

Cascadable Amplifier 2000 to 6000 MHz

Rev. V5

Features

- Low Noise Figure: 1.5 dB
- Medium Output Power: +18 dBm
- High Efficiency: 58 mA @ +5 V_{DC}
- pHEMT Amplifier

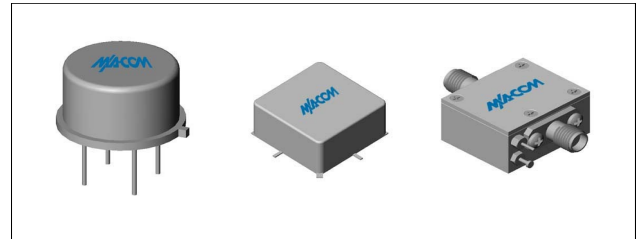
Description

The A6011 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This single stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. An RF choke is used for DC power supply decoupling.

Both the TO-8 and surface mount packages are hermetically sealed, and environmental screening is available per MIL-STD-883.

Product Image



Ordering Information

Part Number	Package
A6011	TO-8
SMA6011	Surface Mount
CA6011 **	SMA Connectorized

** The connectorized version is not RoHS compliant.

Electrical Specifications: $Z_0 = 50 \Omega$, $V_{CC} = +5 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	GHz	1.5 - 6.0	2.0 - 6.0	2.0 - 6.0
Small Signal Gain (min.)	dB	14.8	13.5	12.5
Gain Flatness (max.)	dB	±0.6	±0.9	±1.1
Reverse Isolation	dB	16	—	—
Noise Figure (max.)	dB	1.5	2.5	3.0
Power Output @ 1 dB comp. (min.)	dBm	18.0	16.5	16.0
IP3	dBm	+30	—	—
IP2	dBm	+45	—	—
Second Order Harmonic IP	dBm	+50	—	—
VSWR Input / Output (max.)	Ratio	1.9:1 / 1.9:1	2.1:1 / 2.1:1	2.2:1 / 2.2:1
DC Current @ 5 Volts (max.)	mA	58	65	70

* Over temperature performance limits for part number CA6011, guaranteed from 0°C to +50°C only.

Absolute Maximum Ratings

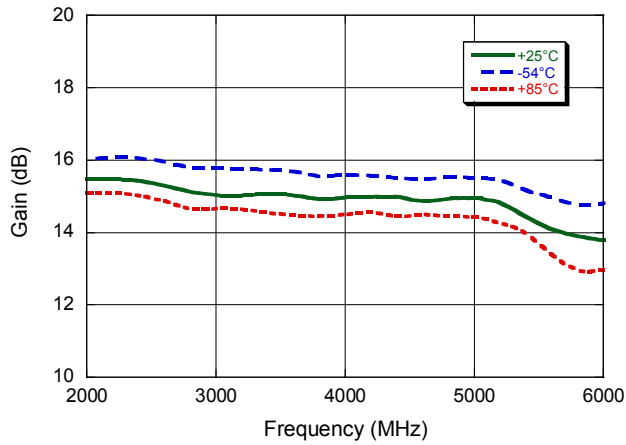
Parameter	Absolute Maximum
Storage Temperature	-62°C to +150°C
Case Temperature	125°C
DC Voltage	+7 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	100 mW
Peak Power (3 μsec max.)	0.25 W
“S” Series Burn-In Temperature (case)	125°C

Thermal Data: $V_{CC} = +5 V_{DC}$

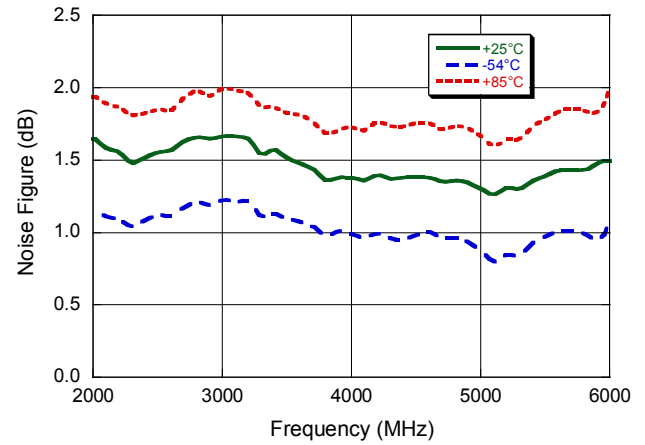
Parameter	Rating
Thermal Resistance θ_{jc}	47°C/W
Transistor Power Dissipation P_d	0.2 W
Junction Temperature Rise Above Case T_{jc}	+9.4°C

Typical Performance Curves

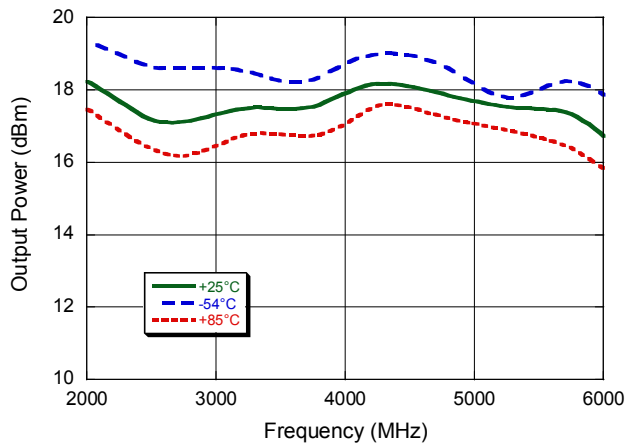
Gain



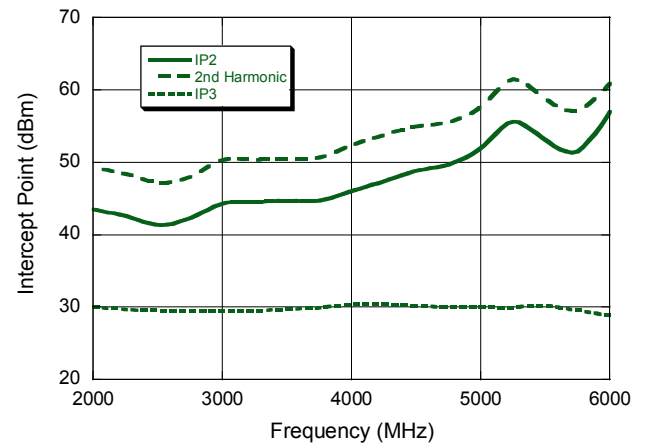
Noise Figure



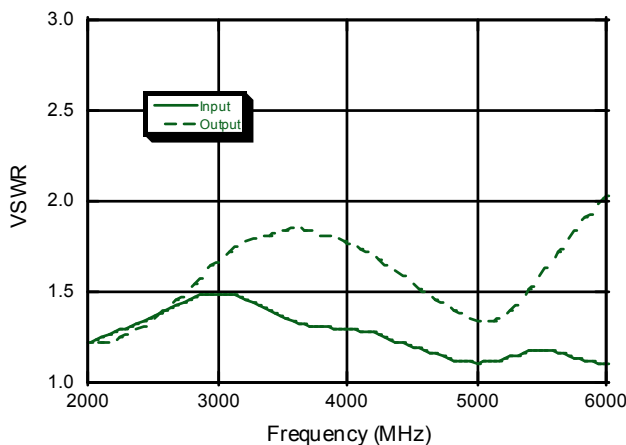
P_{OUT} @ 1 dB Gain Compression



Intercept Points



VSWR



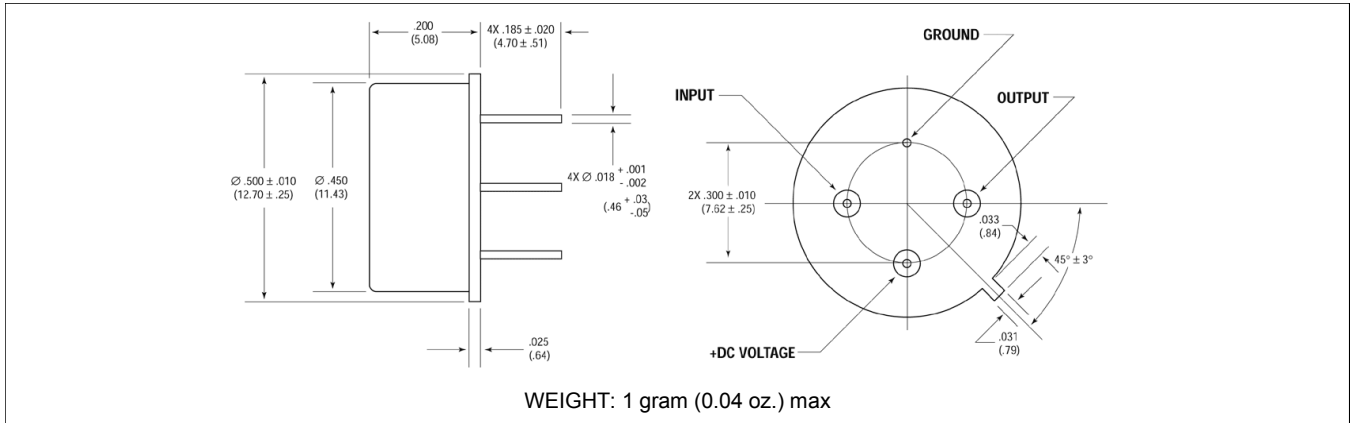
A6011 / SMA6011



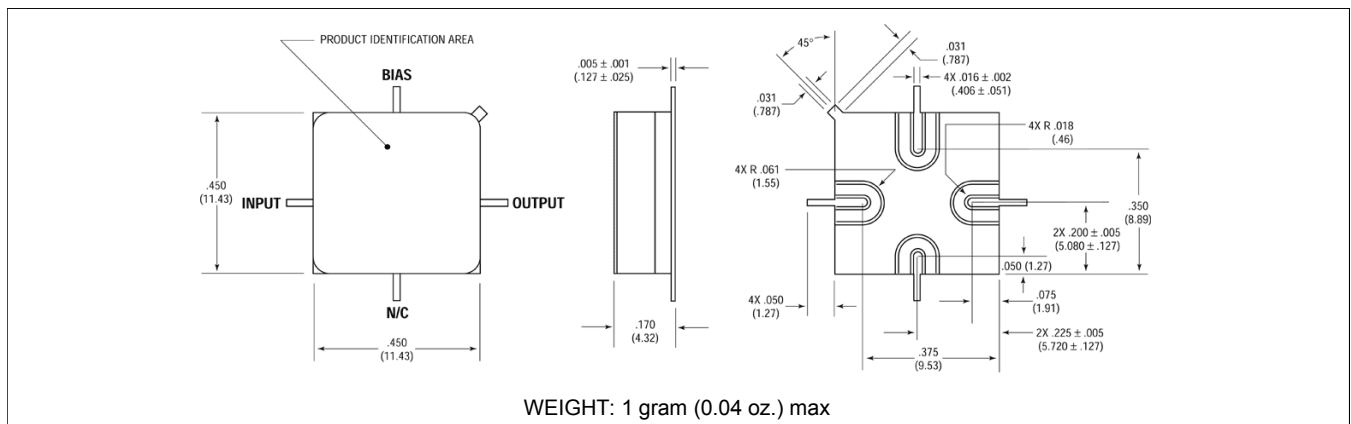
Cascadable Amplifier
2000 to 6000 MHz

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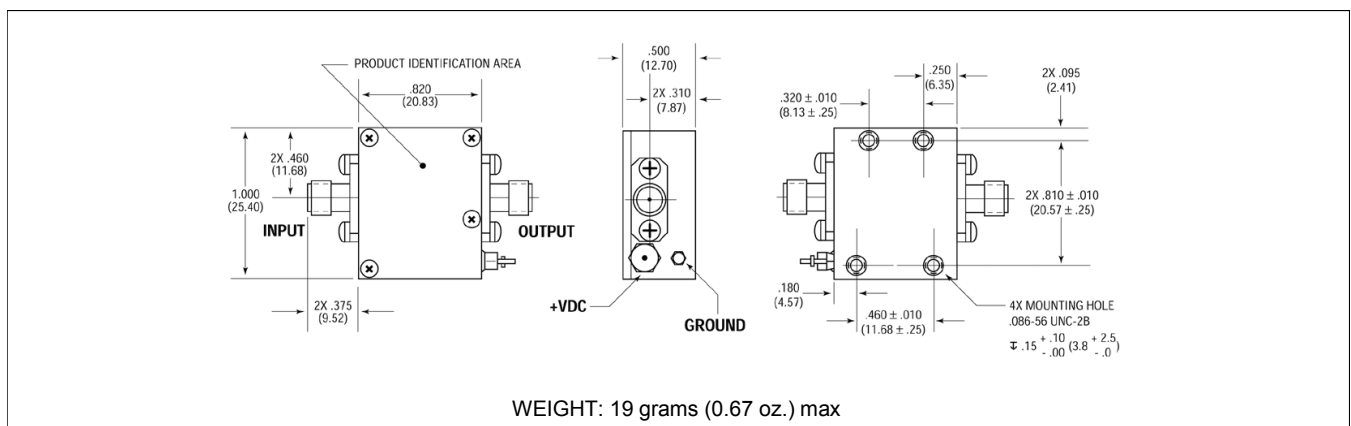
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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