

Cascadable Amplifier 1000 to 4000 MHz

Rev. V1

Features

- ULTRAWIDE BANDWIDTH: 0.8-4.2 GHz (TYP.)
- HIGH OUTPUT LEVEL: +24 dBm (TYP.)
- HIGH GAIN: 16.0 dB (TYP.)
- GaAs FET AMPLIFIER

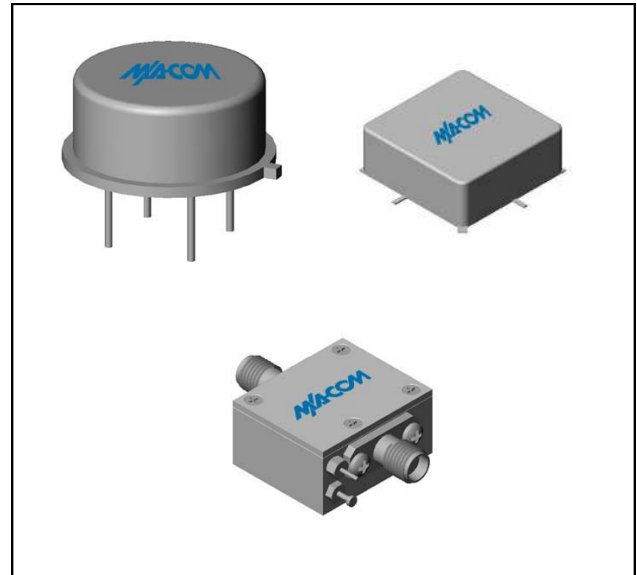
Description

The PA48 power 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.

Product Image



Ordering Information

| Part Number | Package |
|-------------|-------------------|
| PA48 | TO-8B |
| SMPA48 | Surface Mount |
| CPA48 | SMA Connectorized |

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 | 0.8-4.2 | 1.0-4.0 | 1.0-4.0 |
| Small Signal Gain (min) | dB | 16.0 | 14.0 | 13.5 |
| Gain Flatness (max) | dB | ±0.4 | ±0.7 | ±0.8 |
| Reverse Isolation | dB | 33 | | |
| Noise Figure (max) | dB | 5.5 | 7.0 | 7.5 |
| Power Output @ 1 dB comp. (min) | dBm | 24.0 | 22.5 | 21.5 |
| IP3 | dBm | +34 | | |
| IP2 | dBm | +45 | | |
| Second Order Harmonic IP | dBm | +55 | | |
| VSWR Input / Output (max) | | 1.7:1 / 1.6:1 | 2.0:1 / 1.9:1 | 2.2:1 / 2.1:1 |
| DC Current @ 15 Volts (max) | mA | 225 | 235 | 245 |

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.) | 0.25 W |
| "S" Series Burn-In Temperature (case) | +85°C |

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

| Parameter | Rating |
|---|--------|
| Thermal Resistance θ_{jc} | 75°C/W |
| Transistor Power Dissipation P_d | 1.264W |
| Junction Temperature Rise Above Case T_{jc} | +95°C |

1 * Over temperature performance limits for part number CPA48, guaranteed from 0°C to +50°C only.

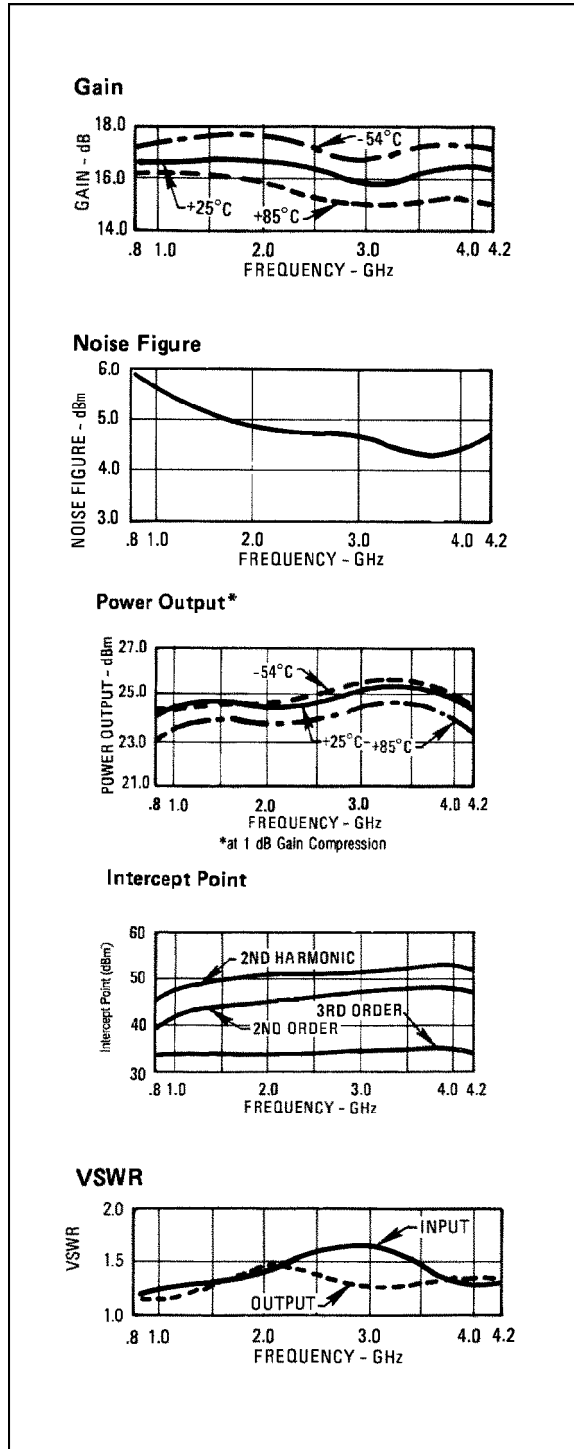
PA48 / SMPA48



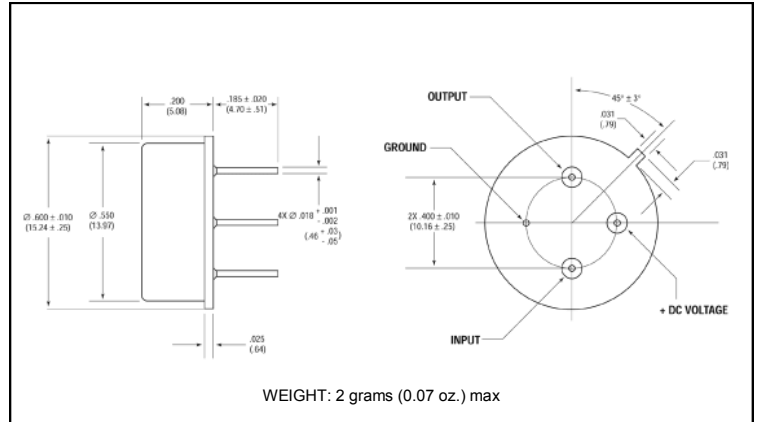
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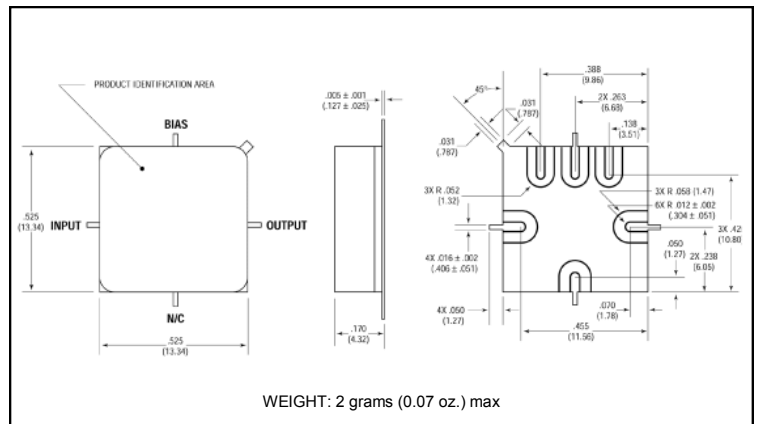
Typical Performance Curves at +25°C



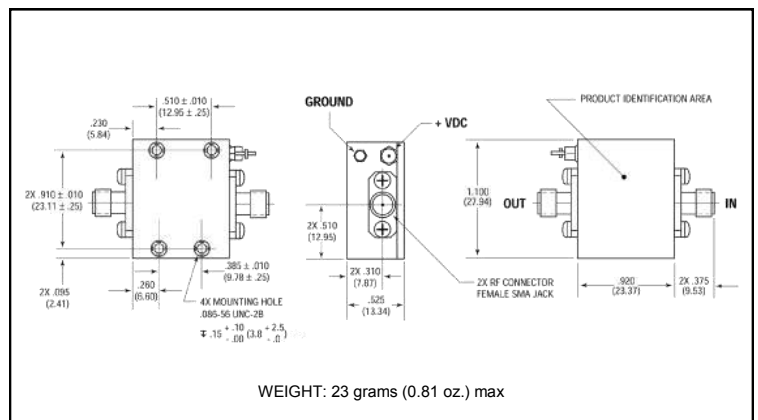
Outline Drawing: TO-8B *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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