

**Cascadable Amplifier
10 to 500 MHz**

A514

V1

Features

- HIGH GAIN: 28 dB (TYP.)
- LOW NOISE: 4.0 dB (TYP.)
- HIGH OUTPUT POWER: +19 dBm (TYP.)

Description

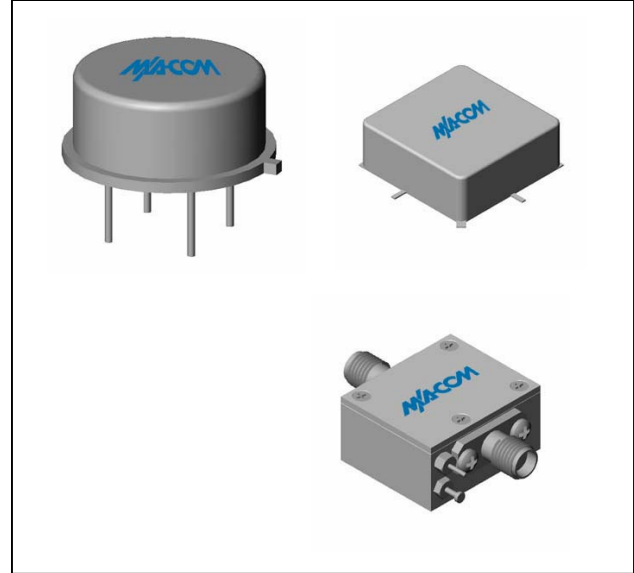
The A514 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures 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
A514	TO-8
MAAM-007272-SMA514	Surface Mount
MAAM-007272-0CA514	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	3-600	5-500	5-500
Small Signal Gain (min)	dB	28.0	26.5	26.0
Gain Flatness (max)	dB	±0.3	±0.5	±0.8
Reverse Isolation	dB	36		
Noise Figure (max)	dB	4.0	4.7	5.2
Power Output @ 1 dB comp. (min)	dBm	19.0	18.5	17.0
IP3	dBm	+32		
IP2	dBm	+50		
Second Order Harmonic IP	dBm	+55		
VSWR Input / Output (max)		1.4:1 / 1.4:1	1.7:1 / 1.7:1	1.8:1 / 1.8:1
DC Current @ 15 Volts (max)	mA	96	103	110

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+110°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}	150°C/W
Transistor Power Dissipation P_d	0.36W
Junction Temperature Rise Above Case T_{jc}	+55°C

* Over temperature performance limits for part number CA514, guaranteed from 0°C to +50°C only.

1

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

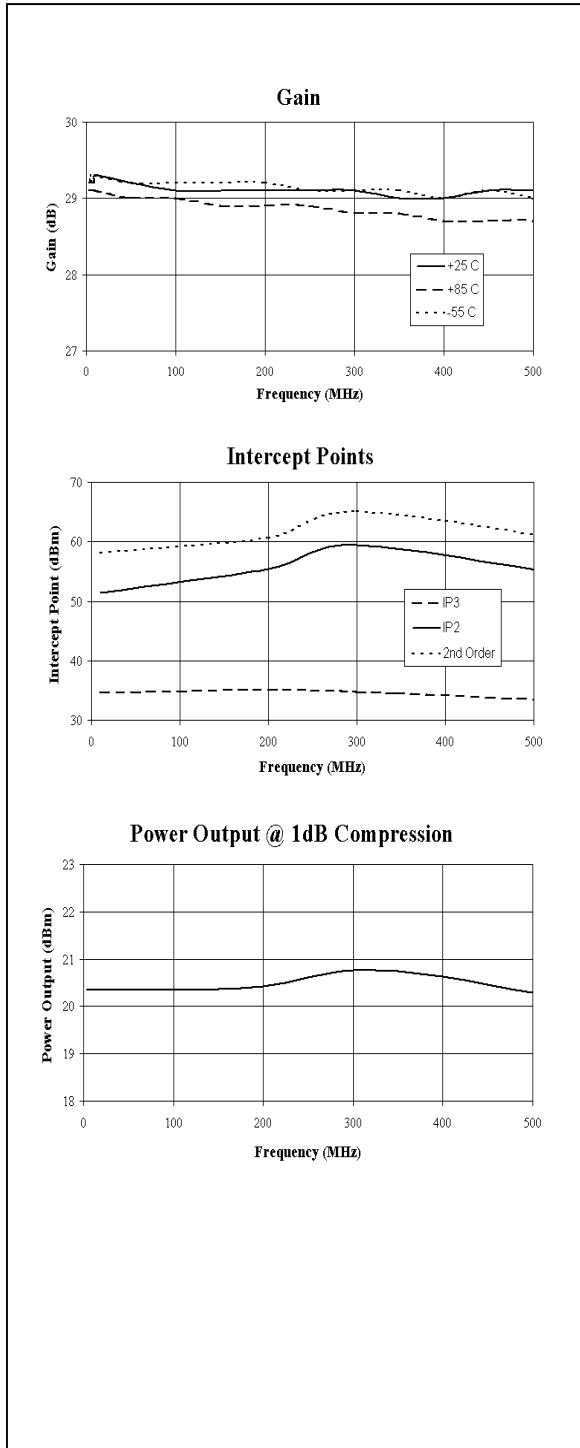
Visit www.macom.com for additional data sheets and product information.

**Cascadable Amplifier
10 to 500 MHz**

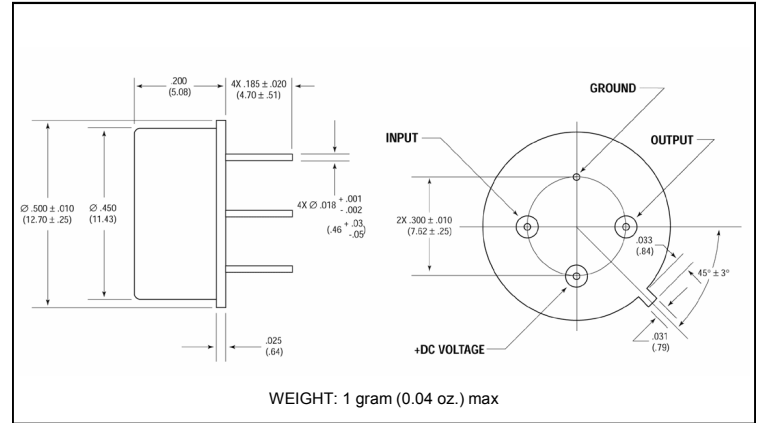
A514

V1

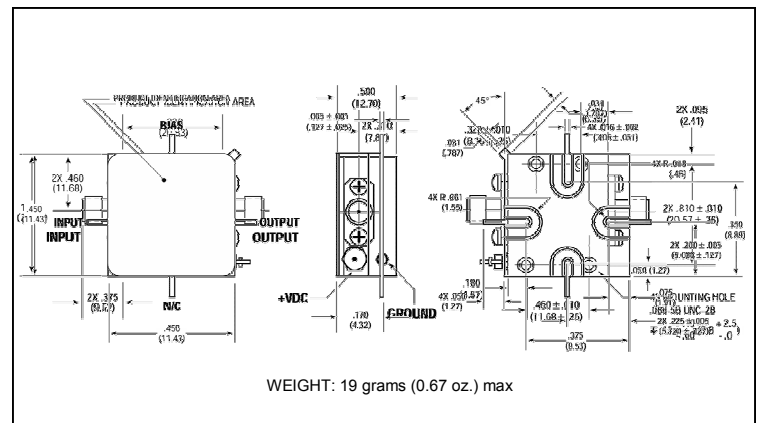
Typical Performance Curves at +25°C



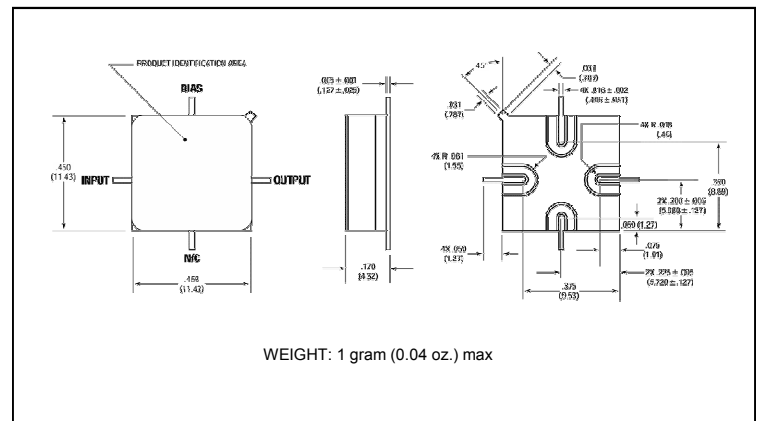
Outline Drawing: TO-8 *



Outline Drawing: Connectorized *



Outline Drawing: Surface Mount *



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