tyco Electronics

MACOM

Cascadable Amplifier
10 to 500 MHz

PA511/SMPA511
V2

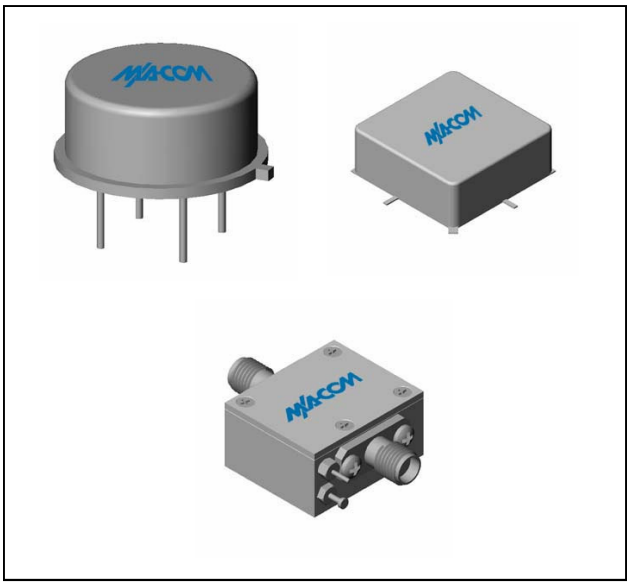
Features

- HIGH POWER OUTPUT +24.8 dBm (TYP.)
- HIGH THIRD ORDER IP3 +40 dBm (TYP.)
- MODERATE NOISE FIGURE 4.6 dB (TYP.)

Description

The PA511 RF amplifier is a discrete thin film hybrid design, which incorporates the use of 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. An active DC biasing network is used for temperature-stable performance, in addition to an RF Choke, used for power supply decoupling.
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
PA511	TO-8
SMPA511	Surface Mount
MAAP-008739-CPA511	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	12.7	11.5	11.0
Gain Flatness (max)	dB	±0.4	±0.5	±0.8
Reverse Isolation	dB	17		
Noise Figure (max)	dB	4.6	5.0	5.5
Power Output @ 1 dB comp. (min)	dBm	24.8	23.5	23.0
IP3	dBm	+40		
IP2	dBm	+55		
Second Order Harmonic IP	dBm	+60		
VSWR Input / Output (max)		1.3:1 / 1.4:1	1.8:1 / 1.8:1	2.0:1 / 2.1:1
DC Current @ 15 Volts (max)	mA	118	120	122

* Over temperature performance limits for part number CPA511, guaranteed from 0°C to +50°C only.

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +150ºC
Case Temperature	85ºC
DC Voltage	+17 V
Continuous Input Power	+17 dBm
Short Term Input power (1 minute max.)	100 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	85ºC

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

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

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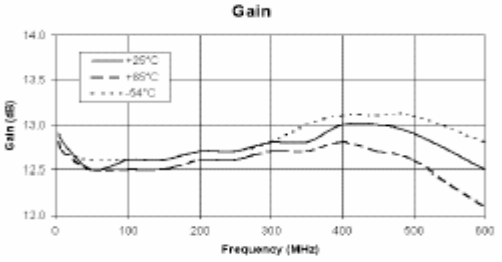
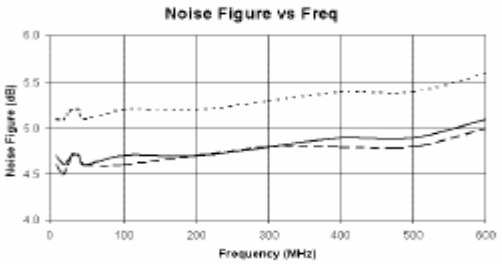
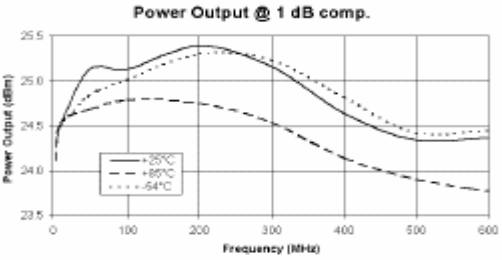
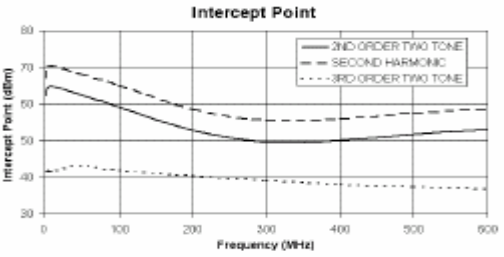
Visit www.macom.com for additional data sheets and product information.

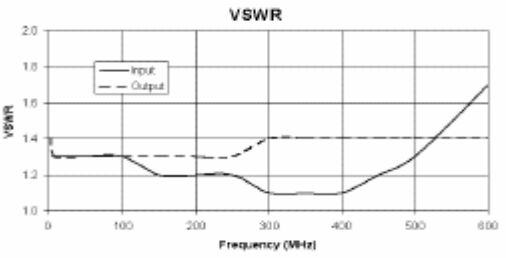
Typical Performance Curves at +25°C



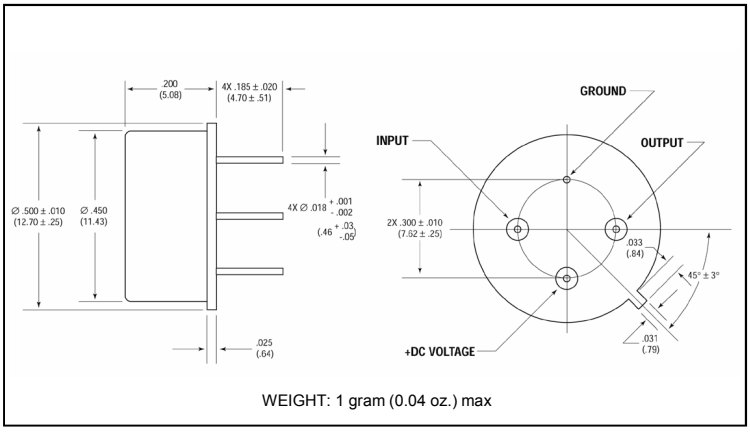






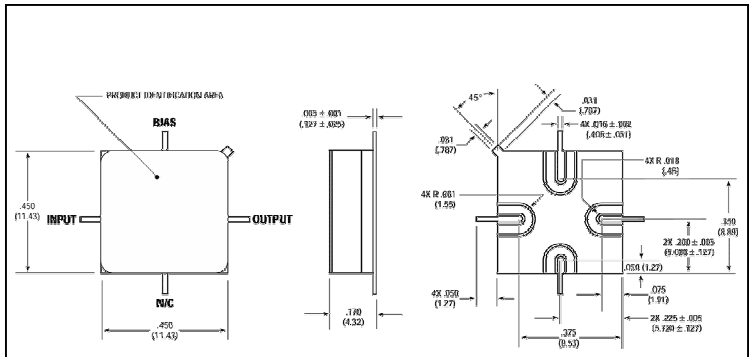


Outline Drawing: TO-8 *



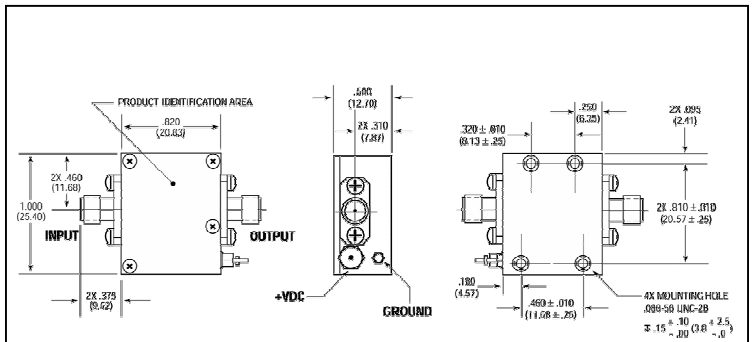
WEIGHT: 1 gram (0.04 oz.) max

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.

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