

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.

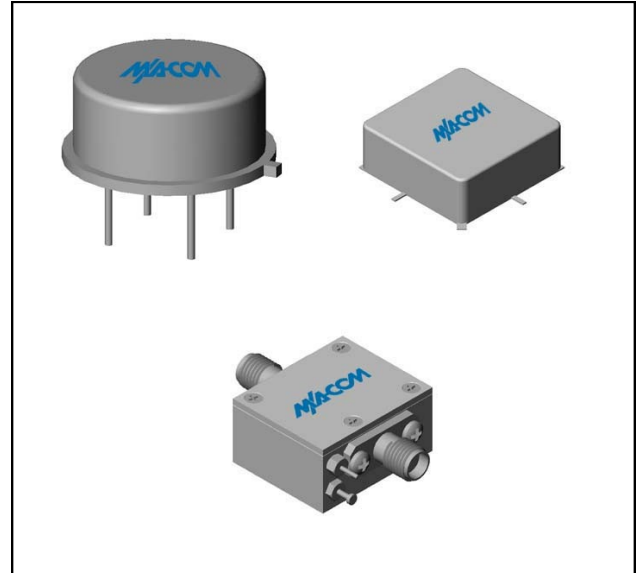
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
A57	TO-8
SMA57	Surface Mount
CA57 **	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	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	-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 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	+125°C

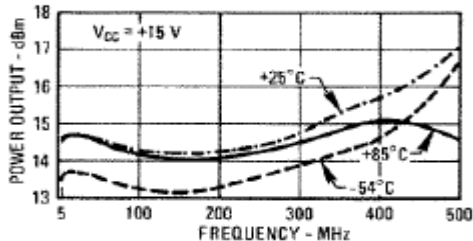
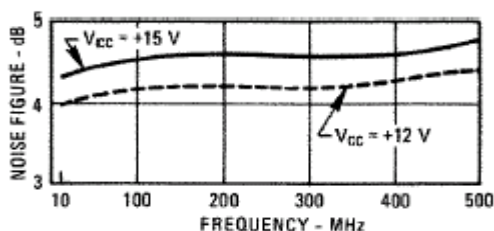
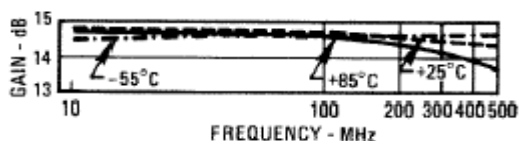
Thermal Data: $V_{CC} = +15 V_{DC}$

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

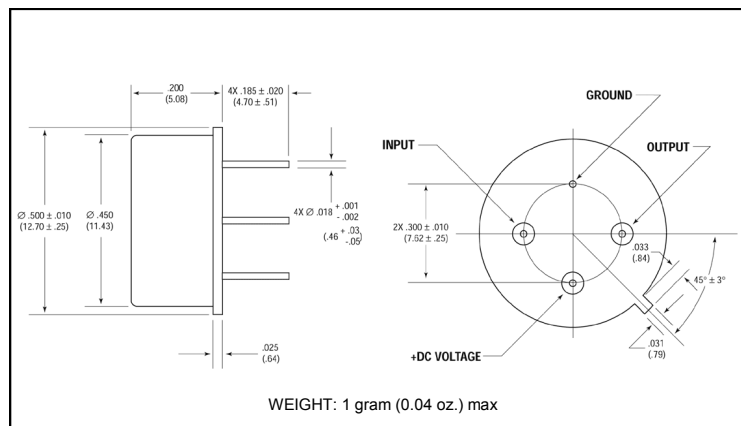
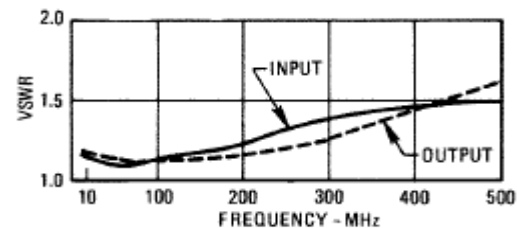
1 * Over temperature performance limits for part number CA57, guaranteed from 0°C to +50°C only.

Rev. V3

Outline Drawing: TO-8 *



Frequency (MHz)	Intercept Point (dBm)
10	28.3
100	28.0
200	27.8
300	28.2
400	28.5
500	28.4

[illegible]

The drawing consists of three views of the 28-pin DIP package:

- Top View:** Shows the package footprint. Dimensions include a total width of 0.820 (20.83), a pin pitch of 0.050 (1.27), and a distance from the input/output pins to the center of the package of 0.375 (9.52). The input and output pins are labeled "INPUT" and "OUTPUT" respectively. A "PRODUCT IDENTIFICATION AREA" is indicated on the top edge.
- Side View:** Shows the package height and pin dimensions. The total height is 0.500 (12.70). The distance from the top of the package to the top of the pins is 0.310 (7.87). The pins are labeled "+VDC" and "GROUND".
- End View:** Shows the package width and pin dimensions. The total width is 0.320 ± 0.010 (8.13 ± .25). The distance from the center of the package to the center of the pins is 0.250 (6.35). The pins are labeled "2X .095 (2.41)" and "2X .610 ± 0.010 (20.57 ± .25)". The mounting holes are labeled "4X MOUNTING HOLE .086-56 UNC-2B". The distance from the center of the package to the center of the mounting holes is 0.460 ± 0.010 (11.68 ± .25). The distance from the center of the package to the center of the pins is 0.180 (4.57).

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