

# Cascadable Amplifier 5 to 500 MHz

Rev. V3

#### **Features**

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

#### **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.

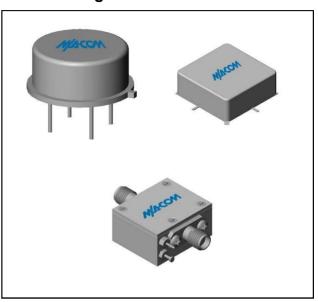
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available

#### **Ordering Information**

Part Number	Package
A54	TO-8
SMA54	Surface Mount
CA54 **	SMA Connectorized

 $<sup>\</sup>ensuremath{^{**}}$  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 <sub>d</sub>	0.084 W	
Junction Temperature Rise Above Case T <sub>jc</sub>	11°C	

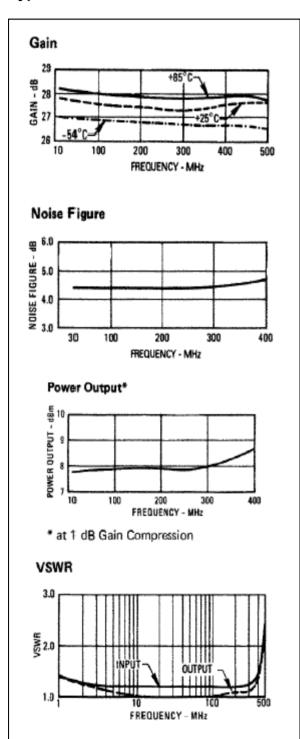
<sup>1 \*</sup> Over temperature performance limits for part number CA54, guaranteed from 0°C to +50°C only.



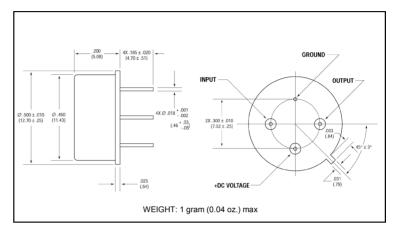
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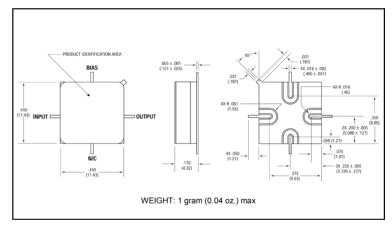
#### Typical Performance Curves at +25°C



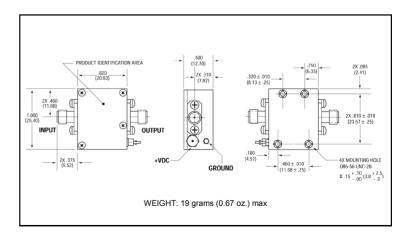
### Outline Drawing: TO-8 \*



#### Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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

# A54 / SMA54



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