



Cascadable Amplifier 5 to 500 MHz

A1/SMA1

V3

Features

LOW NOISE: 2.4 dB (TYP.)
LOW VSWR: 1.3:1 (TYP.)
HIGH GAIN: 16 dB (TYP.)

Description

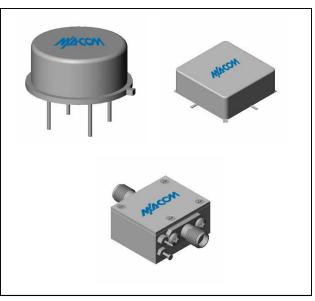
The A1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package		
A1	TO-8		
SMA1	Surface Mount		
CA1	SMA Connectorized		
CA1	SMA Connectorized		

Product Image



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

Parameter	Units	Typical	Guaranteed	
raiailleter	Units	25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	1-600	5-500	5-500
Small Signal Gain (min)	dB	16.0	15.0	14.5
Gain Flatness (max)	dB	±0.2	±0.7	±1.0
Reverse Isolation	dB	19		
Noise Figure (max)	dB	2.4	3.0	3.5
Power Output @ 1 dB comp. (min)	dBm	-1.0	-2.0	-3.0
IP3	dBm	+11		
IP2	dBm	+10		
Second Order Harmonic IP	dBm	+15		
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	9	11	12

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	0.057 W	
Junction Temperature Rise Above Case T _{jc}	7°C	

^{*} Over temperature performance limits for part number CA1, guaranteed from 0°C to +50°C only.

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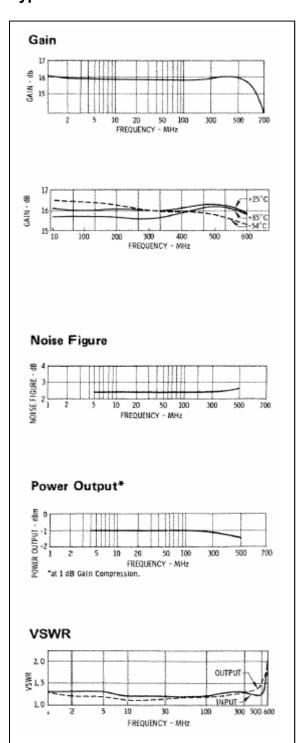


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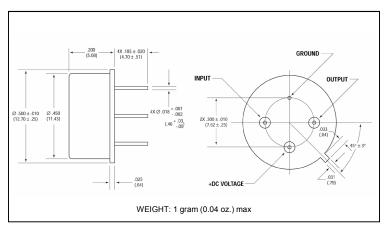
A1/SMA1

V3

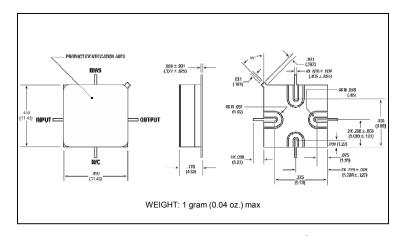
Typical Performance Curves at +25°C



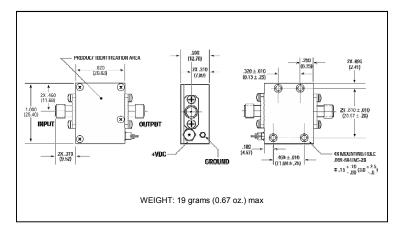
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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