

**Cascadable Amplifier  
5 to 500 MHz**

**A1/ SMA1**

V3

**Features**

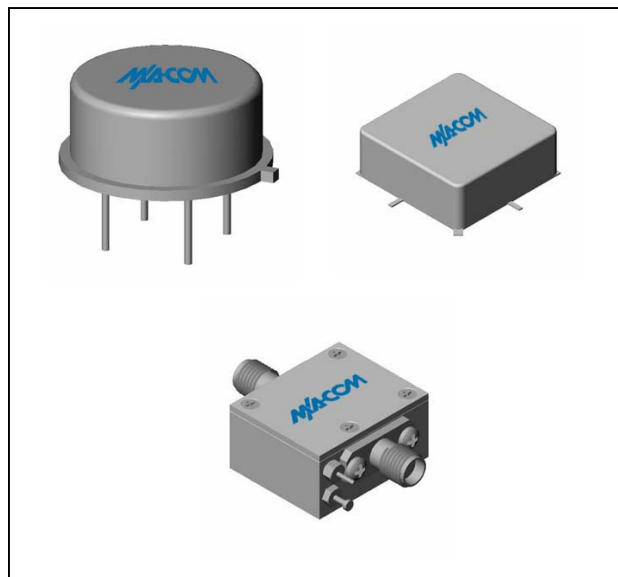
- LOW NOISE: 2.4 dB (TYP.)
- LOW VSWR: 1.3:1 (TYP.)
- HIGH GAIN: 16 dB (TYP.)

**Description**

The A1 RF amplifier is a discrete hybrid design, which uses thin film RF manufacturing processes for accurate performance and high reliability.

This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. 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
A1	TO-8
SMA1	Surface Mount
CA1	SMA Connectorized

**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	1-600	5-500	5-500
Small Signal Gain (min)	dB	16.0	15.0	14.5
Gain Flatness (max)	dB	±0.2	±0.7	±1.0
Reverse Isolation	dB	19		
Noise Figure (max)	dB	2.4	3.0	3.5
Power Output @ 1 dB comp. (min)	dBm	-1.0	-2.0	-3.0
IP3	dBm	+11		
IP2	dBm	+10		
Second Order Harmonic IP	dBm	+15		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	9	11	12

**Absolute Maximum Ratings**

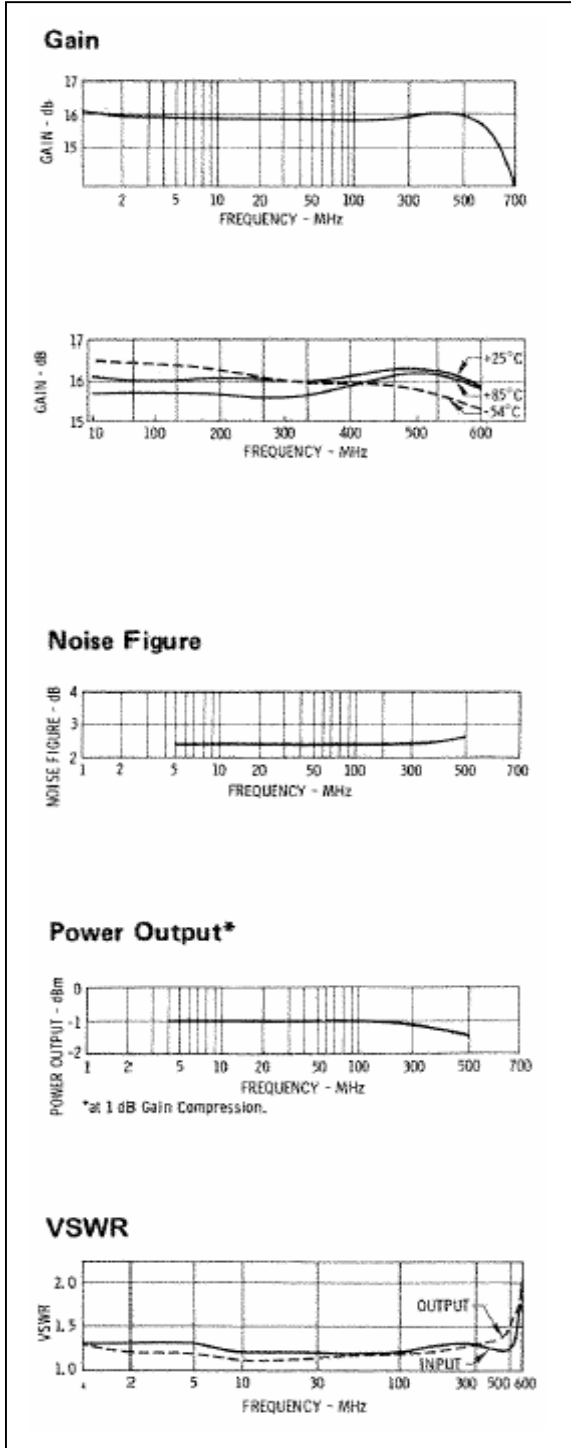
Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+18 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	+125°C

**Thermal Data:  $V_{CC} = +15 V_{DC}$**

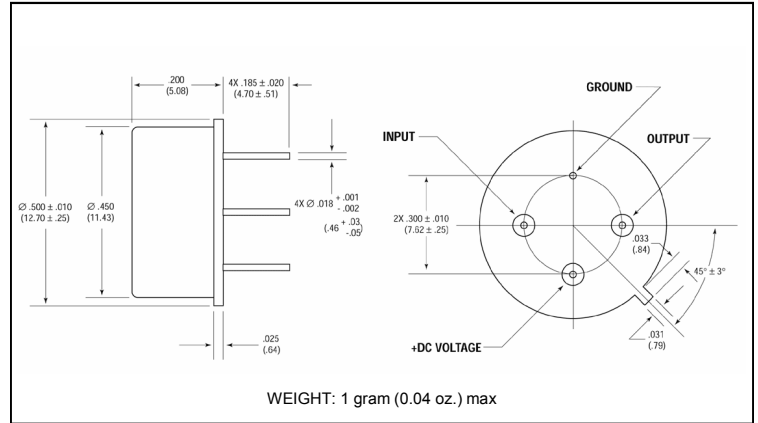
Parameter	Rating
Thermal Resistance $\theta_{jc}$	130°C/W
Transistor Power Dissipation $P_d$	0.057 W
Junction Temperature Rise Above Case $T_{jc}$	7°C

\* Over temperature performance limits for part number CA1, guaranteed from 0°C to +50°C only.

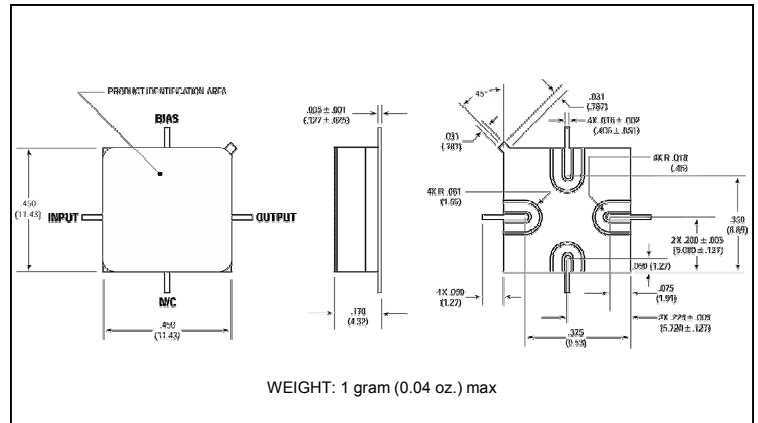
**Typical Performance Curves at +25°C**



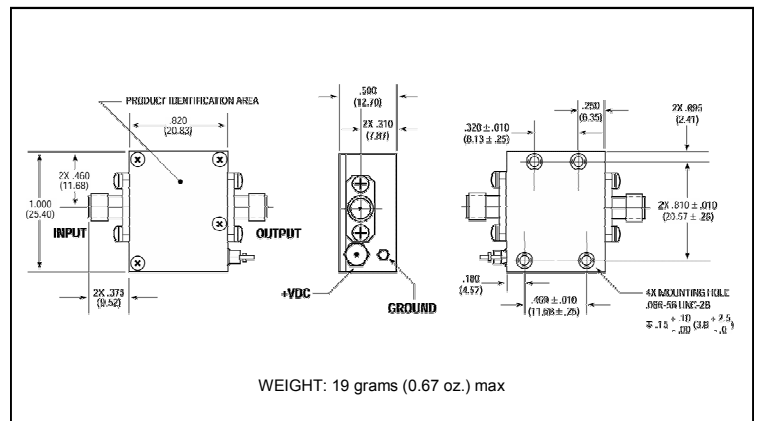
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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