

**Cascadable Amplifier**  
**10 to 400 MHz**

**A51/ SMA51**

V2

**Features**

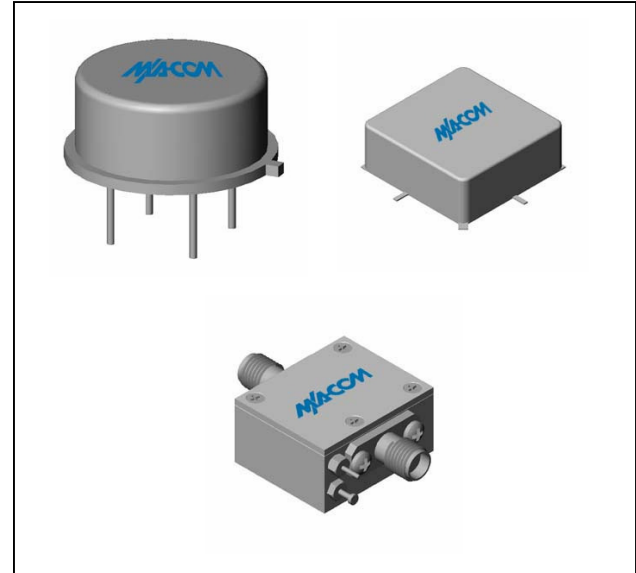
- AVAILABLE IN SURFACE MOUNT
- LOW NOISE: 2.7 dB (TYP.)
- LOW VSWR <1.3:1 (TYP.)
- FLAT BANDWIDTH  $\pm 0.2$  dB (TYP.)

**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	$\pm 0.2$	$\pm 0.7$	$\pm 1.0$
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 $\mu$ sec max.)	0.5 W
"S" Series Burn-In Temperature (case)	125°C

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

Parameter	Rating
Thermal Resistance $\theta_{jc}$	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.

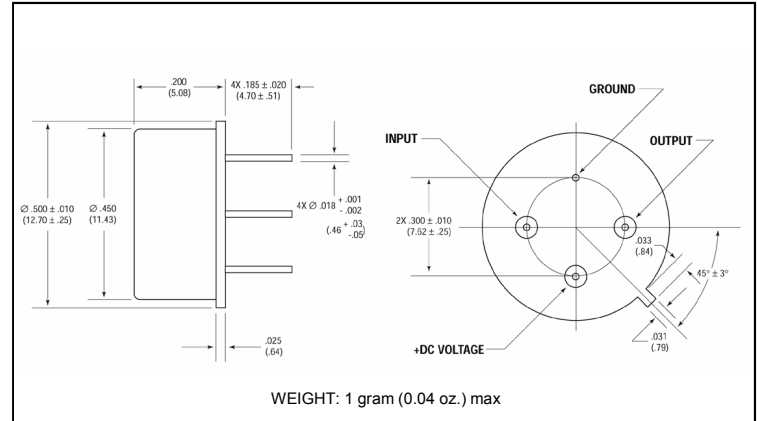
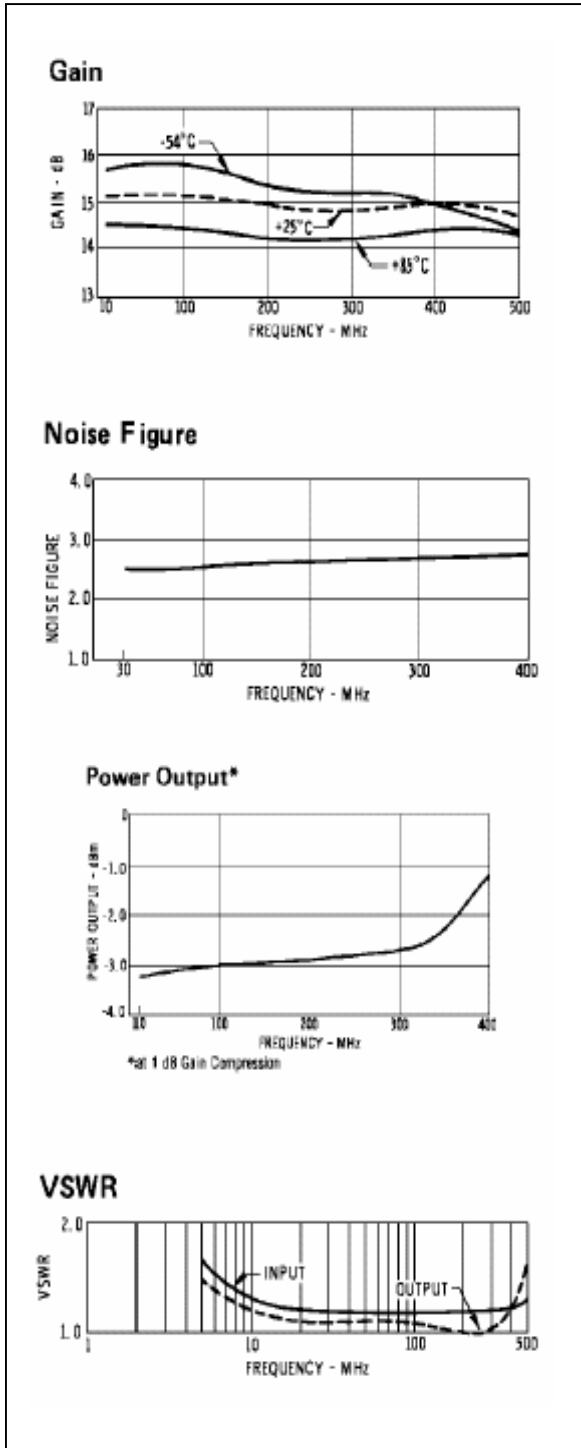
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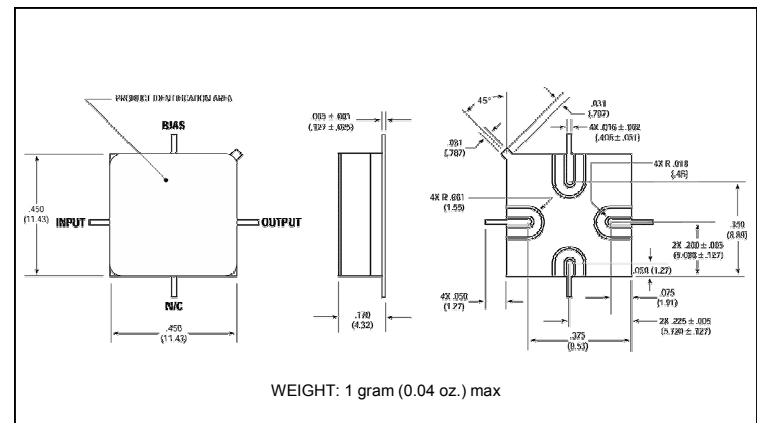
V2

**Typical Performance Curves at +25°C**

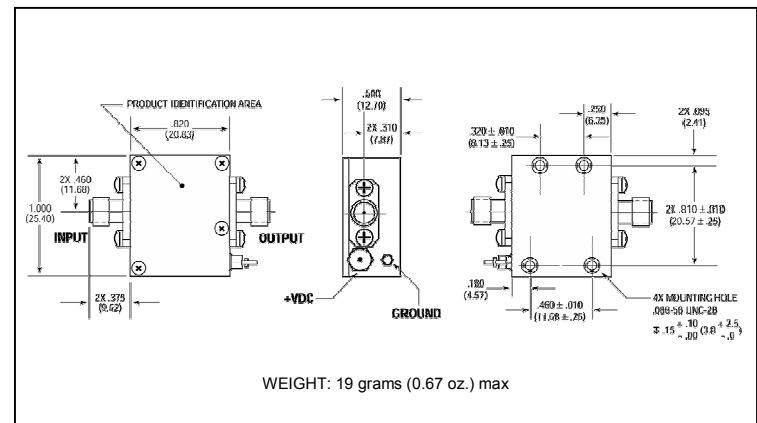
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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