

Cascadable Amplifier 10 to 400 MHz

A51/ SMA51

V2

Features

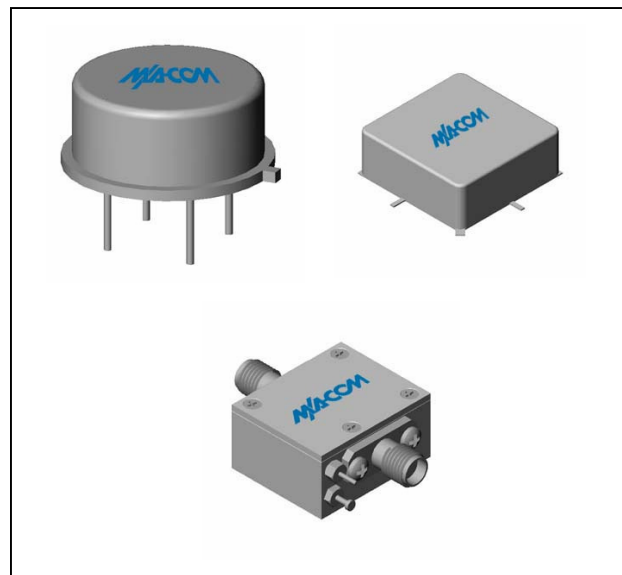
- AVAILABLE IN SURFACE MOUNT
- LOW NOISE: 2.7 dB (TYP.)
- LOW VSWR <1.3:1 (TYP.)
- FLAT BANDWIDTH ± 0.2 dB (TYP.)

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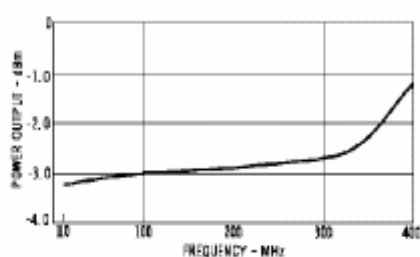
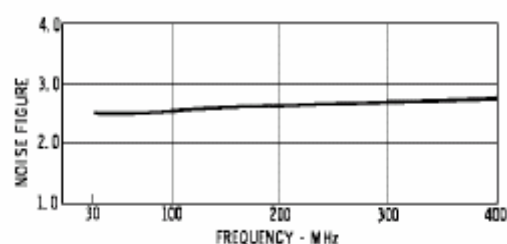
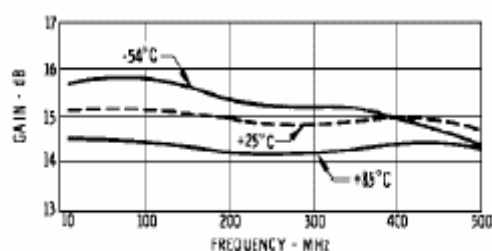
• **North America** Tel: 800.366.2266 / Fax: 978.366.2266
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Visit www.macom.com for additional data sheets and product information.

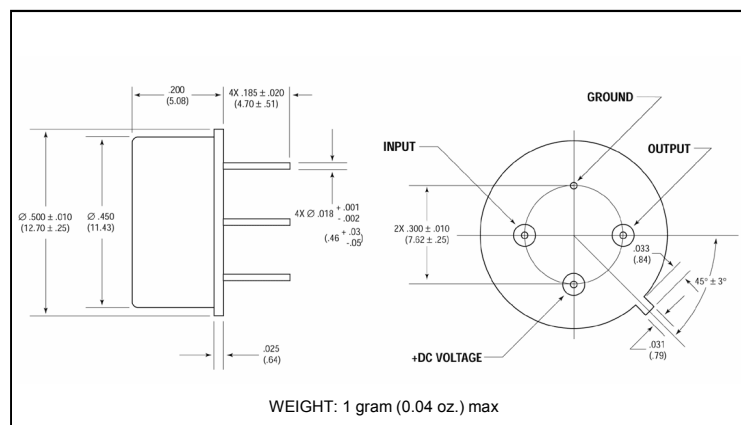
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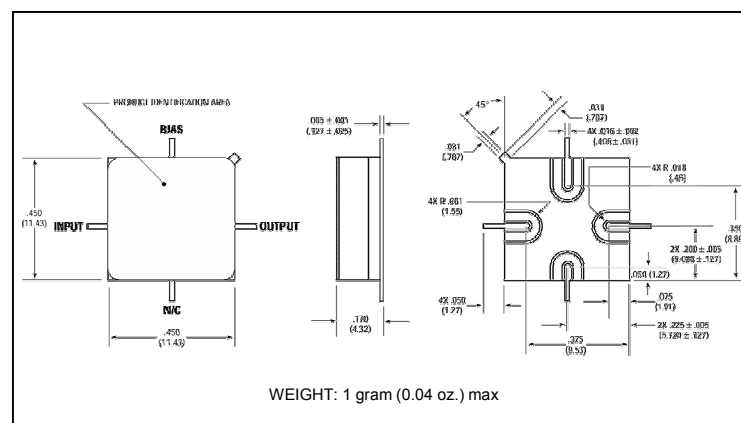
Outline Drawing: TO-8 *



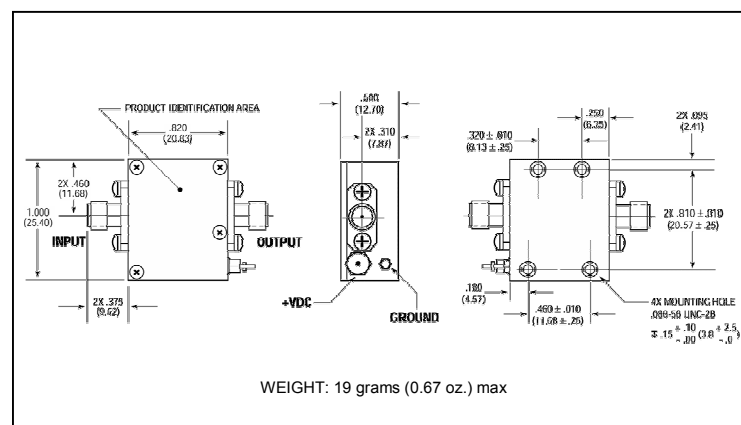
The graph plots VSWR on the y-axis (ranging from 1.0 to 2.0) against Frequency in MHz on the x-axis (logarithmic scale from 10 to 500). The 'INPUT' curve (solid line) starts at approximately 1.8 at 10 MHz, decreases to a minimum of about 1.1 at 100 MHz, and then rises to about 1.8 at 500 MHz. The 'OUTPUT' curve (dashed line) starts at approximately 1.6 at 10 MHz, decreases to a minimum of about 1.05 at 100 MHz, and then rises to about 1.6 at 500 MHz.



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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