

Cascadable Amplifier 5 to 500 MHz

Rev. V3

Features

- HIGH GAIN - TWO STAGES: 28 dB (TYP.)
- HIGH OUTPUT LEVEL: +15 dBm (TYP.)
- HIGH THIRD ORDER IP: +28 dBm (TYP.)
- WIDE POWER SUPPLY RANGE: +8 TO +15 VOLTS

Description

The A76 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

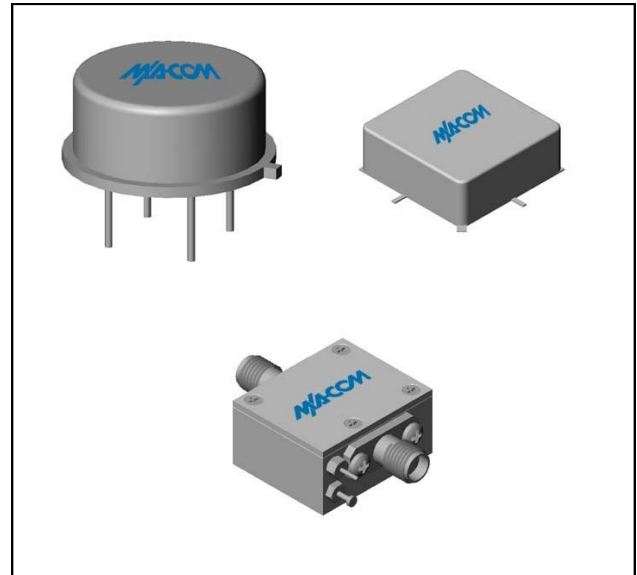
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A76	TO-8
SMA76	Surface Mount
CA76**	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	3-600	5-500	5-500
Small Signal Gain (min)	dB	28.0	27.0	26.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	37		
Noise Figure (max)	dB	3.0	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	14.7	14.0	13.5
IP3	dBm	+28		
IP2	dBm	+42		
Second Order Harmonic IP	dBm	+48		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	60	63	65

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+6 dBm
Short Term Input power (1 minute max.)	40 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	125°C

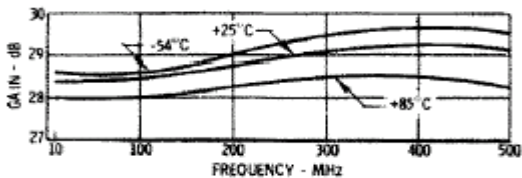
Thermal Data: $V_{CC} = +15 V_{DC}$

Parameter	Rating
Thermal Resistance θ_{jc}	130°C/W
Transistor Power Dissipation P_d	0.411 W
Junction Temperature Rise Above Case T_{jc}	54°C

1 * Over temperature performance limits for part number CA76, guaranteed from 0°C to +50°C only.

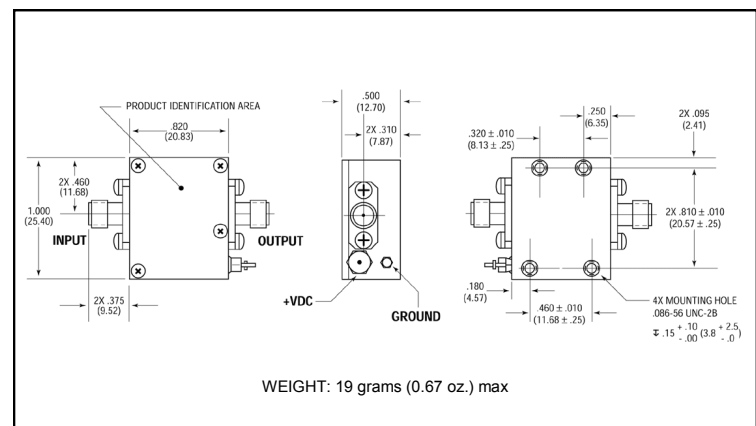
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Outline Drawing: TO-8 *



Frequency (MHz)	Noise Figure (dB)
10	5.0
30	4.8
100	4.6
200	4.6
300	4.7
500	4.9

The graph shows VSWR on the y-axis (1.0 to 2.0) versus Frequency in MHz on the x-axis (2 to 600). The 'INPUT' curve starts at approximately 1.9 at 2 MHz, drops to 1.2 at 5 MHz, and then rises to about 1.7 at 600 MHz. The 'OUTPUT' curve starts at approximately 1.1 at 2 MHz, rises to 1.3 at 5 MHz, and then rises to about 1.5 at 600 MHz.



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