

Cascadable Amplifier 10 to 250 MHz

Rev. V4

Features

- LOW NOISE: 2.2 dB (TYP.)
- HIGH OUTPUT POWER: +19 dBm (TYP.)
- HIGH THIRD ORDER I.P.: +38 dBm (TYP.)
- LOW DC CURRENT: 25 mA (TYP.) AT +15 Vdc

Description

The A70-2 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.

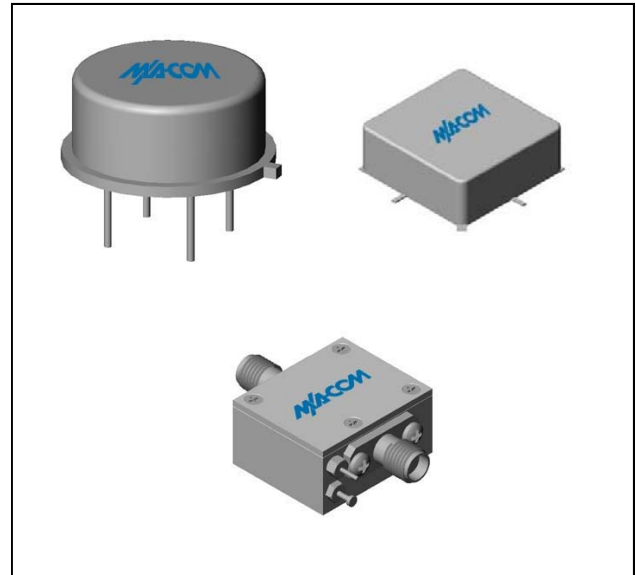
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available

Ordering Information

Part Number	Package
A70-2	TO-8
SMA70-2	Surface Mount
CA70-2 **	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	10-250	10-250
Small Signal Gain (min)	dB	8.0	7.0	6.5
Gain Flatness (max)	dB	±0.2	±0.5	±0.7
Reverse Isolation	dB	11		
Noise Figure (max)	dB	2.2	2.7	3.2
Power Output @ 1 dB comp. (min)	dBm	19.0	18.0	17.5
IP3	dBm	+38		
IP2	dBm	+49		
Second Order Harmonic IP	dBm	+54		
VSWR Input / Output (max)		1.9:1 / 1.9:1	2.1:1 / 2.1:1	2.3:1 / 2.3:1
DC Current @ 15 Volts (max)	mA	25	27	29

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.)	17 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}	130°C/W
Transistor Power Dissipation P_d	0.069 W
Junction Temperature Rise Above Case T_{jc}	9°C

* Over temperature performance limits for part number CA70-2, guaranteed from 0°C to +50°C only.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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 Visit www.macomtech.com for additional data sheets and product information.

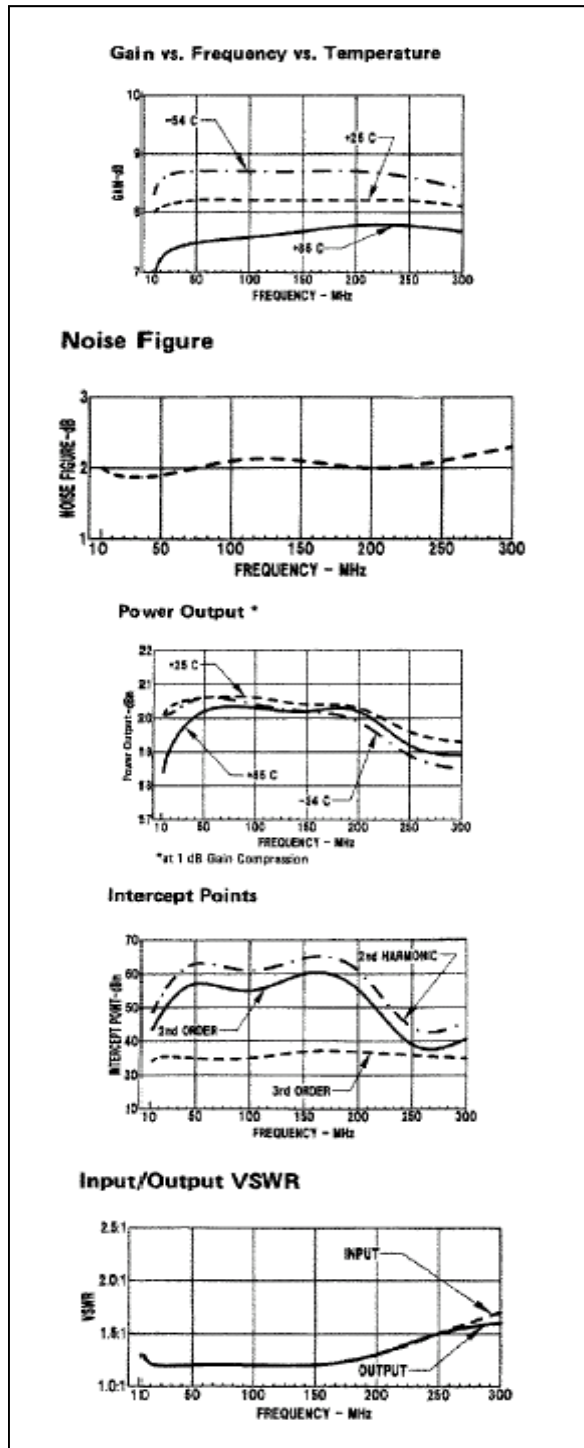
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A70-2 / SMA70-2

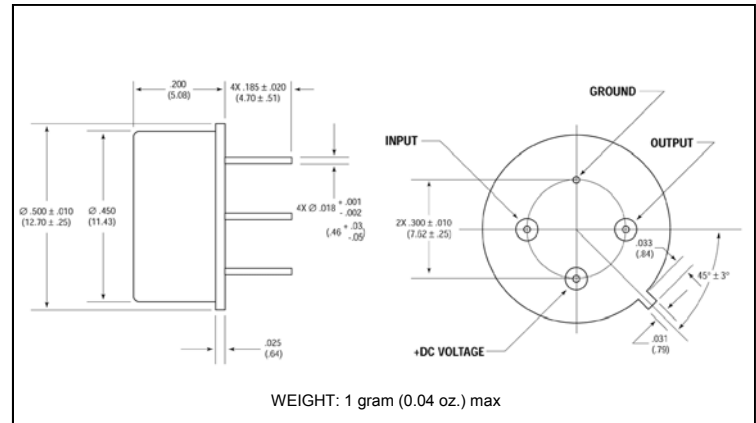
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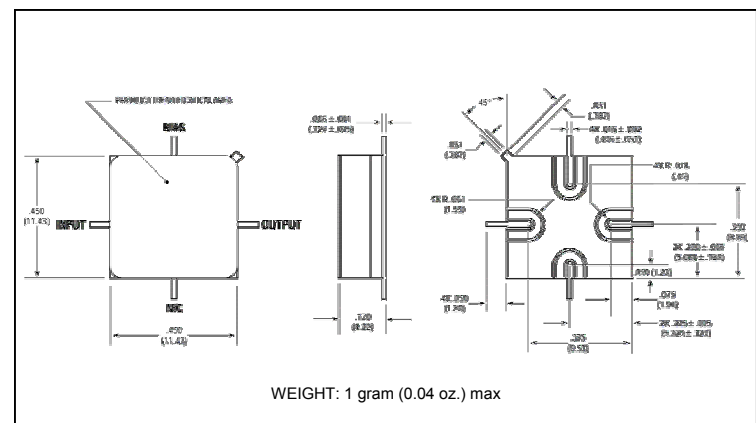
Typical Performance Curves at +25°C



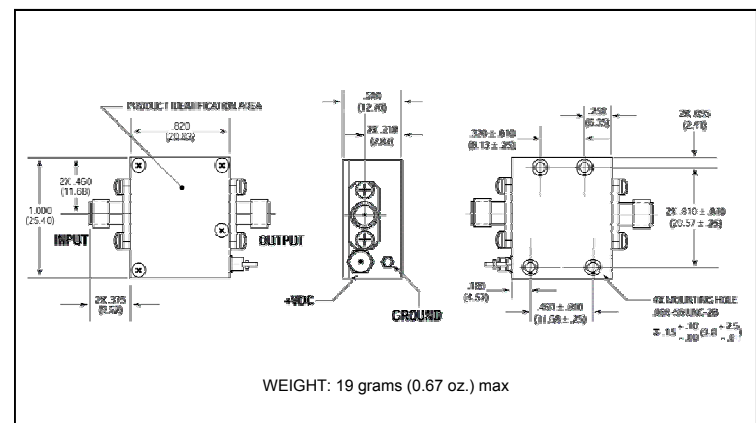
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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