

PA38-2 / SMPA38-2

Cascadable Amplifier
200 to 2600 MHz

Rev. V3

Features

- WIDE BANDWIDTH: 200-2800 MHz (TYP.)
- HIGH OUTPUT LEVEL: +23.5 dBm (TYP.)
- GaAs FET AMPLIFIER
- HIGH THIRD ORDER I.P.: +33 dBm (TYP.)

Description

The PA38-2 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

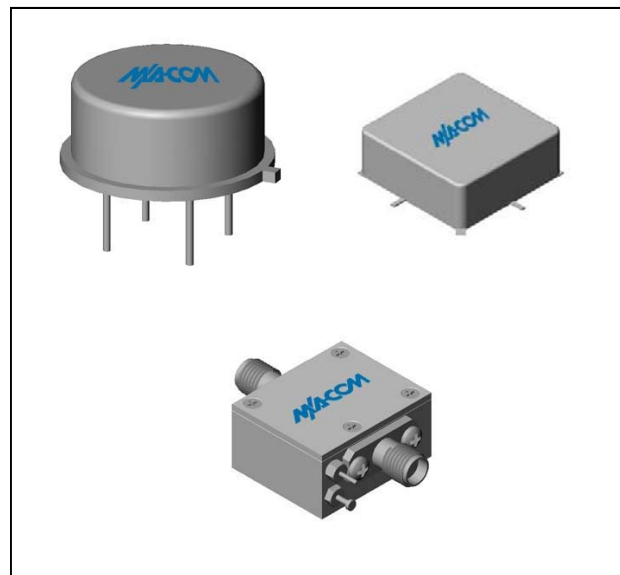
This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

| Part Number | Package |
|-------------|-------------------|
| PA38-2 | TO-8 |
| SMPA38-2 | Surface Mount |
| CPA38-2 ** | SMA Connectorized |

** The connectorized version is not RoHs compliant.

Product Image



Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +15 V_{DC}$

| Parameter | Units | Typical | Guaranteed | |
|---------------------------------|-------|---------------|---------------|----------------|
| | | 25°C | 0° to 50°C | -54° to +85°C* |
| Frequency | GHz | 0.2-2.8 | 0.2-2.6 | 0.2-2.6 |
| Small Signal Gain (min) | dB | 8.5 | 7.5 | 7.0 |
| Gain Flatness (max) | dB | ±0.2 | ±0.7 | ±1.0 |
| Reverse Isolation | dB | 16 | | |
| Noise Figure (max) | dB | 4.5 | 5.5 | 6.0 |
| Power Output @ 1 dB comp. (min) | dBm | 23.5 | 22.0 | 21.4 |
| IP3 | dBm | +33 | | |
| IP2 | dBm | +50 | | |
| Second Order Harmonic IP | dBm | +55 | | |
| VSWR Input / Output (max) | | 1.2:1 / 1.5:1 | 1.9:1 / 1.9:1 | 2.0:1 / 2.0:1 |
| DC Current @ 15 Volts (max) | mA | 150 | 158 | 160 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +125°C |
| Case Temperature | 85°C |
| DC Voltage | +16 V |
| Continuous Input Power | +17 dBm |
| Short Term Input power (1 minute max.) | 100 mW |
| Peak Power (3 μsec max.) | 1 W |
| "S" Series Burn-In Temperature (case) | 85°C |

Thermal Data: $V_{CC} = +15 V_{DC}$

| Parameter | Rating |
|---|---------|
| Thermal Resistance θ_{jc} | 125°C/W |
| Transistor Power Dissipation P_d | 0.578 W |
| Junction Temperature Rise Above Case T_{jc} | 72°C |

* Over temperature performance limits for part number CPA38-2, guaranteed from 0°C to +50°C only.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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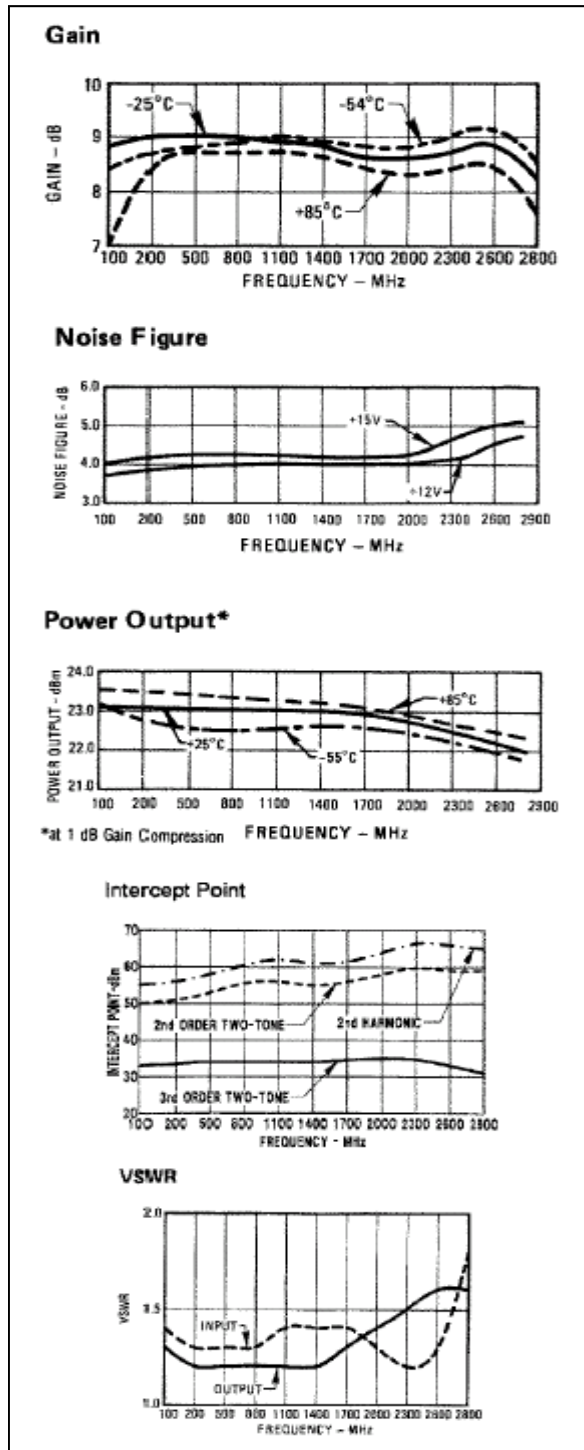
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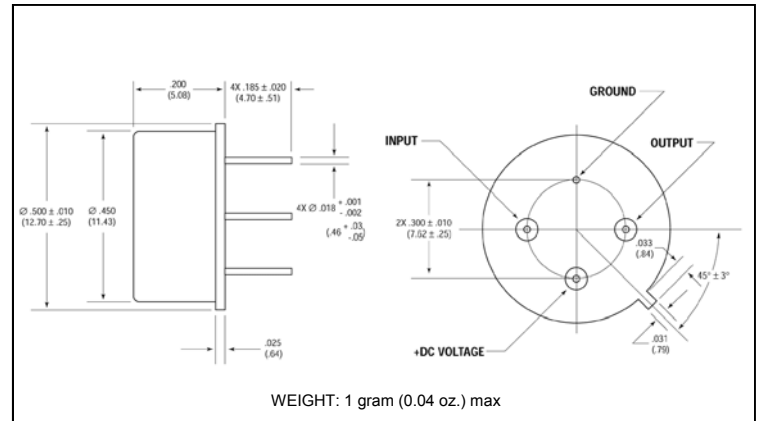
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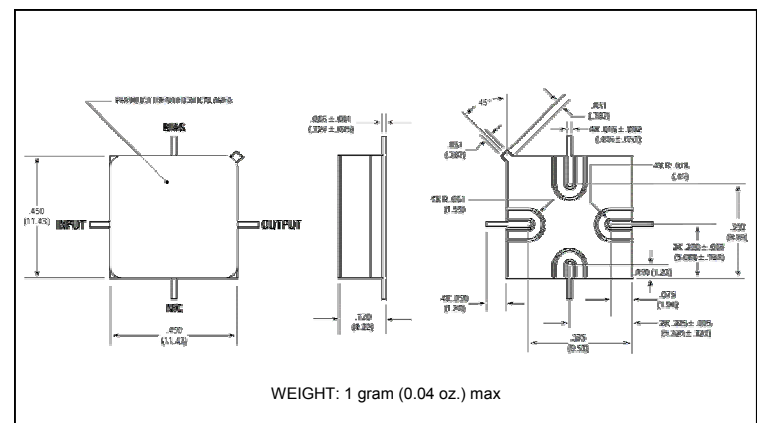
Typical Performance Curves at +25°C



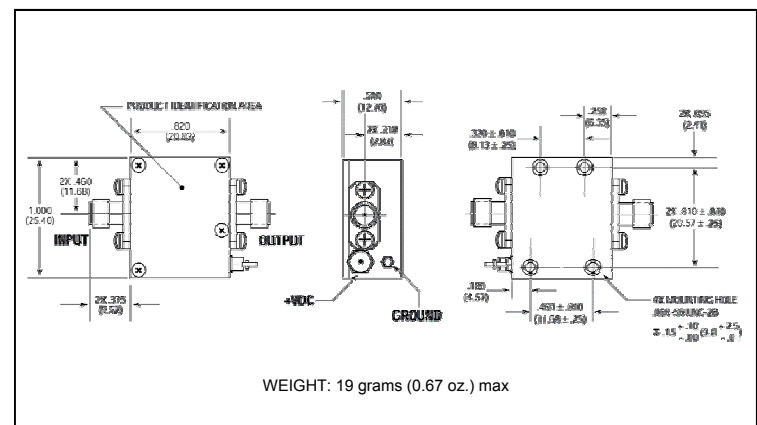
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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