A57 / SMA57

Cascadable Amplifier
10 to 500 MHz

Rev. V3

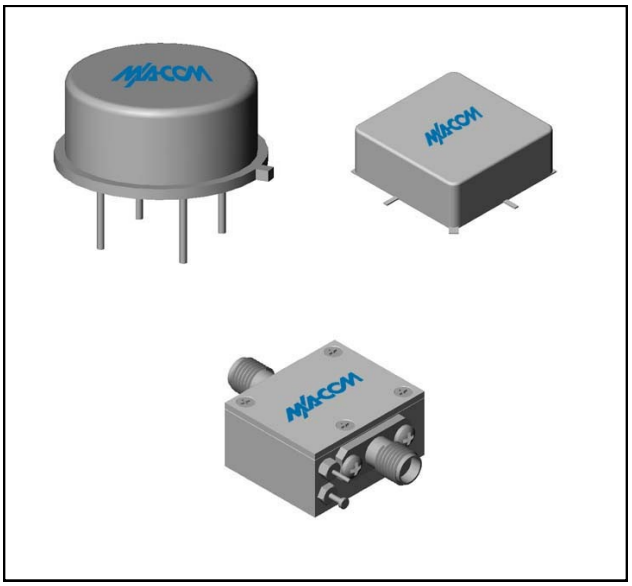
Features

- MEDIUM OUTPUT LEVEL: +14 dBm (TYP.)
- HIGH THIRD ORDER I.P. + 28.0 dBm (TYP.)

Description

The A57 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
A57	TO-8
SMA57	Surface Mount
CA57 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

Electrical Specifications: Z_0 = 50Ω, V_{CC} = +15 V_{DC}

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
Frequency	MHz	5-600	10-500	10-500
Small Signal Gain (min)	dB	14.7	14.0	13.0
Gain Flatness (max)	dB	±0.3	±0.8	±1.0
Reverse Isolation	dB	18		
Noise Figure (max)	dB	4.8	6.0	6.5
Power Output @ 1 dB comp. (min)	dBm	14.0	13.0	12.5
IP3	dBm	+28		
IP2	dBm	+41		
Second Order Harmonic IP	dBm	+46		
VSWR Input / Output (max)		1.5:1 / 1.5:1	2.0:1 / 2.0:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	44	49	51

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	+125ºC
DC Voltage	+17 V
Continuous Input Power	13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	+125ºC

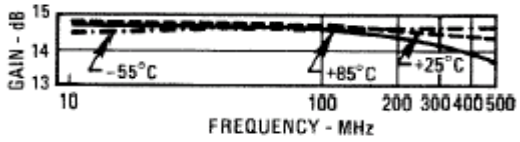
Thermal Data: V_{CC} = +15 V_{DC}

Parameter	Rating
Thermal Resistance θ_{jc}	130ºC/W
Transistor Power Dissipation P_d	0.236 W
Junction Temperature Rise Above Case T_{jc}	31ºC

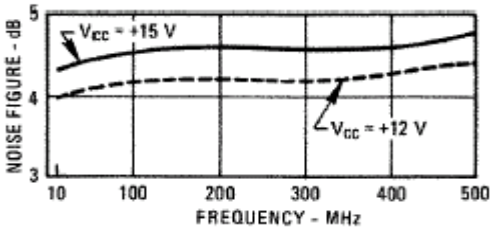
* Over temperature performance limits for part number CA57, guaranteed from 0°C to +50°C only.

Typical Performance Curves at +25°C

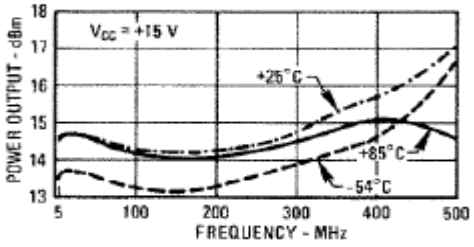
Gain



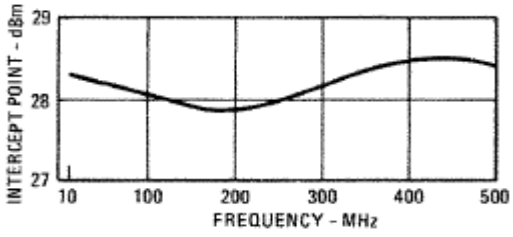
Noise Figure



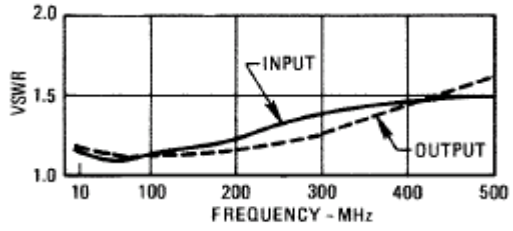
Power Output*



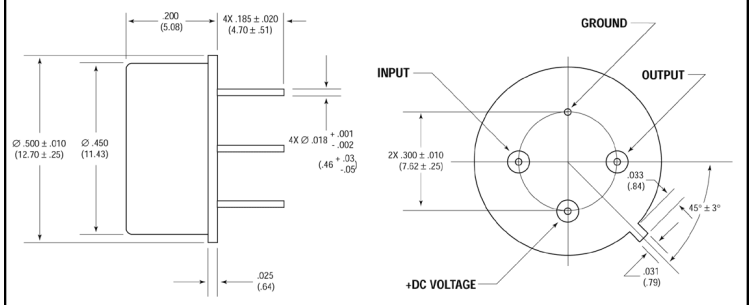
3rd Order Two Tone Intercept Point



VSWR

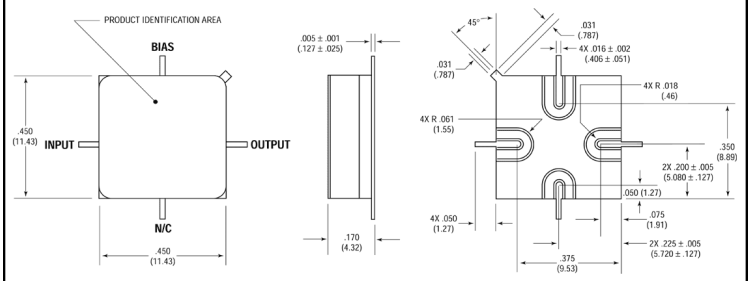


Outline Drawing: TO-8 *



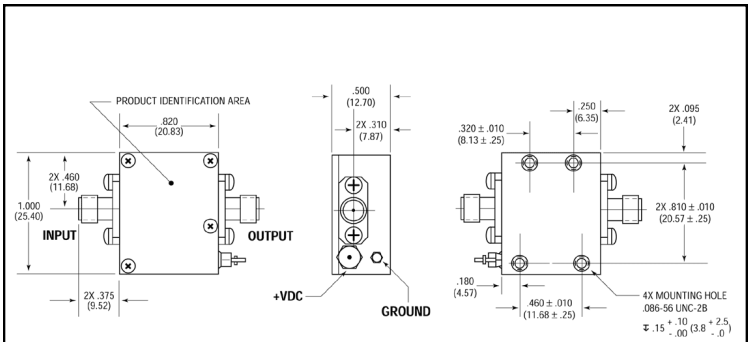
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 19 grams (0.67 oz.) max

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

Mouser Electronics

Authorized Distributor

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MACOM:

A57 SMA57