

Cascadable Amplifier 1000 to 5000 MHz

RA53 / SMRA53

V2

Features

- AVAILABLE IN SURFACE MOUNT
- ULTRAWIDE BANDWIDTH: 0.8-5.0 GHz (TYP.)
- HIGH GAIN: 21.0 dB (TYP.)
- LOW NOISE: 4.5 dB (TYP.)
- MEDIUM OUTPUT POWER: +11.5 dBm (TYP)

Description

The RA53 microwave amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

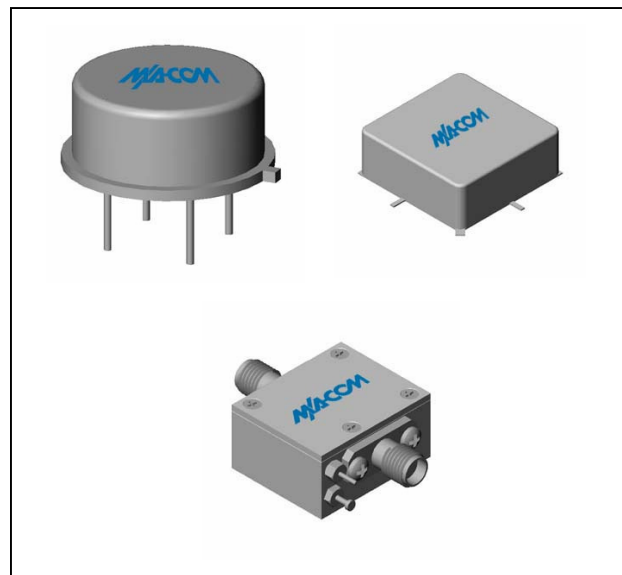
This two stage GaAs FET feedback amplifier design displays impressive performance characteristics over a broadband frequency range.

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

Ordering Information

| Part Number | Package |
|-------------|-------------------|
| RA53 | TO-8B |
| SMRA53 | Surface Mount |
| CRA53 | SMA Connectorized |

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 | MHz | 800-5000 | 1000-5000 | 1000-5000 |
| Small Signal Gain (min) | dB | 21.0 | 19.5 | 18.0 |
| Gain Flatness (max) | dB | ±0.7 | ±0.9 | ±1.2 |
| Noise Figure (max) | dB | 4.5 | 5.3 | 5.8 |
| Power Output @ 1 dB comp. (min) | dBm | +11.5 | +10.5 | +9.5 |
| VSWR Input / Output (max) | | 1.7:1 | 2.1:1 | 2.3:1 |
| DC Current @ 5 Volts (max) | mA | 115 | 140 | 150 |

Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|---|------------------|
| Storage Temperature | -64°C to +125°C |
| Case Temperature | 85°C |
| DC Voltage | +6 V |
| Continuous Input Power | +7 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: $V_{CC} = +5 V_{DC}$

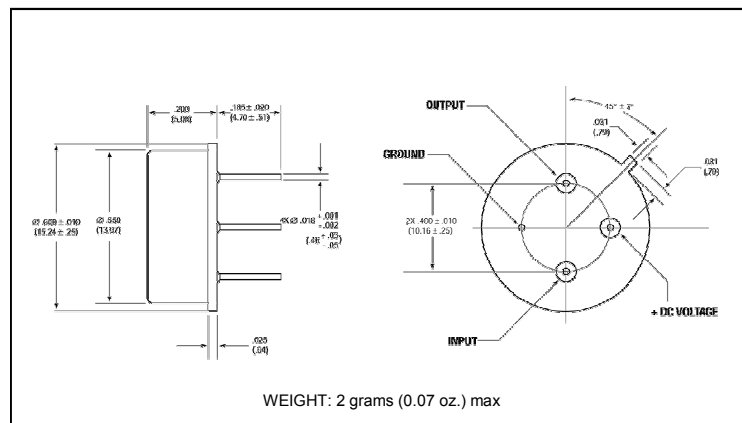
| Parameter | Rating |
|--|----------|
| Thermal Resistance θ_{jc} | 97.8°C/W |
| Transistor Power Dissipation P_d | 0.176 W |
| Junction Temperature Rise Above Case T_{jc} | 17°C |

* Over temperature performance limits for part number CRA53, guaranteed from 0°C to +50°C only.

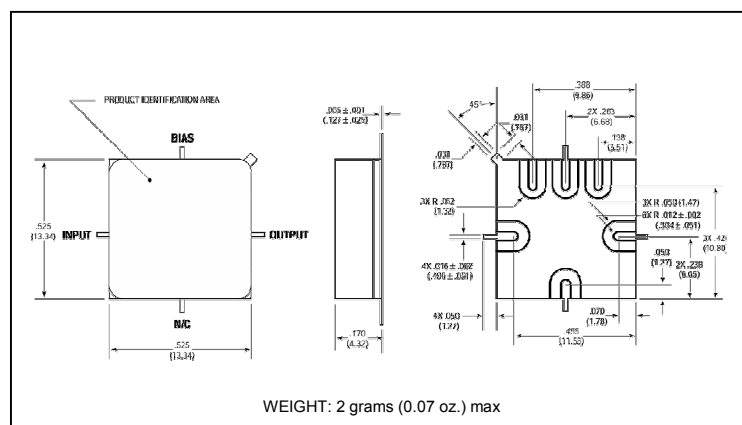
RA53 / SMRA53

V2

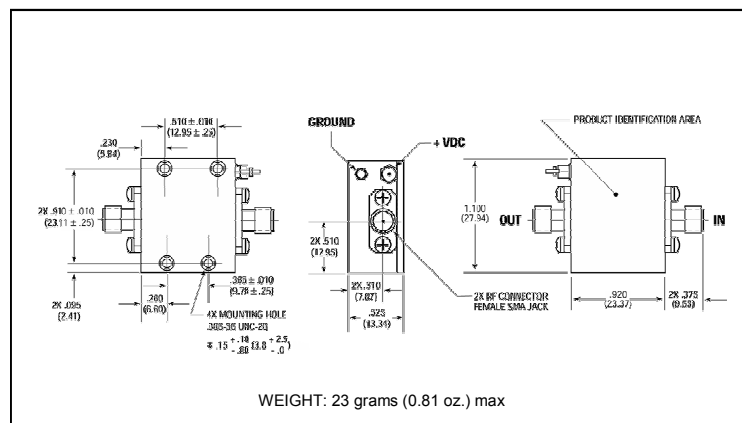
Outline Drawing: TO-8B^{*}



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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