

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.

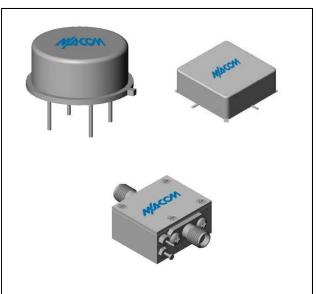
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Use of an impedance transformer offers the benefit of high dynamic range and high efficiency.

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

Ordering Information

Part Number	Package	
A70	TO-8	
SMA70	Surface Mount	
MAAM-008726-00CA70	SMA Connectorized **	

Product Image



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

Parameter	Units	Typical	Guaranteed	
Parameter		25°C	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	-62°C to +125°C	
Case Temperature	125°C	
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)	+125°C	

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

Parameter	Rating
Thermal Resistance θ_{jc}	130°C/W
Transistor Power Dissipation P _d	0.064 W
Junction Temperature Rise Above Case T _{jc}	8°C

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

Commitment to produce in volume is not guaranteed.

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^{**} The connectorized version is not RoHs compliant.

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



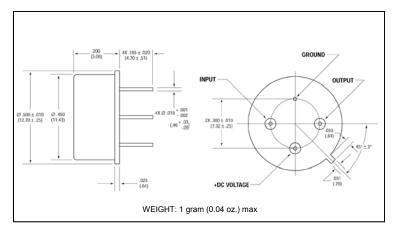
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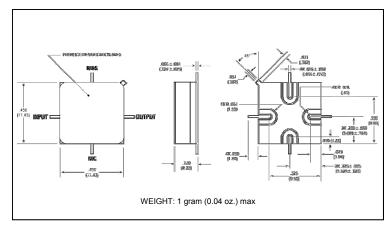
Typical Performance Curves at +25°C

Gain vs. Frequency 150 FREQUENCY - MHz Noise Figure FREQUENCY -Power Output * +25 C *at 1 dit Gain Compression Intercept Points 31d ORDE FREQUENCY - MHz Input/Output VSWR DUTPU 150 200 280 FREQUENCY - MHz

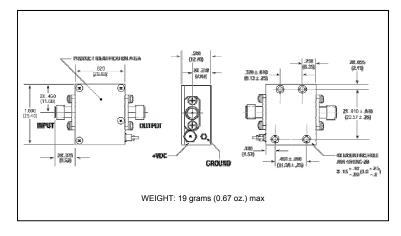
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized *



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

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