

**Cascadable Amplifier  
10 to 1000 MHz**

**A12 / SMA12**

V3

**Features**

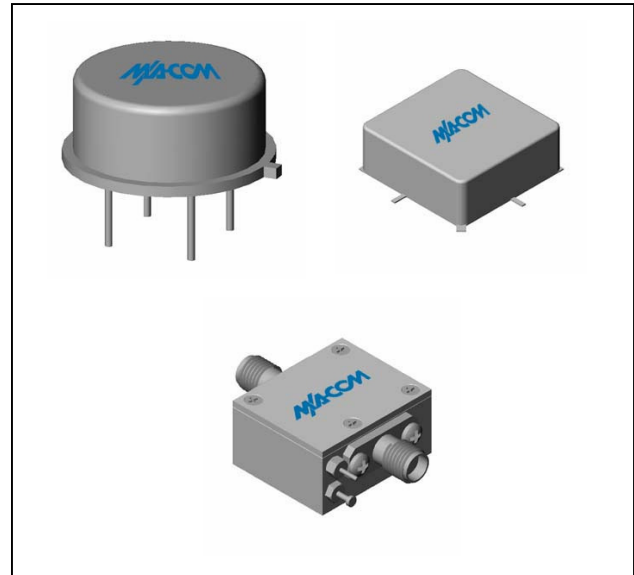
- LOW NOISE: 2.8 dB (TYP.)
- HIGH GAIN: 16.0 dB (TYP.)
- MEDIUM OUTPUT POWER: +8 dBm (TYP.)
- LOW VSWR:<1.6:1 (TYP.)

**Description**

The A12 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. 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
A12	TO-8
SMA12	Surface Mount
CA12	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	5-1000	10-1000	10-1000
Small Signal Gain (min)	dB	16.0	15.0	14.5
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	20		
Noise Figure (max)	dB	2.8	3.5	3.9
Power Output @ 1 dB comp. (min)	dBm	8.0	7.0	6.5
IP3	dBm	+22		
IP2	dBm	+25		
Second Order Harmonic IP	dBm	+32		
VSWR Input / Output (max)		1.6:1 / 1.6:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	22	25	27

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+17 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 $\theta_{jc}$	170°C/W
Transistor Power Dissipation $P_d$	0.189 W
Junction Temperature Rise Above Case $T_{jc}$	+32°C

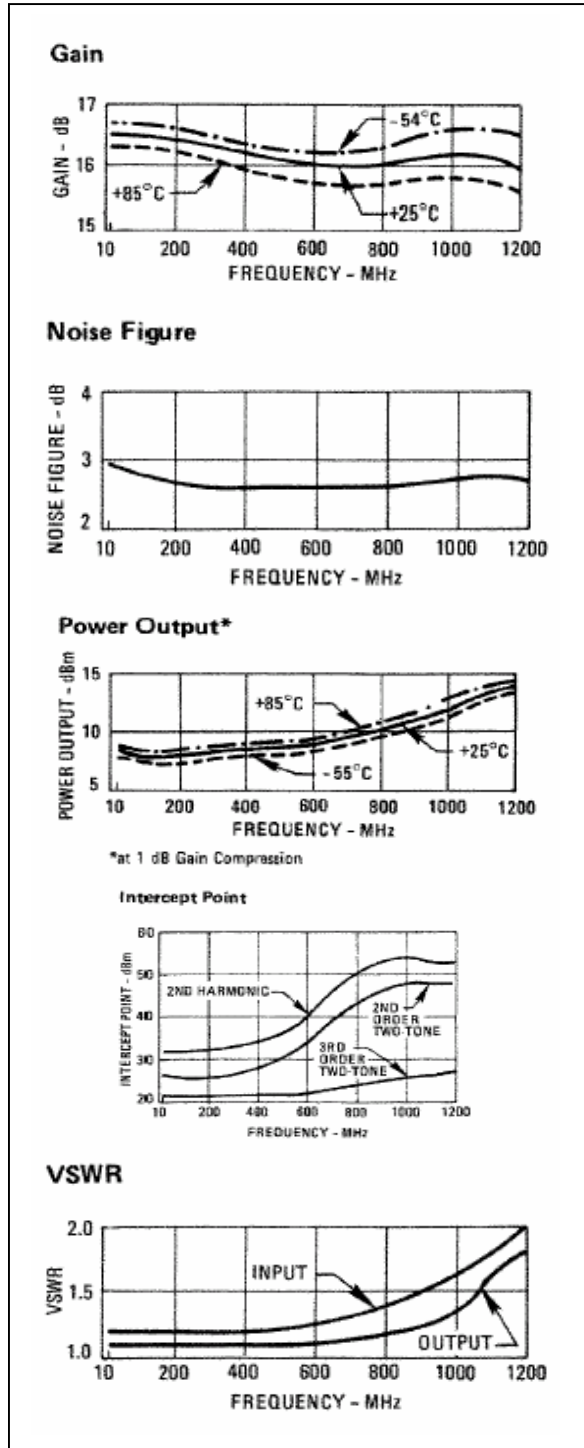
\* Over temperature performance limits for part number CA12, guaranteed from 0°C to +50°C only.

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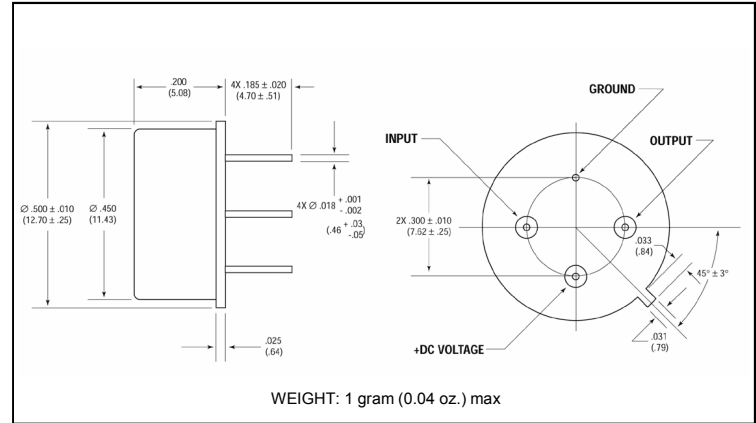
**A12 / SMA12**

V3

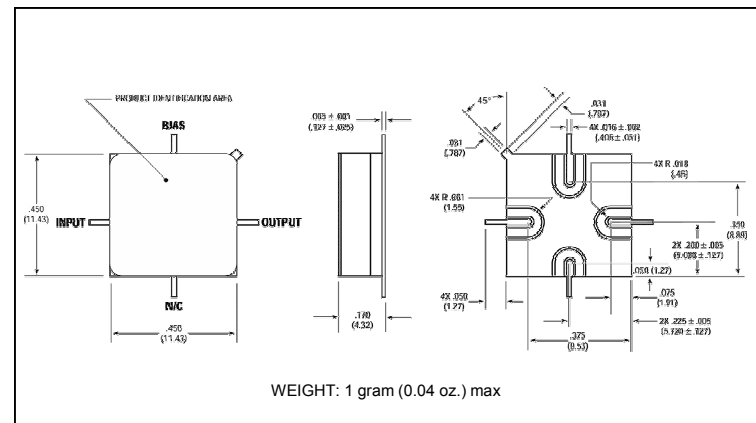
**Typical Performance Curves at +25°C**



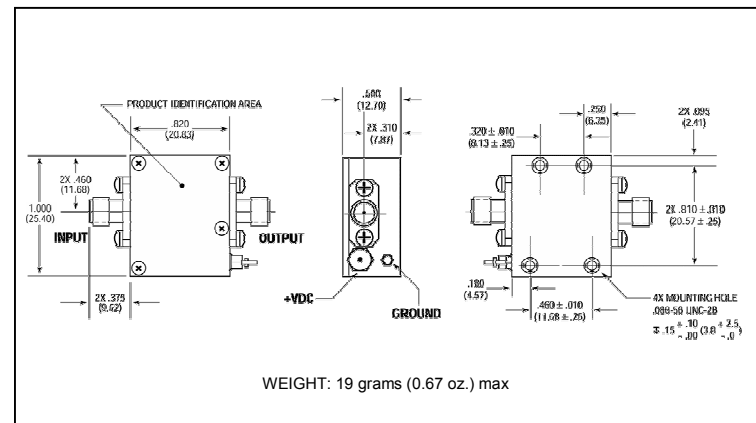
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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