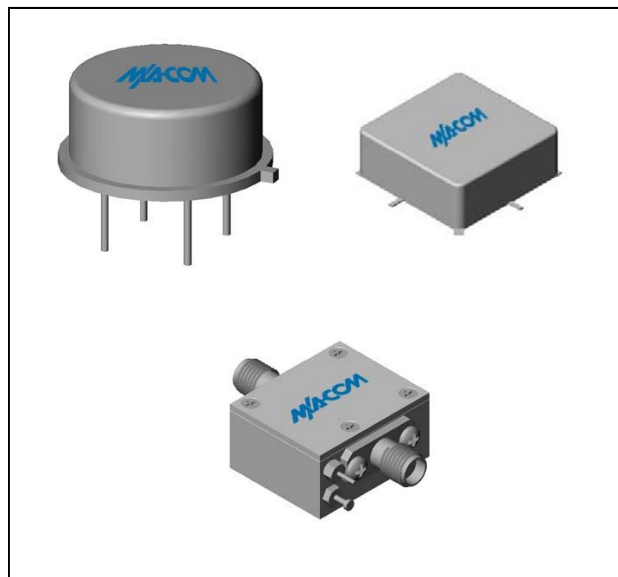
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

Part Number	Package
A82-1	TO-8
SMA82-1	Surface Mount
CA82-1**	SMA Connectorized

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

### Product Image



### Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +15 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	10-300	20-250	20-250
Small Signal Gain (min)	dB	19.0	17.5	17.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	34		
Noise Figure (max)	dB	2.8	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	15.0	14.0	13.0
IP3	dBm	+26		
IP2	dBm	+31		
Second Order Harmonic IP	dBm	+36		
VSWR Input / Output (max)		1.4:1 / 1.1:1	1.9:1 / 1.4:1	2.0:1 / 1.5:1
DC Current @ 15 Volts (max)	mA	50	52	54

### Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+10 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: $V_{CC} = +15 V_{DC}$

Parameter	Rating
Thermal Resistance $\theta_{jc}$	144°C/W
Transistor Power Dissipation $P_d$	0.273 W
Junction Temperature Rise Above Case $T_{jc}$	39°C

\* Over temperature performance limits for part number CA82-1, guaranteed from 0°C to +50°C only.

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 Visit [www.macomtech.com](http://www.macomtech.com) for additional data sheets and product information.

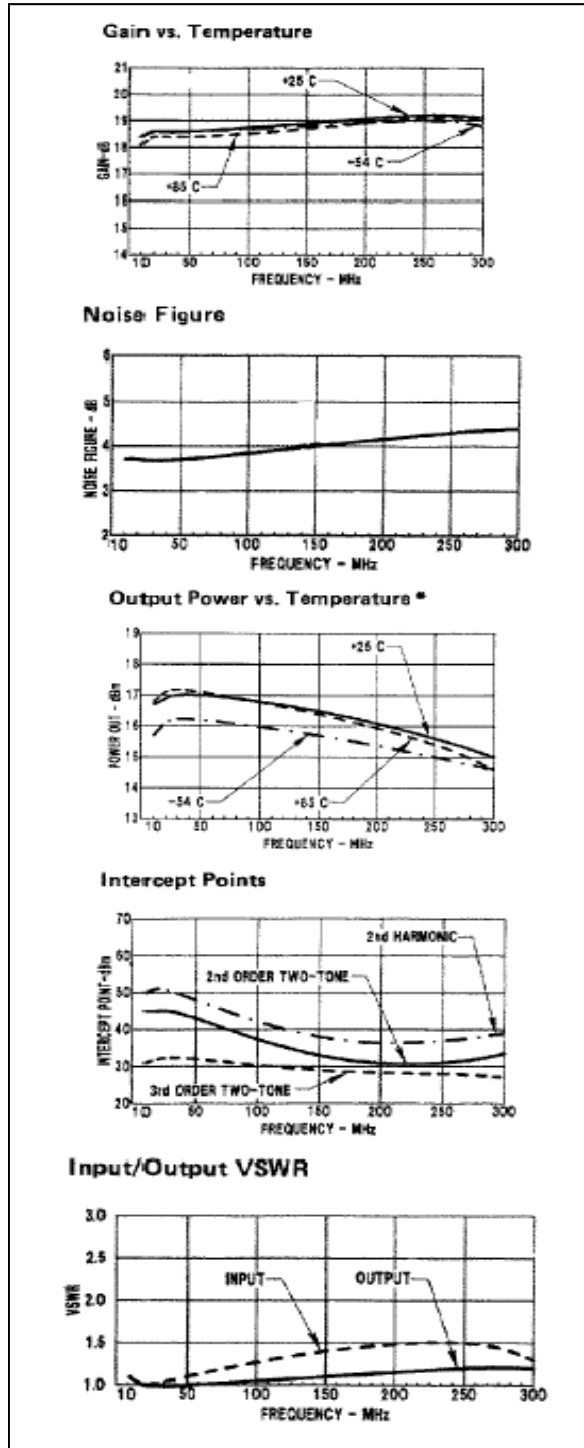
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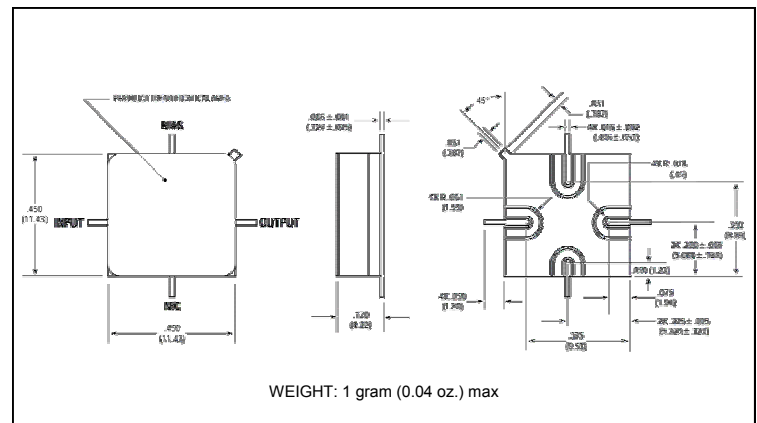
## Typical Performance Curves at +25°C



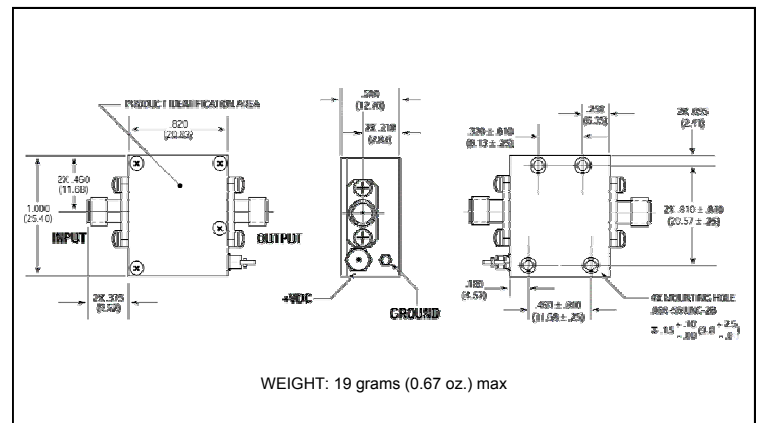
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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

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