

Features

- WIDE BANDWIDTH: 1.0 to 4.0 GHz (TYP.)
- HIGH GAIN: 18 dB (TYP.)
- MEDIUM OUTPUT POWER: +15.5 dBm (TYP.)
- LOW NOISE FIGURE: 3.5 dB (TYP.)

Description

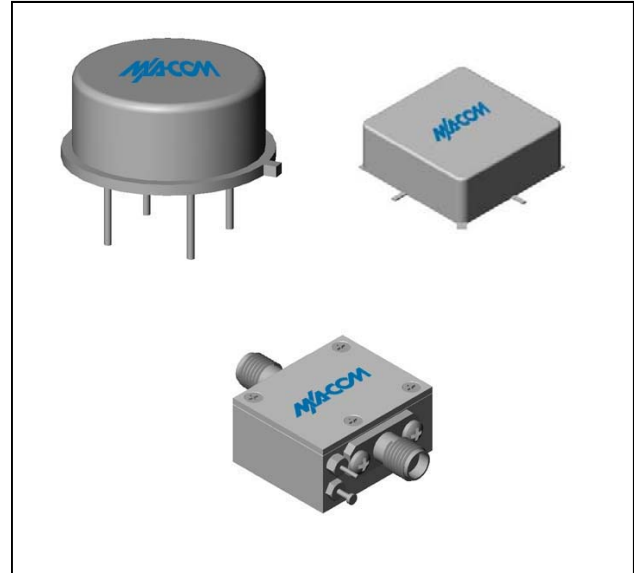
The A4012 microwave amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

| Part Number | Package |
|--------------------|----------------------|
| A4012 | TO-8 |
| SMA4012 | Surface Mount |
| MAAM-008738-CA4012 | 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 | GHz | 0.8-4.5 | 1.0-4.0 | 1.0-4.0 |
| Small Signal Gain (min) | dB | 18.0 | 17.5 | 17.0 |
| Gain Flatness (max) | dB | ±0.4 | ±0.6 | ±0.8 |
| Reverse Isolation | dB | 36 | | |
| Noise Figure (max) | dB | 3.5 | 4.0 | 4.5 |
| Power Output @ 1 dB comp. (min) | dBm | 15.5 | 14.5 | 14.0 |
| IP3 | dBm | +26 | | |
| IP2 | dBm | +34 | | |
| Second Order Harmonic IP | dBm | +49 | | |
| VSWR Input / Output (max) | | 1.7:1 / 1.7:1 | 1.9:1 / 1.9:1 | 2.0:1 / 2.0:1 |
| DC Current @ 5 Volts (max) | mA | 65 | 73 | 78 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +125°C |
| Case Temperature | +125°C |
| DC Voltage | +6 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} | 132°C/W |
| Transistor Power Dissipation P_d | 0.171 W |
| Junction Temperature Rise Above Case T_{jc} | +24°C |

* Over temperature performance limits for part number CA4012, guaranteed from 0°C to +50°C only.

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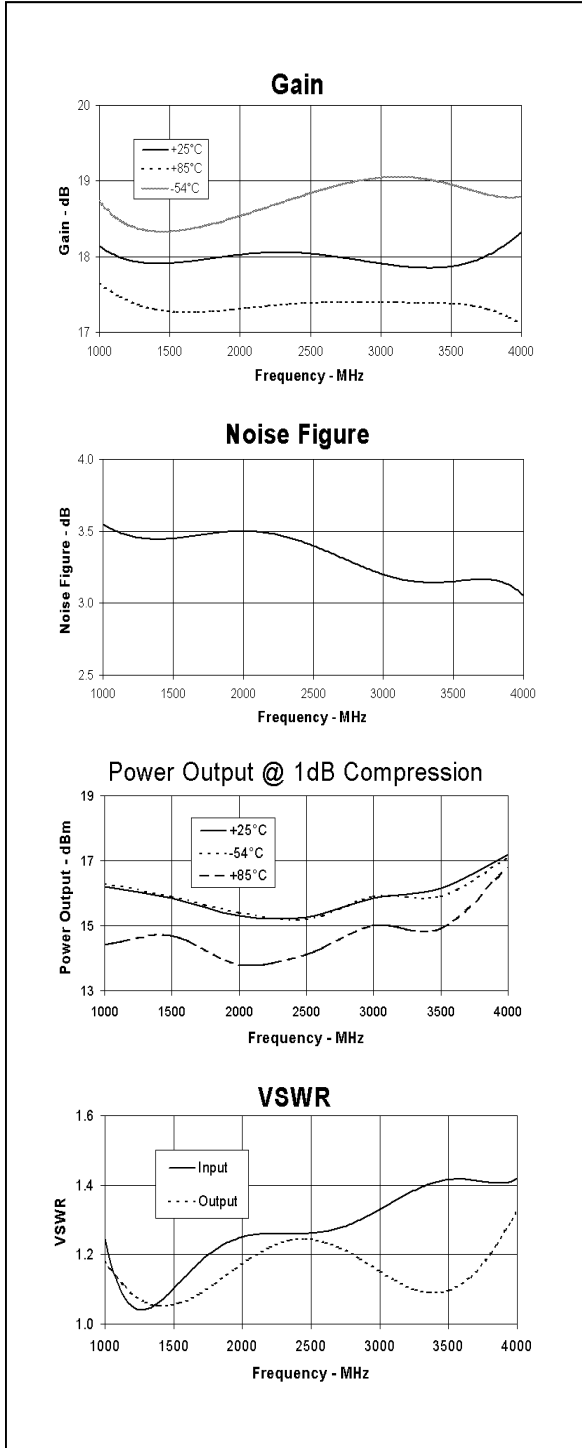
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A4012 / SMA4012

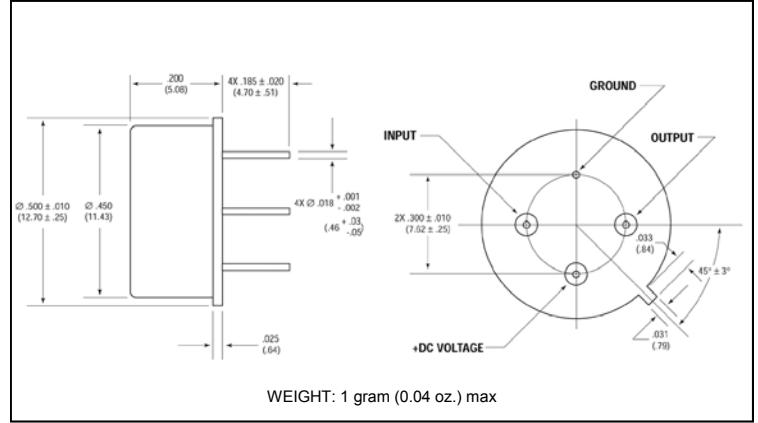
Cascadable Amplifier
1000 to 4000 MHz

Rev. V3

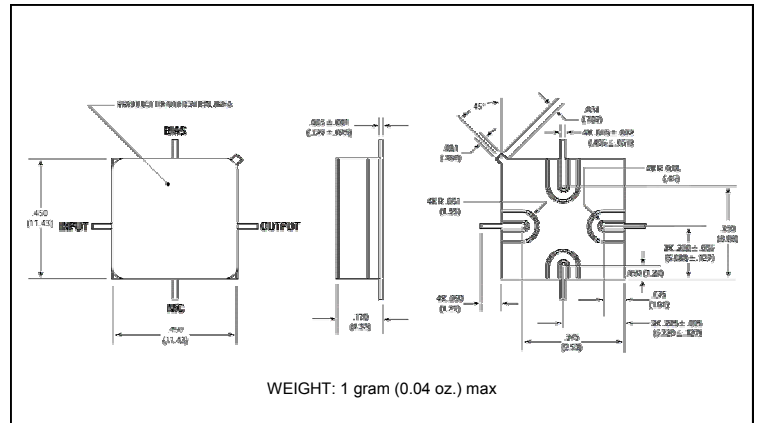
Typical Performance Curves at +25°C



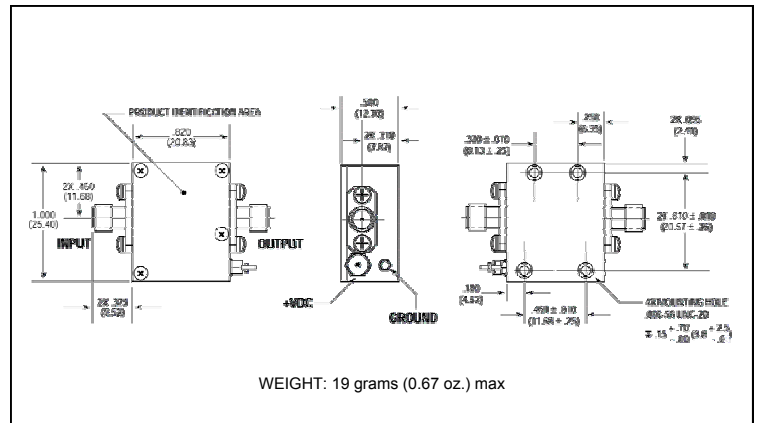
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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