

**Cascadable Amplifier  
10 to 400 MHz**

**A411/ SMA411**

V3

**Features**

- LOW NOISE FIGURE: 3.0 dB (TYP.)
- HIGH EFFICIENCY: 16 mA at +5 Vdc
- HIGH THIRD ORDER I.P.: +29 dBm at +8 Vdc (TYP.)
- MEDIUM OUTPUT LEVEL: +14.5 dBm at +8 Vdc (TYP.)

**Description**

The A411 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.

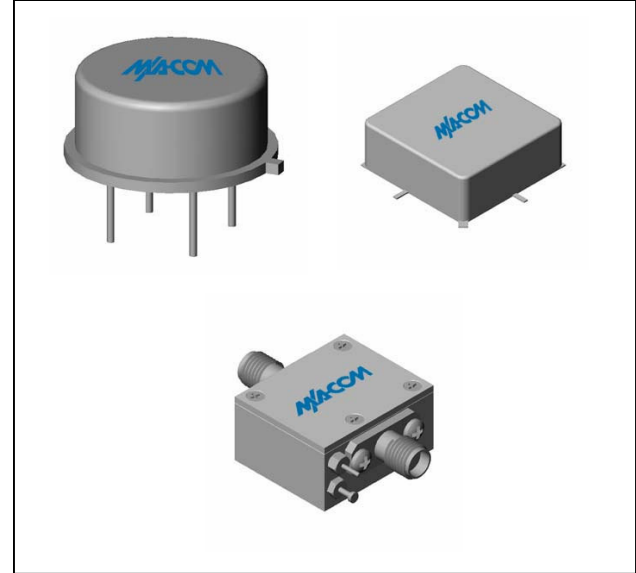
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

**Ordering Information**

Part Number	Package
A411	TO-8
SMA411	Surface Mount
CA411 **	SMA Connectorized

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

**Product Image**



**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	MHz	5-450	10-400	10-400
Small Signal Gain (min)	dB	15.8	15.0	14.5
Gain Flatness (max)	dB	±0.3	±0.5	±0.8
Reverse Isolation	dB	20		
Noise Figure (max)	dB	3.0	3.5	4.0
Power Output @ 1 dB comp. (min)	dBm	10.0	9.0	8.5
IP3	dBm	+24		
IP2	dBm	+32		
Second Order Harmonic IP	dBm	+39		
VSWR Input / Output (max)		1.5:1 / 1.5:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 5 Volts (max)	mA	16	18	20

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+10 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:  $V_{CC} = +5 V_{DC}$**

Parameter	Rating
Thermal Resistance $\theta_{jc}$	184°C/W
Transistor Power Dissipation $P_d$	0.059 W
Junction Temperature Rise Above Case $T_{jc}$	11°C

\* Over temperature performance limits for part number CA411, guaranteed from 0°C to +50°C only.

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Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

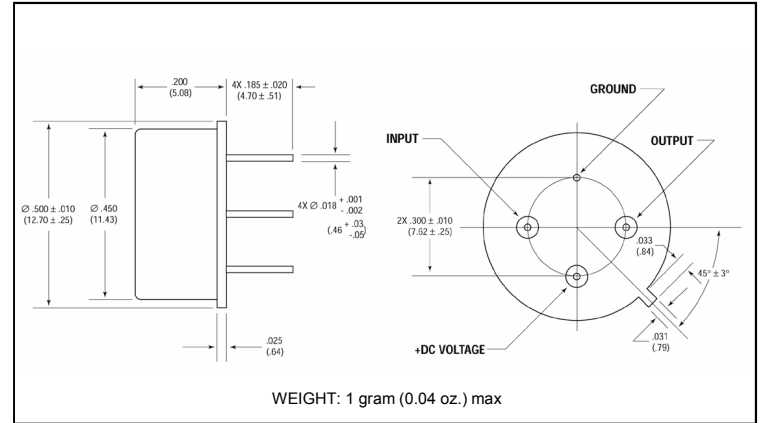
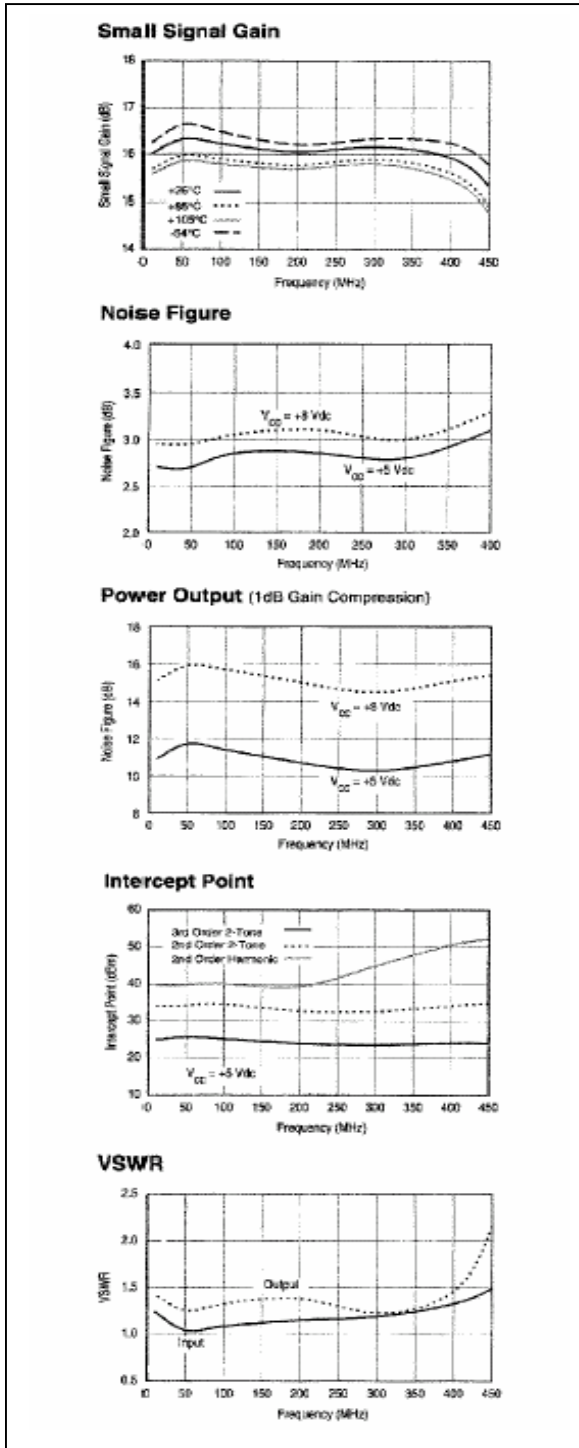
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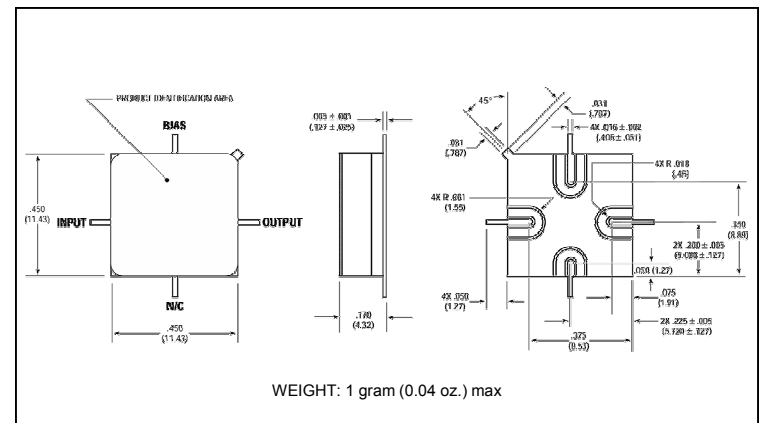
V3

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

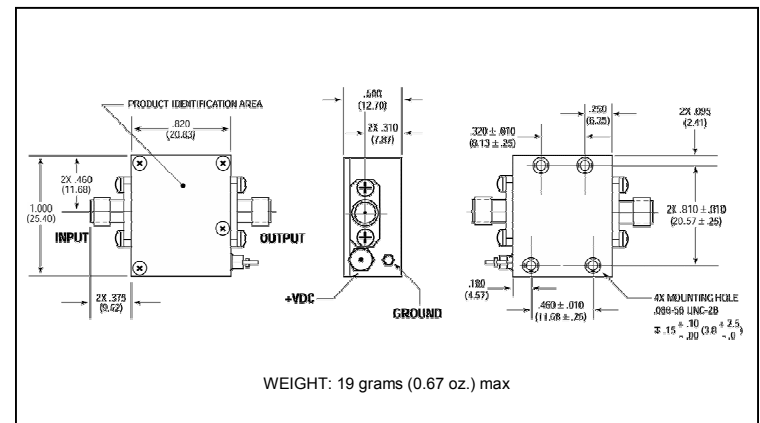
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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