

Cascadable Amplifier 10 to 1000 MHz

Rev. 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.

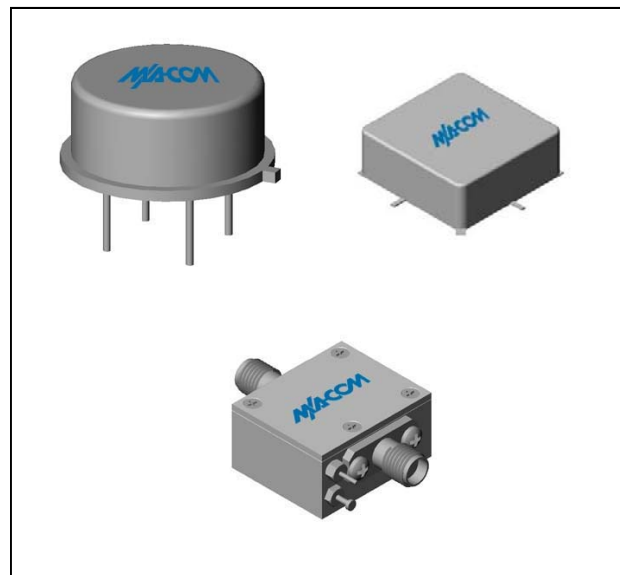
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A12	TO-8
SMA12	Surface Mount
CA12	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	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 θ_{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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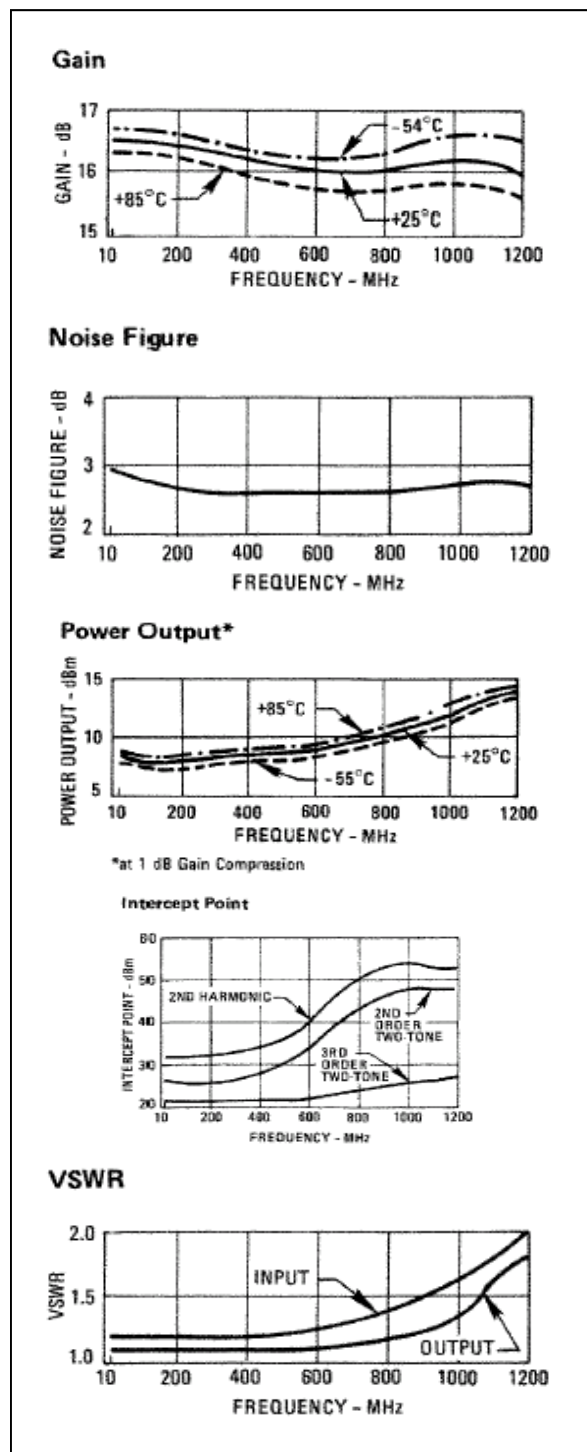
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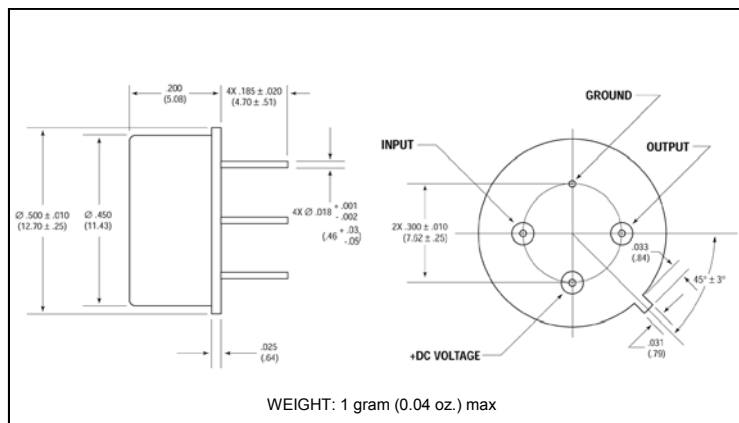
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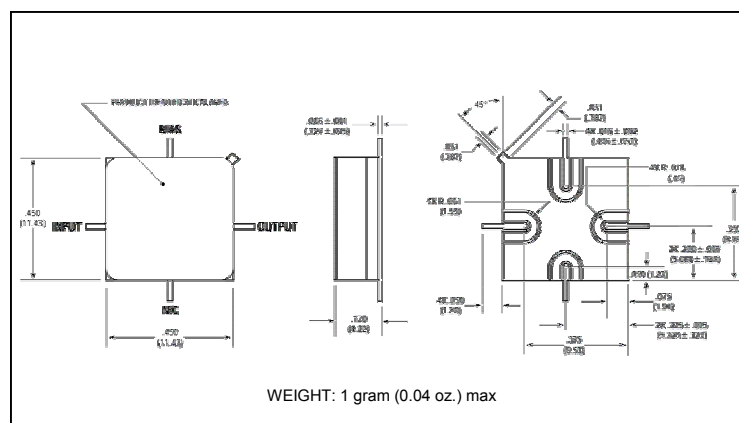
Typical Performance Curves at +25°C



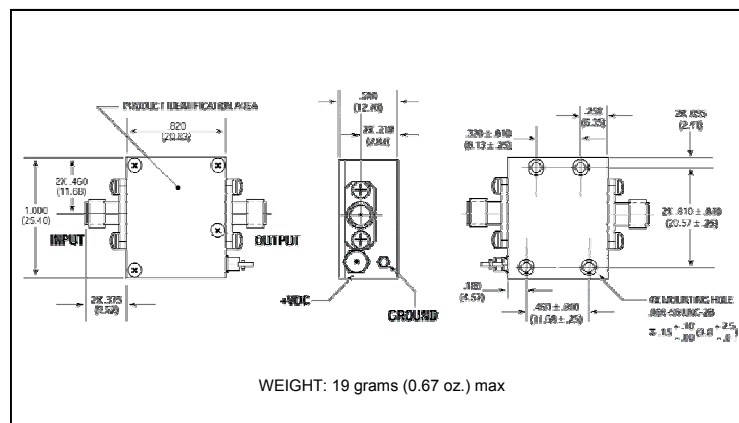
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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