

Cascadable Amplifier 10 to 500 MHz

MAAM-007272-SMA514

V1

Features

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

Description

The SMA514 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

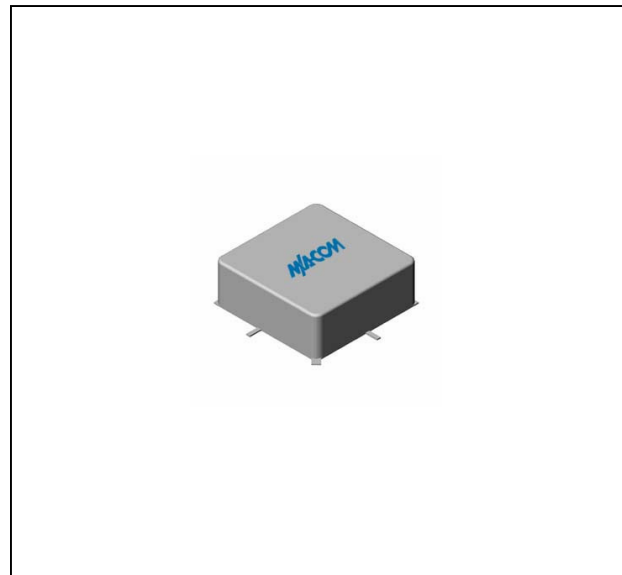
This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

Surface Mount package is hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
SMA514	Surface Mount

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.

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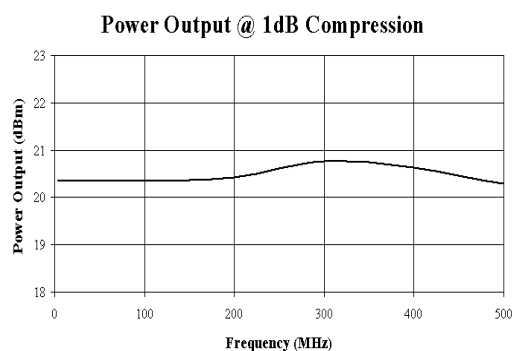
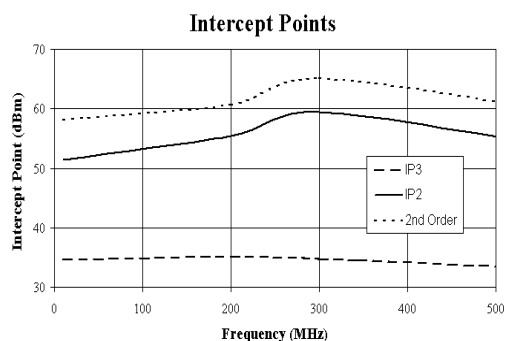
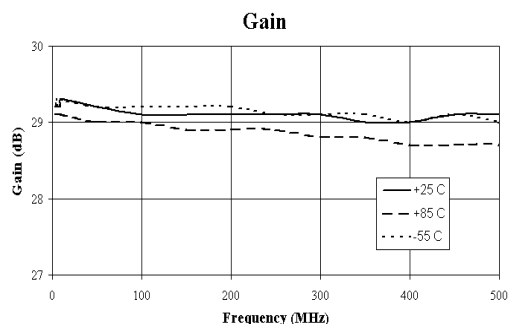
Visit www.macom.com for additional data sheets and product information.

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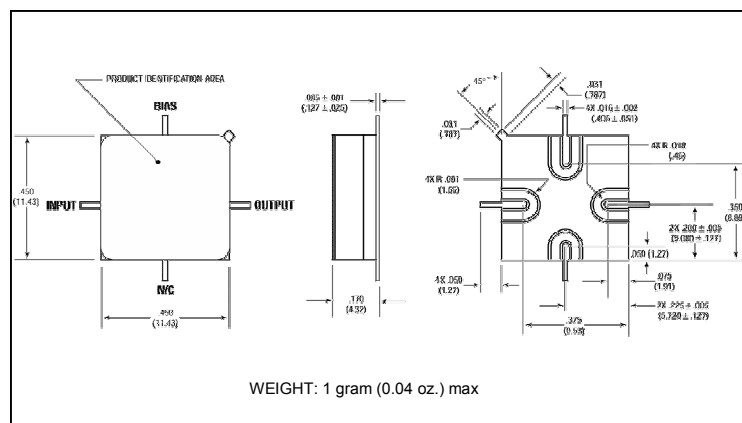
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Typical Performance Curves at +25°C



Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

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