

Features

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

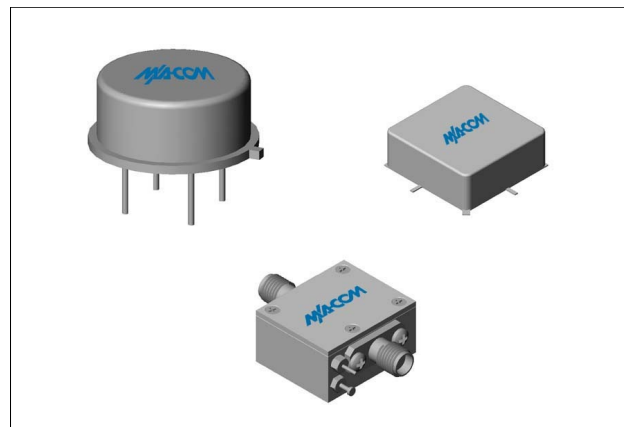
Description

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.

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.

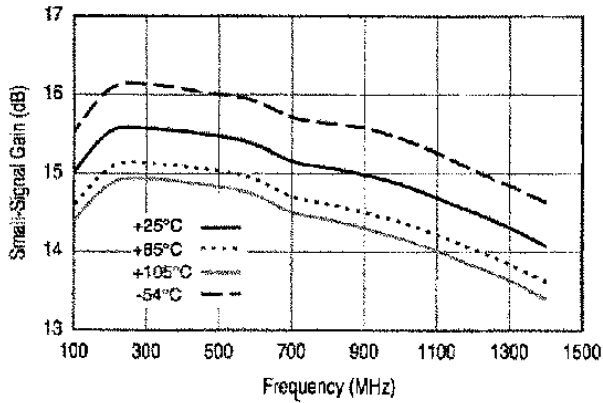
4. MACOM does not recommend sustained operation near these survivability limits.

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

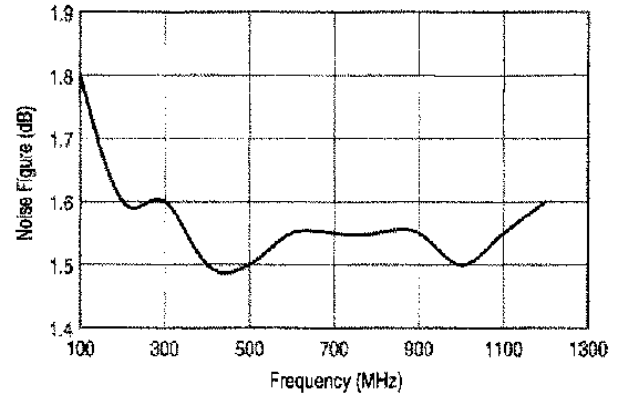
| Parameter | Rating |
|---|--------|
| Thermal Resistance θ_{jc} | 90°C/W |
| Transistor Power Dissipation P_d | 0.3 W |
| Junction Temperature Rise Above Case T_{jc} | +27°C |

Typical Performance Curves at +25°C

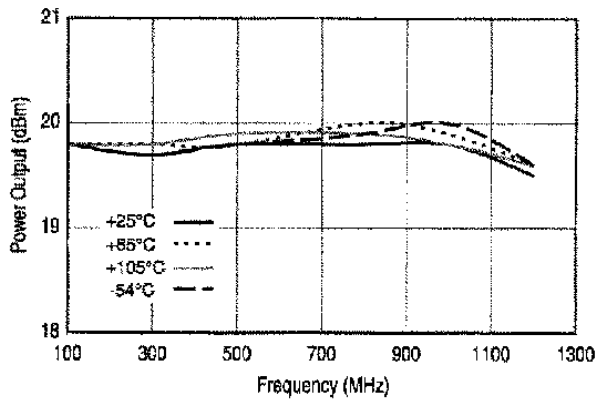
Small Signal Gain



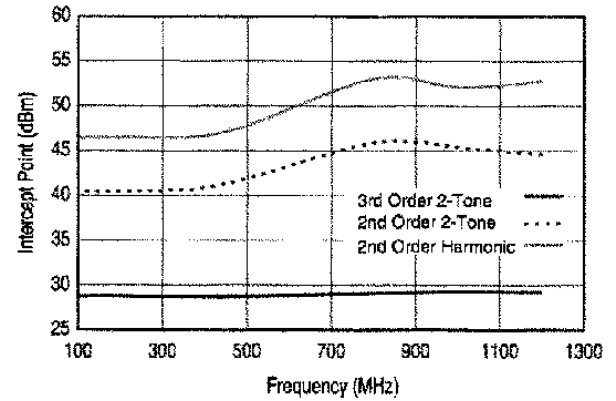
Noise Figure



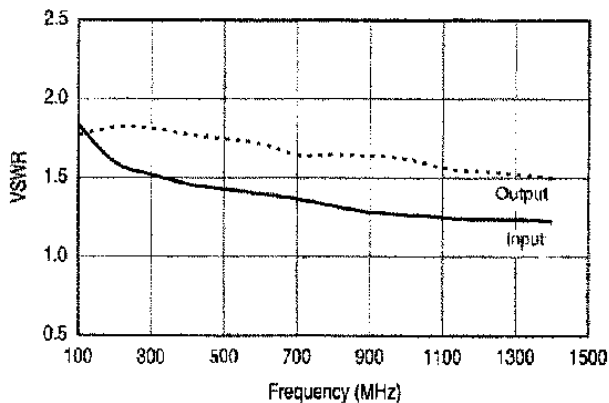
Power Output (1 dB Gain Compression)



Intercept Point



VSWR



A1212 / SMA1212 / CA1212

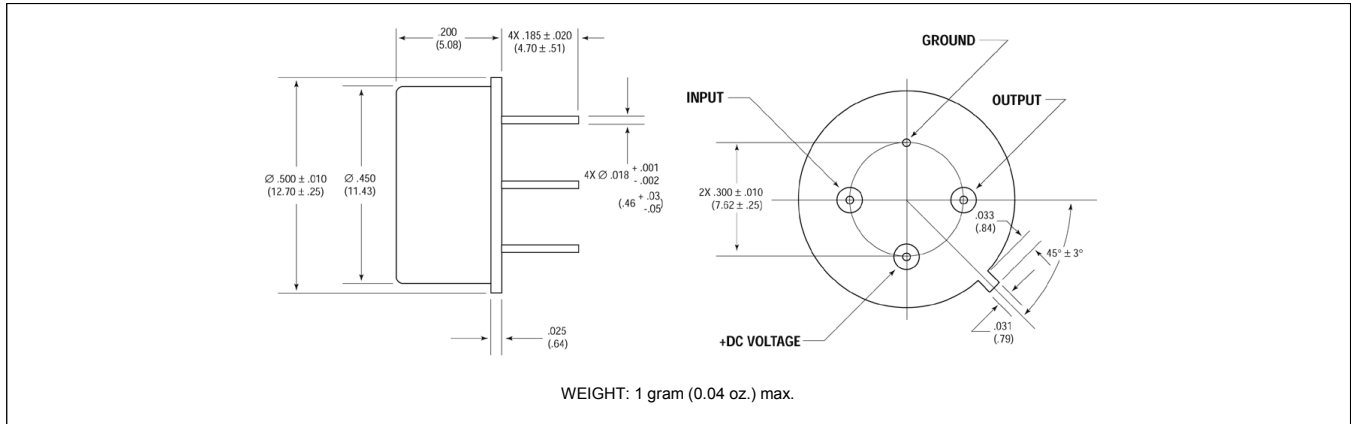


Cascadable Amplifier
100 - 1200 MHz

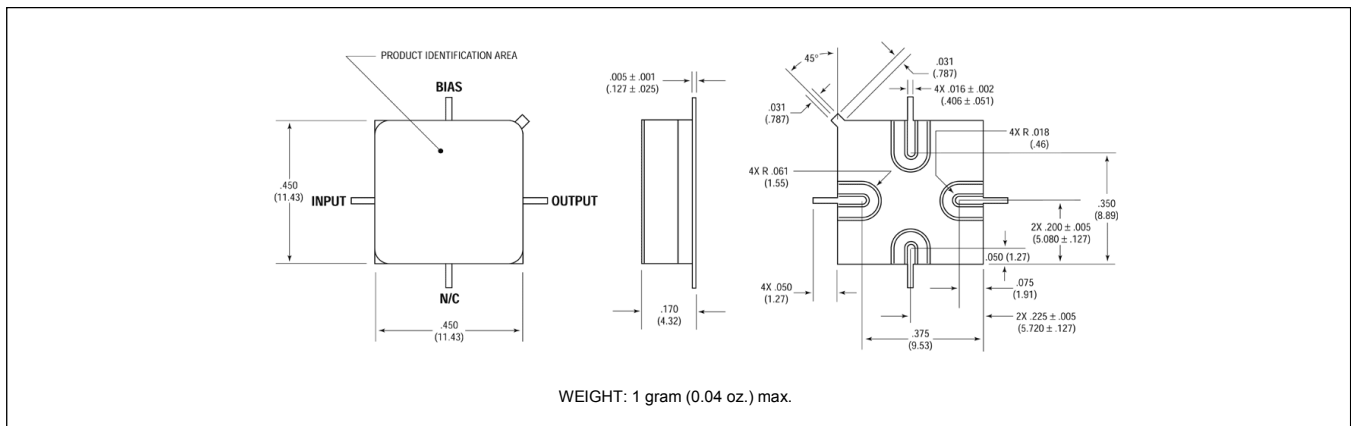
Rev. V4

Outline Drawings⁵

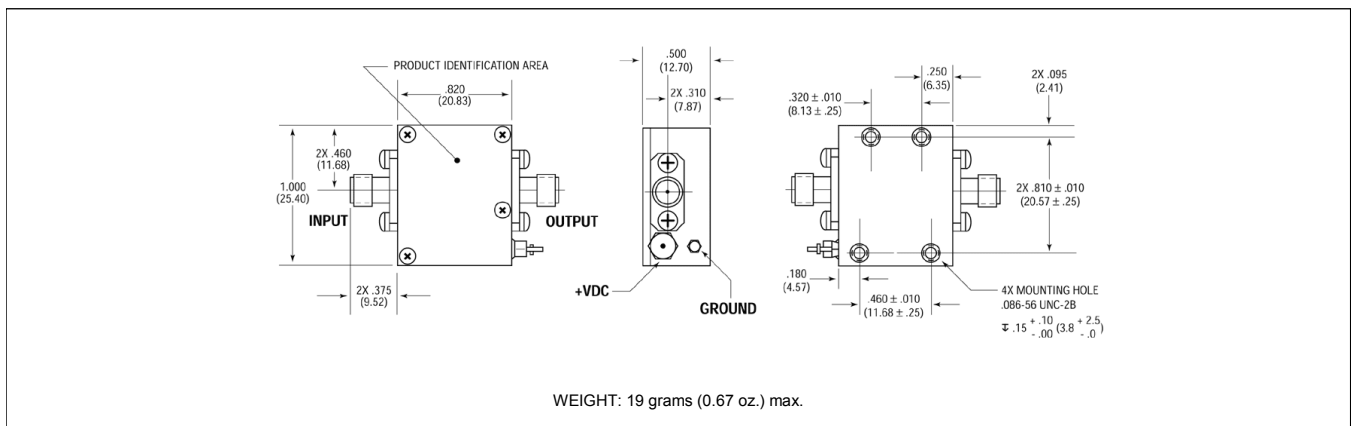
TO-8



Surface Mount



SMA Connectorized



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

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