

# Cascadable Amplifier 100 - 1200 MHz

Rev. V4

#### **Features**

- 1.8 dB Noise Figure
- 19 dBm Output Power
- 20% Power Added Efficiency (PAE)

### **Description**

The A1212 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

This 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 MIL-STD-883 environmental screening is available.

#### **Product Image**



#### **Ordering Information**

Part Number	Package	
A1212	TO-8	
SMA1212	Surface Mount	
CA1212 <sup>1</sup>	SMA Connectorized	

<sup>1.</sup> The connectorized version is not RoHS compliant.

# Electrical Specifications<sup>2</sup>: $Z_0 = 50 \Omega$ , $V_{CC} = 5 V_{DC}$

Description	11!4	Typical	Guaranteed	
Parameter	Units	25°C	0° to 50°C	-54° to +85°C*
Frequency	GHz	0.1-1.2	0.1-1.2	0.1-1.2
Small Signal Gain (min.)	dB	14.0	12.5	11.5
Gain Flatness (max.)	dB	±0.6	±1.0	±1.2
Reverse Isolation	dB	23	_	_
Noise Figure (max.)	dB	1.8	2.3	2.7
Power Output @ 1 dB comp. (min.)	dBm	19.0	17.0	16.0
IP3	dBm	29	_	_
IP2	dBm	40	_	_
Second Order Harmonic IP	dBm	46	_	_
VSWR Input / Output (max.)	Ratio	1.8:1 / 1.8:1	2.1:1 / 2.1:1	2.3:1 / 2.3:1
DC Current @ 5 Volts (max.)	mA	70	75	85

<sup>2.</sup> Over temperature performance limits for part number CA1212, guaranteed from 0°C to +50°C only.



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# Absolute Maximum Ratings<sup>3,4</sup>

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	+125°C	
DC Voltage	8 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	

<sup>3.</sup> Exceeding any one or combination of these limits may cause permanent damage to this device.

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

Parameter	Rating
Thermal Resistance $\theta_{jc}$	90°C/W
Transistor Power Dissipation P <sub>d</sub>	0.3 W
Junction Temperature Rise Above Case T <sub>jc</sub>	+27°C

<sup>4.</sup> MACOM does not recommend sustained operation near these survivability limits.

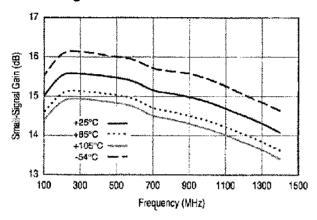


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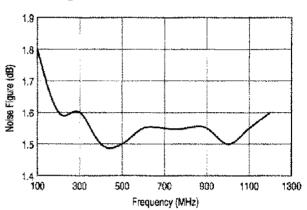
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### Typical Performance Curves at +25°C

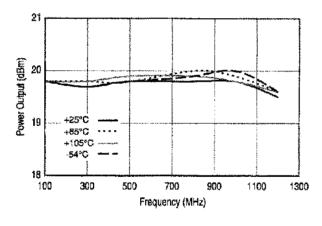
### **Small Signal Gain**



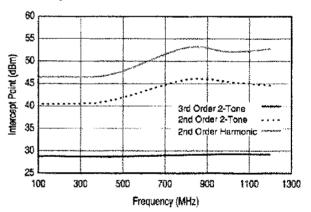
### Noise Figure



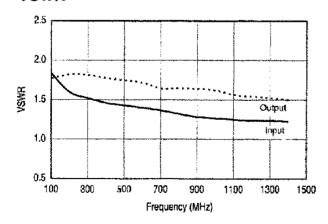
### Power Output (1dB Gain Compression)



### Intercept Point



#### **VSWR**



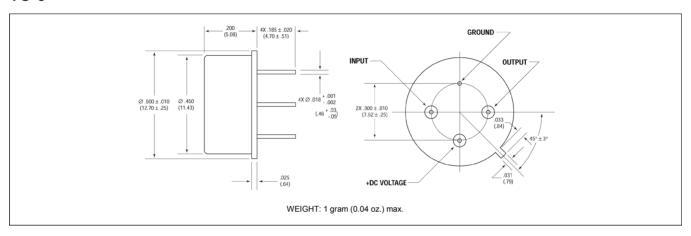


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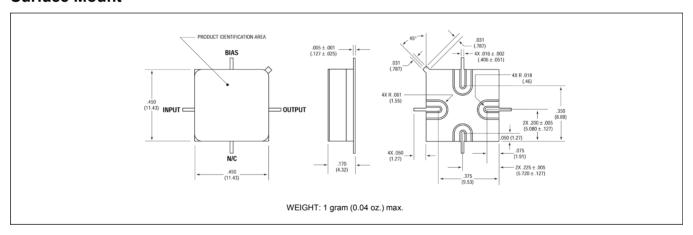
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## Outline Drawings<sup>5</sup>

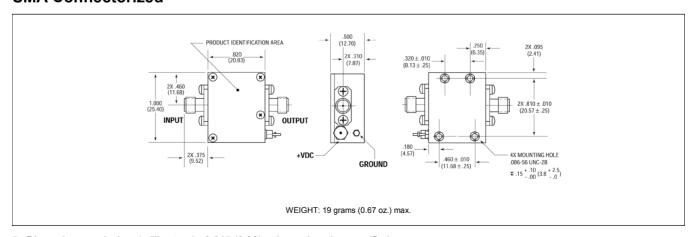
#### **TO-8**



#### **Surface Mount**



#### **SMA Connectorized**



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



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