tyco Electronics

RoHS Compliant

MACOM

Cascadable Amplifier 10 to 250 MHz

A70-2/ SMA70-2

V4

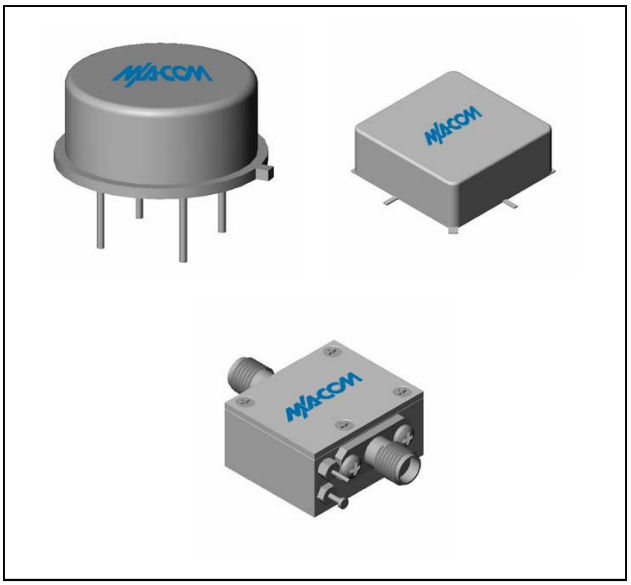
Features

- 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

Product Image



Ordering Information

Part Number	Package
A70-2	TO-8
SMA70-2	Surface Mount
CA70-2 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

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

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
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	-62ºC to +125ºC
Case Temperature	+125ºC
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)	+125ºC

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

Parameter	Rating
Thermal Resistance θ_{jc}	130ºC/W
Transistor Power Dissipation P_d	0.069 W
Junction Temperature Rise Above Case T_{jc}	9ºC

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

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

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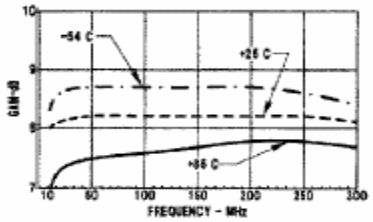
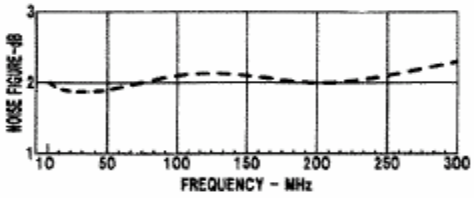
Typical Performance Curves at +25°C

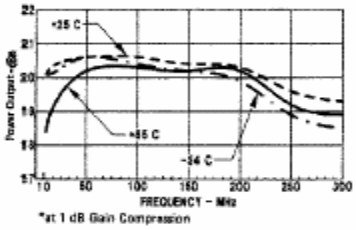
Gain vs. Frequency vs. Temperature



Noise Figure

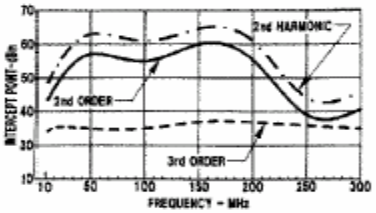


Power Output *

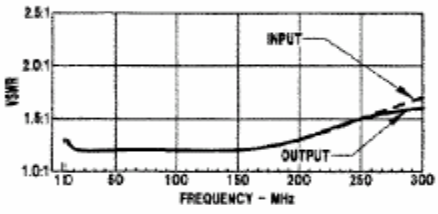


*at 1 dB Gain Compression

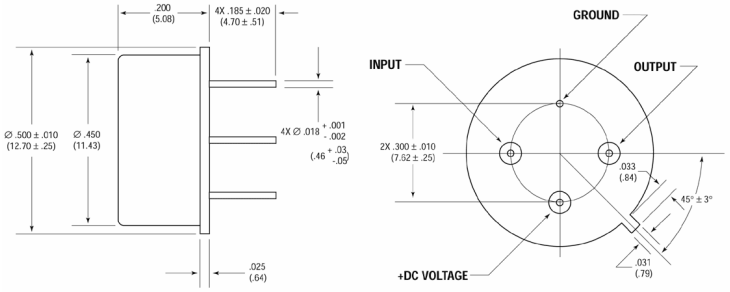
Intercept Points



Input/Output VSWR

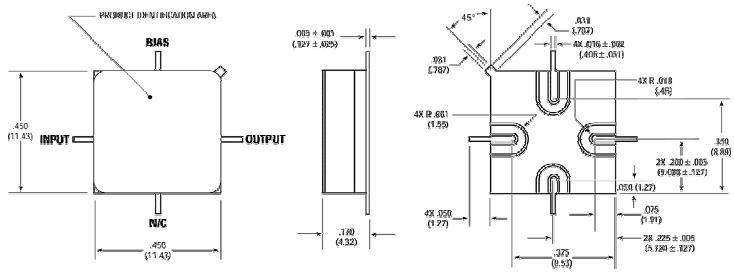


Outline Drawing: TO-8 *



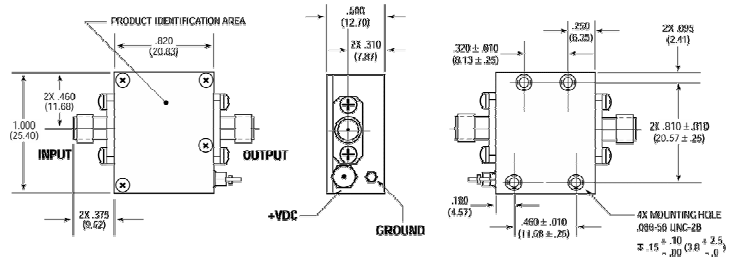
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 19 grams (0.67 oz.) max

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

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