

Cascadable Amplifier 10 to 1000 MHz

Rev. V2

Features

- HIGH GAIN - THREE STAGES: 37.0 dB (TYP.)
- LOW NOISE: <3.5 dB (TYP.)
- MEDIUM OUTPUT LEVEL: >+15.5 dBm (TYP.)
- HIGH REVERSE ISOLATION: >50 dB (TYP.)

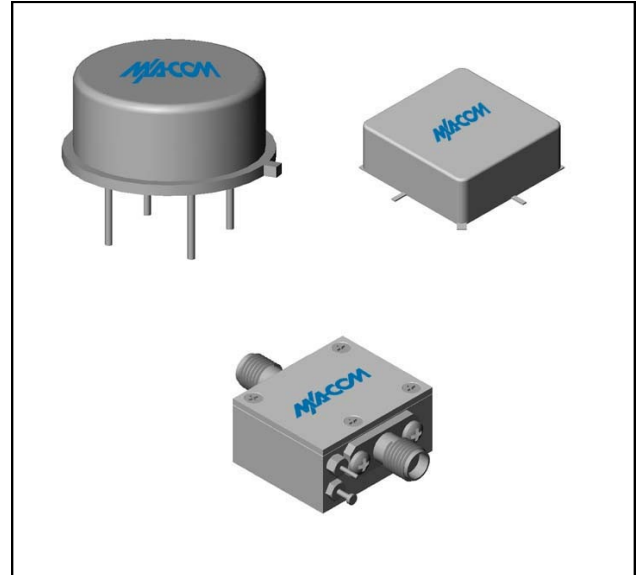
Description

The RA66 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

This 3 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

Both TO-8B and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Product Image



Ordering Information

| Part Number | Package |
|-------------|-------------------|
| RA66 | TO-8 |
| SMRA66 | Surface Mount |
| CRA66 ** | SMA Connectorized |

** The connectorized version is not RoHs compliant.

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 | MHz | 5-1000 | 10-1000 | 10-1000 |
| Small Signal Gain (min) | dB | 37.0 | 35.0 | 34.0 |
| Gain Flatness (max) | dB | ±0.6 | ±1.0 | ±1.3 |
| Reverse Isolation | dB | 45 | | |
| Noise Figure (max) | dB | 3.5 | 4.5 | 5.0 |
| Power Output @ 1 dB comp. (min) | dBm | 15.5 | 14.0 | 13.0 |
| IP3 | dBm | +30 | | |
| IP2 | dBm | +45 | | |
| Second Order Harmonic IP | dBm | +55 | | |
| VSWR Input / Output (max) | | 1.3:1 / 1.3:1 | 1.8:1 / 1.8:1 | 2.0:1 / 2.0:1 |
| DC Current @ 15 Volts (max) | mA | 81 | 85 | 87 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|--|------------------|
| Storage Temperature | -62°C to +125°C |
| Case Temperature | 125°C |
| DC Voltage | +17 V |
| Continuous Input Power | +6 dBm |
| Short Term Input power (1 minute max.) | 100 mW |
| Peak Power (3 µsec max.) | 0.5 W |
| "S" Series Burn-In Temperature (case) | 125°C |

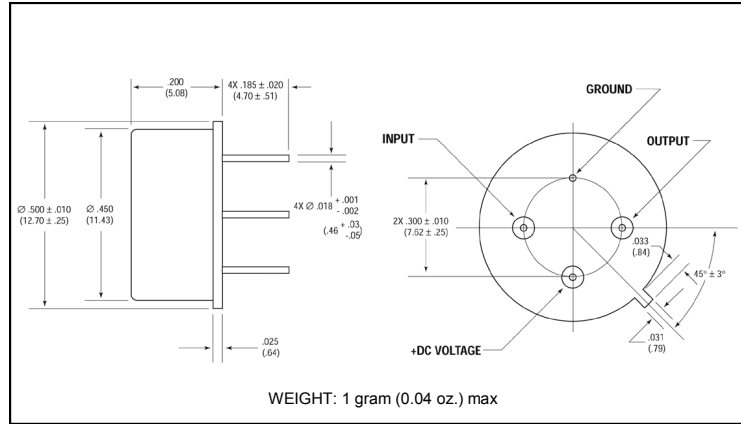
Thermal Data: $V_{CC} = +15 V_{DC}$

| Parameter | Rating |
|---|---------|
| Thermal Resistance θ_{jc} | 131°C/W |
| Transistor Power Dissipation P_d | 0.321 W |
| Junction Temperature Rise Above Case T_{jc} | 42°C |

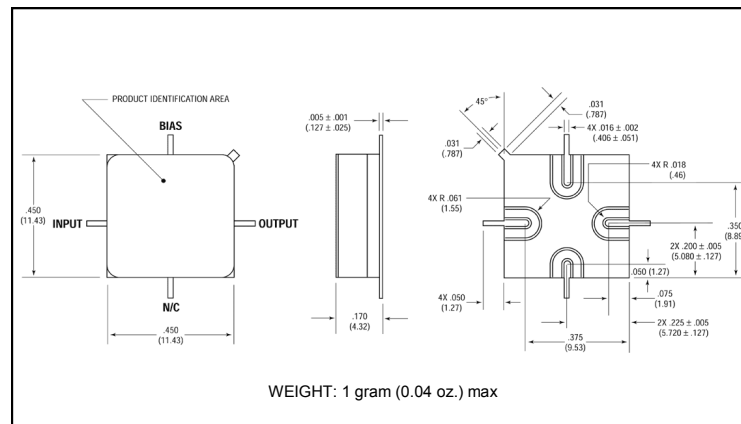
* Over temperature performance limits for part number CRA66, guaranteed from 0°C to +50°C only.

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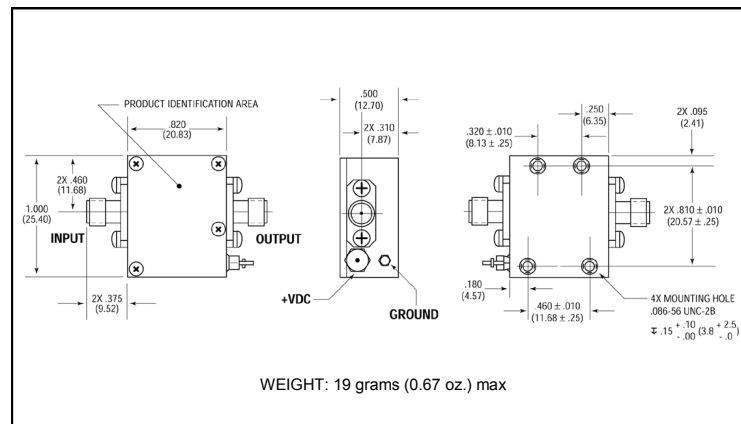
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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