

Cascadable Amplifier 10 to 400 MHz

A51/ SMA51

V2

Features

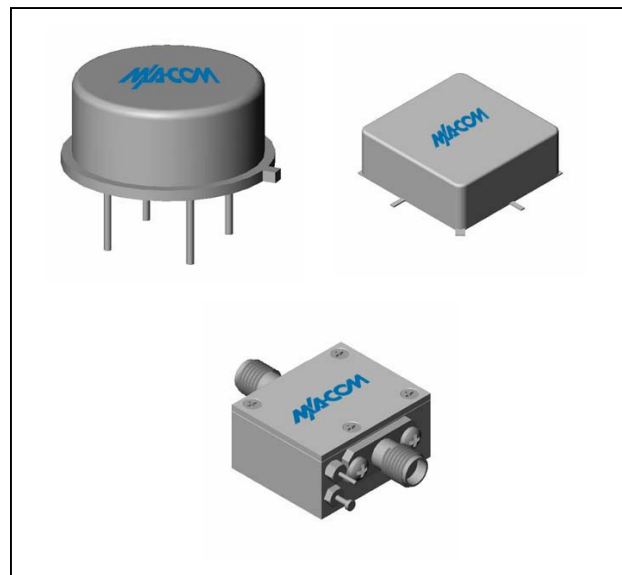
- AVAILABLE IN SURFACE MOUNT
- LOW NOISE: 2.7 dB (TYP.)
- LOW VSWR <1.3:1 (TYP.)
- FLAT BANDWIDTH ± 0.2 dB (TYP.)

Description

The A51 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.

Product Image



Ordering Information

Part Number	Package
A51	TO-8
SMA51	Surface Mount
CA51	SMA Connectorized

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	5-500	10-400	10-400
Small Signal Gain (min)	dB	15.0	14.0	13.0
Gain Flatness (max)	dB	± 0.2	± 0.7	± 1.0
Reverse Isolation	dB	20		
Noise Figure (max)	dB	2.7	3.0	3.5
Power Output @ 1 dB comp. (min)	dBm	-3.5	-3.5	-3.5
IP3	dBm	+10		
IP2	dBm	+9		
Second Order Harmonic IP	dBm	+15		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.7:1 / 1.7:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	7	9	11

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 μ sec 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}	45°C/W
Transistor Power Dissipation P_d	0.055 W
Junction Temperature Rise Above Case T_{jc}	2°C

* Over temperature performance limits for part number CA51, guaranteed from 0°C to +50°C only.

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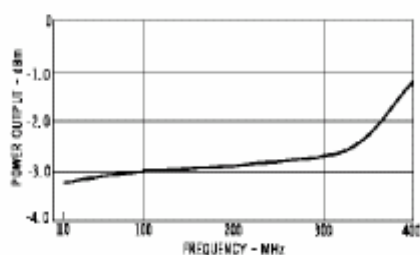
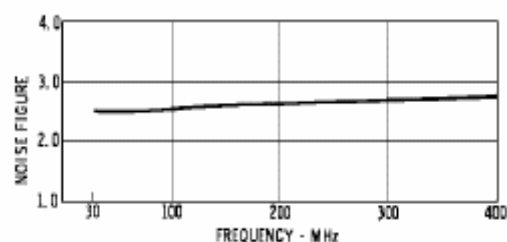
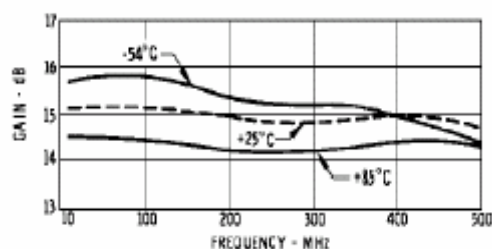
• **North America** Tel: 800.366.2266 / Fax: 978.366.2266
 • **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
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Visit www.macom.com for additional data sheets and product information.

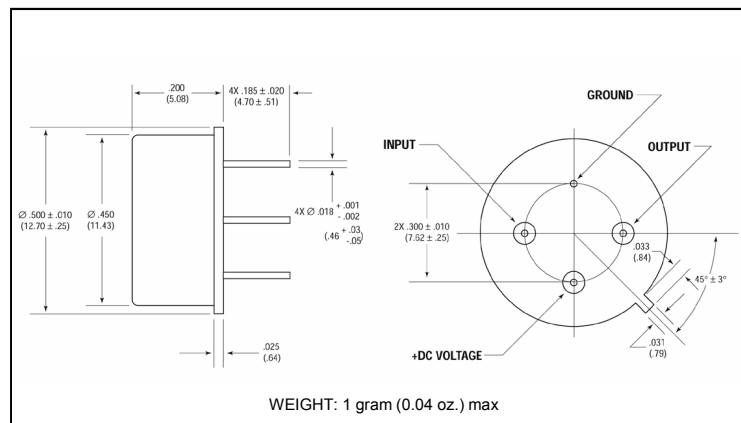
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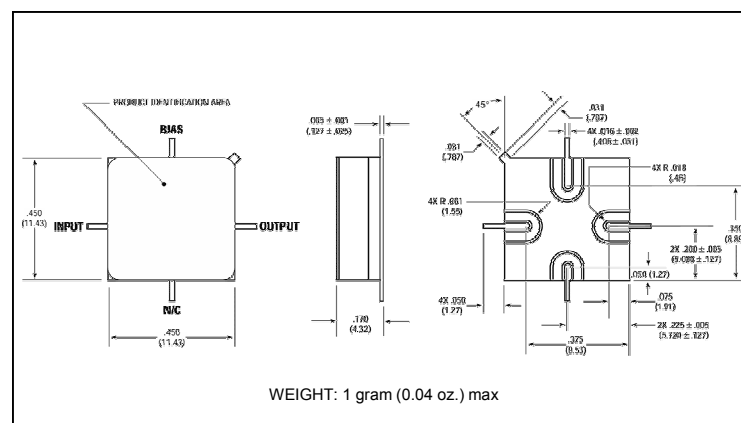
Outline Drawing: TO-8 *



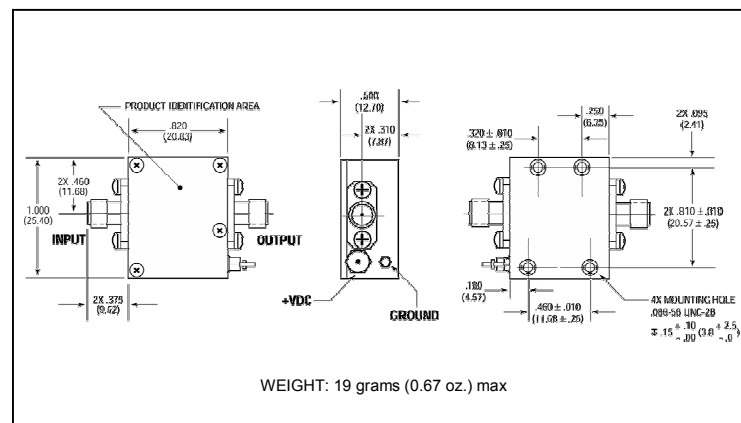
The graph plots VSWR on the y-axis (ranging from 1.0 to 2.0) against Frequency in MHz on the x-axis (logarithmic scale from 1 to 500). Two curves are shown: a solid line for 'INPUT' and a dashed line for 'OUTPUT'. Both curves start at a VSWR of about 1.5 at 1 MHz, decrease to a minimum of approximately 1.0 between 10 and 100 MHz, and then rise sharply to about 2.0 at 500 MHz. The output VSWR is consistently slightly lower than the input VSWR across the frequency range.



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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