

**Cascadable Amplifier  
5 to 500 MHz**

**A54/ SMA54**

V3

**Features**

- HIGH GAIN— TWO STAGES; 27.5 dB (TYP.)
- MEDIUM OUTPUT LEVEL: +8 dBm (TYP.)
- LOW VSWR:<1.4:1 (TYP.)

**Description**

The A54 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.

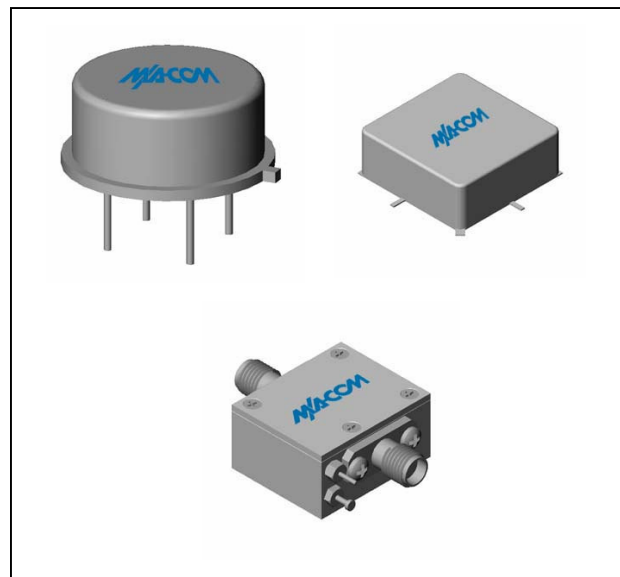
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available

**Ordering Information**

Part Number	Package
A54	TO-8
SMA54	Surface Mount
CA54 **	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	3-500	5-500	5-500
Small Signal Gain (min)	dB	27.5	26.0	24.0
Gain Flatness (max)	dB	±0.8	±0.8	±1.0
Reverse Isolation	dB	37		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	8.0	6.5	5.5
IP3	dBm	+19		
IP2	dBm	+32.5		
Second Order Harmonic IP	dBm	+39.5		
VSWR Input / Output (max)		1.4:1 / 1.4:1	1.5:1 / 1.5:1	1.9:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	34	37	34

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+17 V
Continuous Input Power	12 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 $\theta_{jc}$	130°C/W
Transistor Power Dissipation $P_d$	0.084 W
Junction Temperature Rise Above Case $T_{jc}$	11°C

\* Over temperature performance limits for part number CA54, guaranteed from 0°C to +50°C only.

M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

• **North America** Tel: 800.366.2266 / Fax: 978.366.2266  
 • **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300  
 • **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

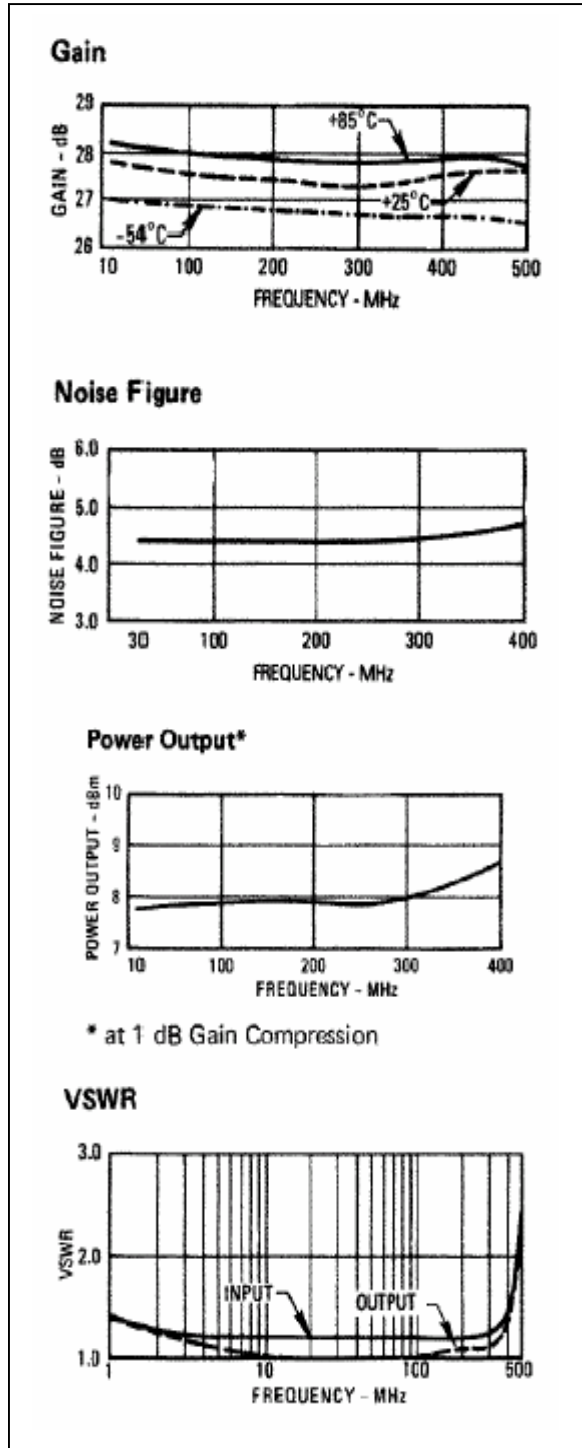
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

**Cascadable Amplifier  
5 to 500 MHz**

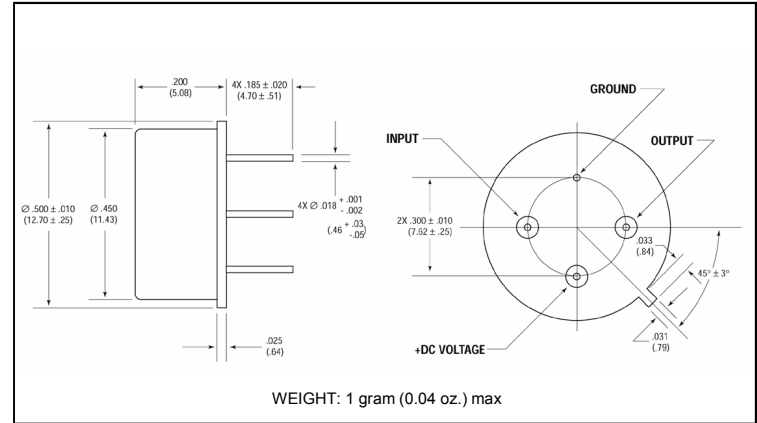
**A54/ SMA54**

V3

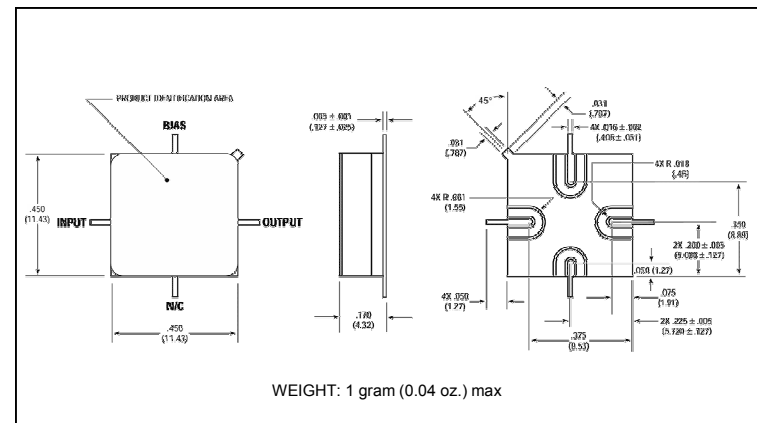
**Typical Performance Curves at +25°C**



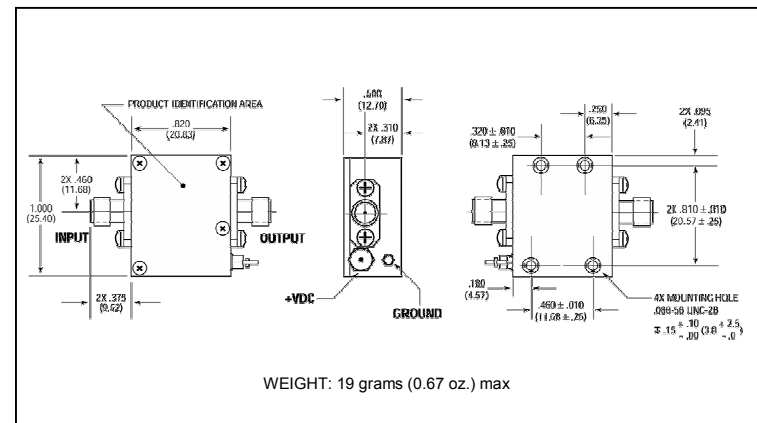
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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