

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 ¹	SMA Connectorized

1. The connectorized version is not RoHS compliant.

Electrical Specifications²: $Z_0 = 50 \Omega$, $V_{CC} = 5 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	GHz	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

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

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Absolute Maximum Ratings^{3,4}

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

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

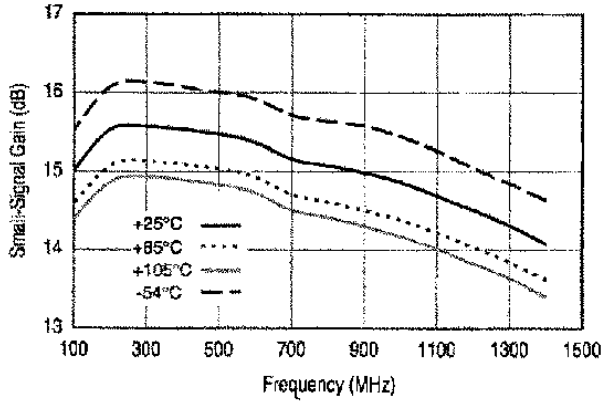
4. MACOM does not recommend sustained operation near these survivability limits.

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

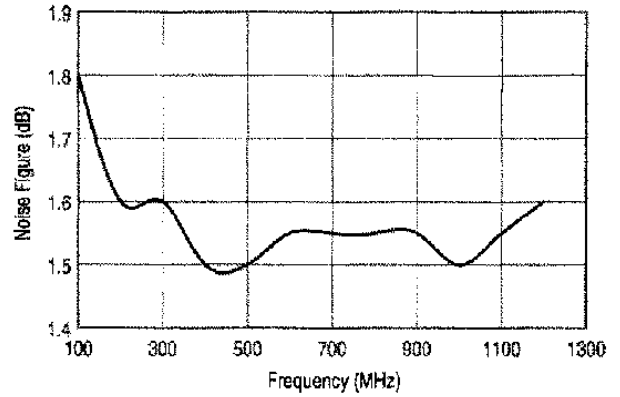
Parameter	Rating
Thermal Resistance θ_{jc}	90°C/W
Transistor Power Dissipation P_d	0.3 W
Junction Temperature Rise Above Case T_{jc}	+27°C

Typical Performance Curves at +25°C

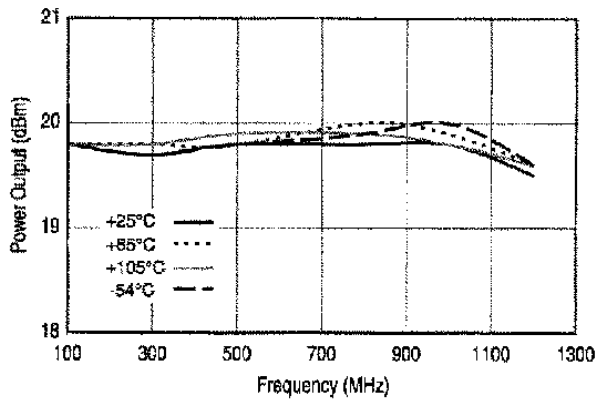
Small Signal Gain



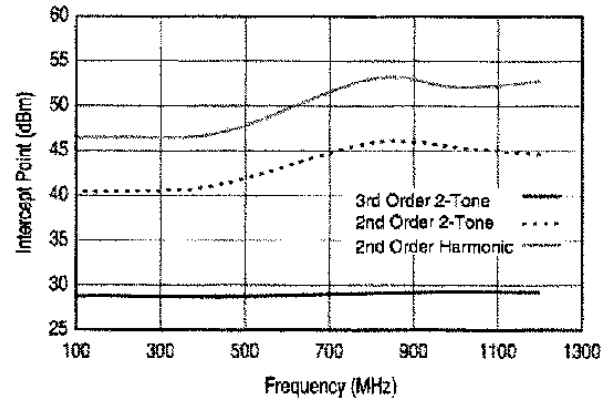
Noise Figure



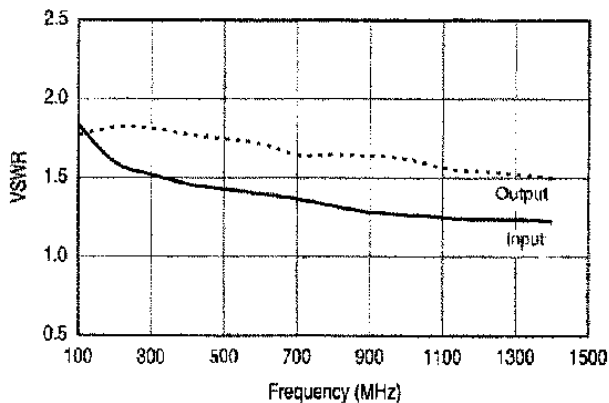
Power Output (1 dB Gain Compression)



Intercept Point



VSWR



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