# A511 / SMA511

### **Cascadable Amplifier** 10 to 500 MHz

#### Features

- HIGH POWER OUTPUT: +21 dBm (TYP.)
- HIGH THIRD ORDER IP3: +33 dBm (TYP.)
- HIGH EFFICIENCY: 52 mA (TYP.) @ +15 Vdc
- AVAILABLE IN BOTH TO-8 and SMTO-8 PACKAGES

#### Description

The A511 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. Use of an impedance transformer offers the benefit of high dynamic range and high efficiency.

Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

#### **Ordering Information**

Part Number	Package	
A511	TO-8	
MAAM-008735-SMA511	Surface Mount	
CA511	SMA Connectorized **	

\*\* The connectorized version is not RoHs compliant.

#### Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +15 V_{DC}$

Parameter	Units Typical		Guaranteed	
Parameter	Units	25°C	0º to 50ºC	-54º to +85ºC*
Frequency	MHz	5-500	10-500	10-500
Small Signal Gain (min)	dB	17.0	16.0	15.5
Gain Flatness (max)	dB	±0.4	±0.8	±1.0
Reverse Isolation	dB	16		
Noise Figure (max)	dB	3.4	4.2	4.7
Power Output @ 1 dB comp. (min)	dBm	20	18.5	18.0
IP3	dBm	+33		
IP2	dBm	+40		
Second Order Harmonic IP	dBm	+46		
VSWR Input / Output (max)		1.7:1 / 1.7:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	52	56	58

#### Product Image



#### Parameter Maximum -62°C to +150°C Storage Temperature **Case Temperature** 125°C DC Voltage +17 V Continuous Input Power +13 dBm Short Term Input power 100 mW (1 minute max.) Peak Power (3 µsec max.) 0.5 W "S" Series Burn-In 125°C Temperature (case)

#### Thermal Data: V<sub>cc</sub> = +15 V<sub>Dc</sub>

Parameter	Rating	
Thermal Resistance $\theta_{jc}$	143°C/W	
Transistor Power Dissipation $P_d$	0.47 W	
Junction Temperature Rise Above Case T <sub>jc</sub>	68°C	

\* Over temperature performance limits for part number CA511, guaranteed from 0°C to +50°C only.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

Commitment to produce in volume is not gue

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PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples available

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Absolute Maximum Ratings

Absolute

Rev. V3



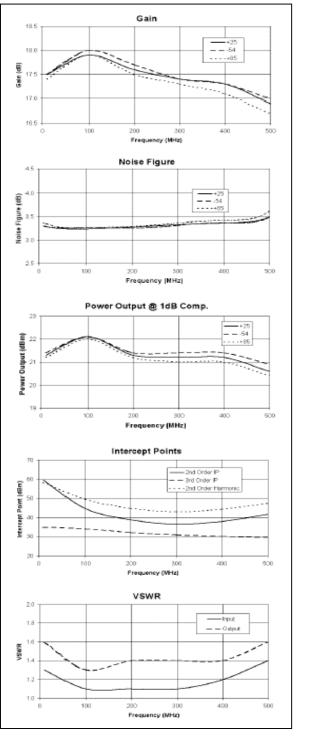
# A511 / SMA511



Rev. V3

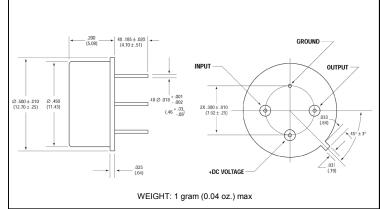
## Cascadable Amplifier 10 to 500 MHz

#### Typical Performance Curves at +25°C

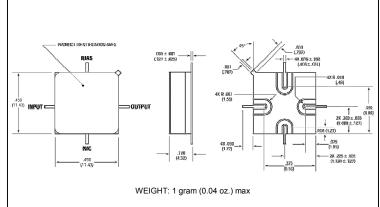


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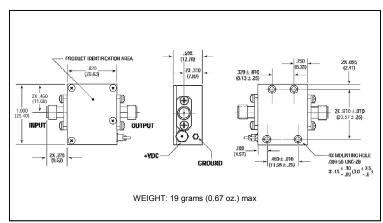
#### Outline Drawing: TO-8 \*



#### Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized \*



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

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