A70 / SMA70

Cascadable Amplifier
10 to 250 MHz

Rev. V3

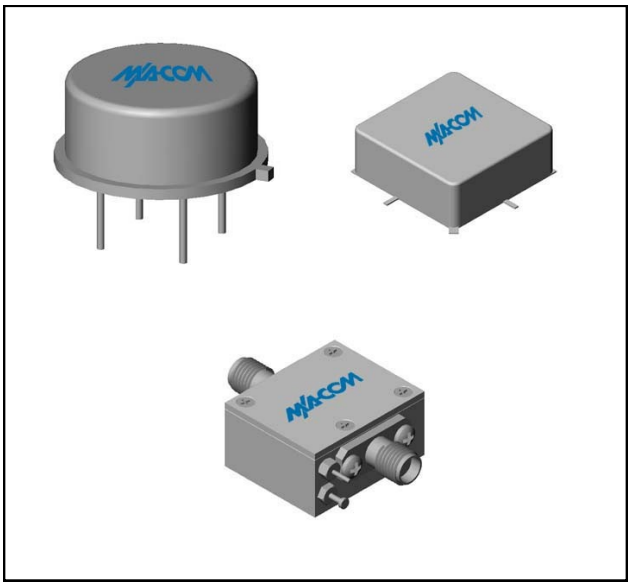
Features

- VERY LOW NOISE: 1.6 dB (TYP.)
- HIGH EFFICIENCY +8.0 dBm (TYP.) OUTPUT POWER AT 10 mA (TYP.)

Description

The A70 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	TO-8
SMA70	Surface Mount
MAAM-008726-00CA70	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	7.3	6.8
Gain Flatness (max)	dB	±0.3	±0.5	±0.7
Reverse Isolation	dB	11		
Noise Figure (max)	dB	1.6	2.3	2.8
Power Output @ 1 dB comp. (min)	dBm	8.0	7.5	7.0
IP3	dBm	+24		
IP2	dBm	+37		
Second Order Harmonic IP	dBm	+44		
VSWR Input / Output (max)		1.8:1 / 1.8:1	2.1:1 / 2.1:1	2.3:1 / 2.3:1
DC Current @ 15 Volts (max)	mA	10	12	13

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	125ºC
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)	+125ºC

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

Parameter	Rating
Thermal Resistance θ_{jc}	130ºC/W
Transistor Power Dissipation P_d	0.064 W
Junction Temperature Rise Above Case T_{jc}	8ºC

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

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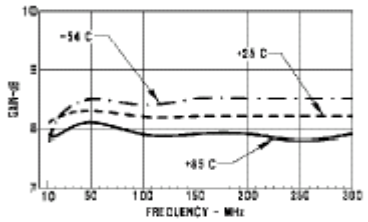
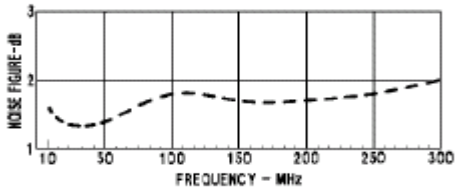
Typical Performance Curves at +25°C

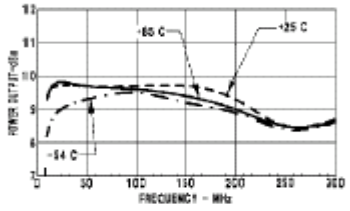
Gain vs. Frequency



Noise Figure

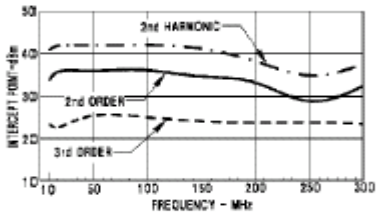


Power Output *

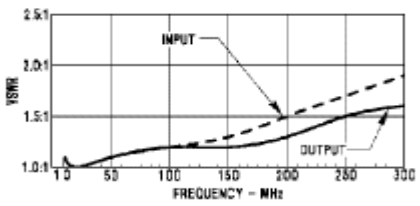


*at 1 dB Gain Compression

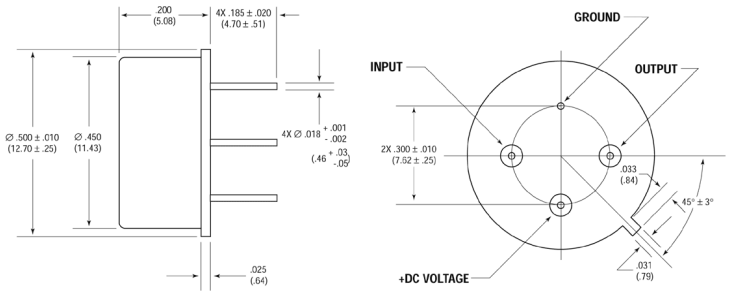
Intercept Points



Input/Output VSWR

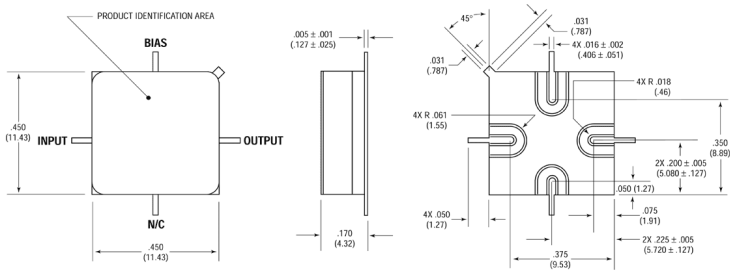


Outline Drawing: TO-8 *



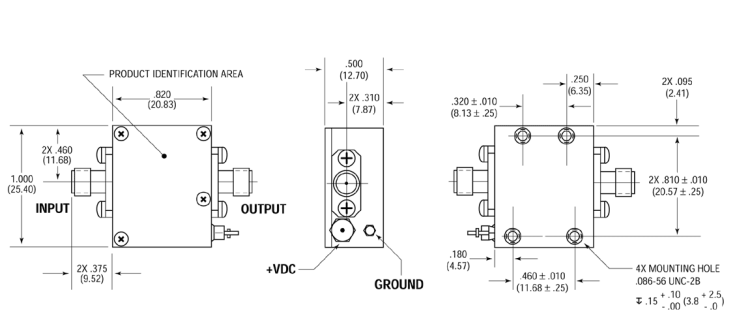
WEIGHT: 1 gram (0.04 oz.) max

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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