

Cascadable Amplifier 100 to 2000 MHz

Rev. V4

Features

- HIGH GAIN-THREE STAGES: 24.0 dB (TYP.)
- LOW VSWR: 1.4:1 (TYP.)
- MEDIUM OUTPUT LEVEL: +13.0 dBm (TYP.)
- WIDE BANDWIDTH: 50-2100 MHz (TYP.)

Description

The RA36 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.

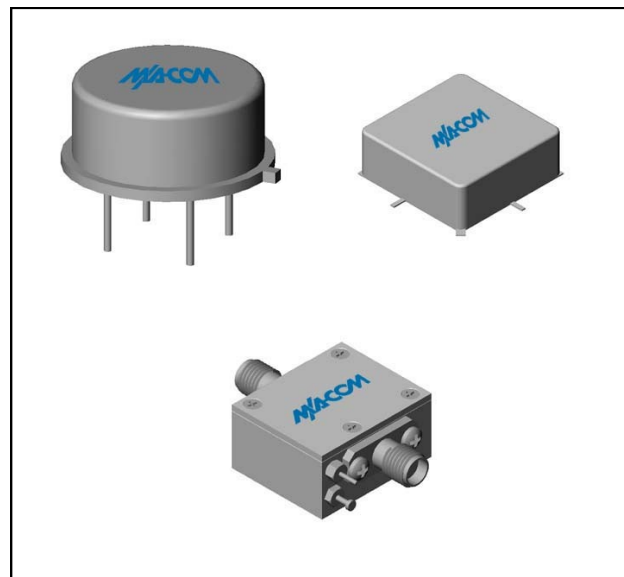
Both TO-8B and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

Part Number	Package
RA36	TO-8B
SMRA36	Surface Mount
CRA36 **	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	MHz	50-2100	0.1-2.0 GHz	0.1-2.0 GHz
Small Signal Gain (min)	dB	24.0	23.0	22.0
Gain Flatness (max)	dB	±0.5	±0.9	±1.0
Reverse Isolation	dB	40		
Noise Figure (max)	dB	5.5	6.5	7.0
Power Output @ 1 dB comp. (min)	dBm	13.0	12.0	11.5
IP3	dBm	+22		
IP2	dBm	+34		
Second Order Harmonic IP	dBm	+40		
VSWR Input / Output (max)		1.4:1 / 1.4:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	76	81	85

Absolute Maximum Ratings

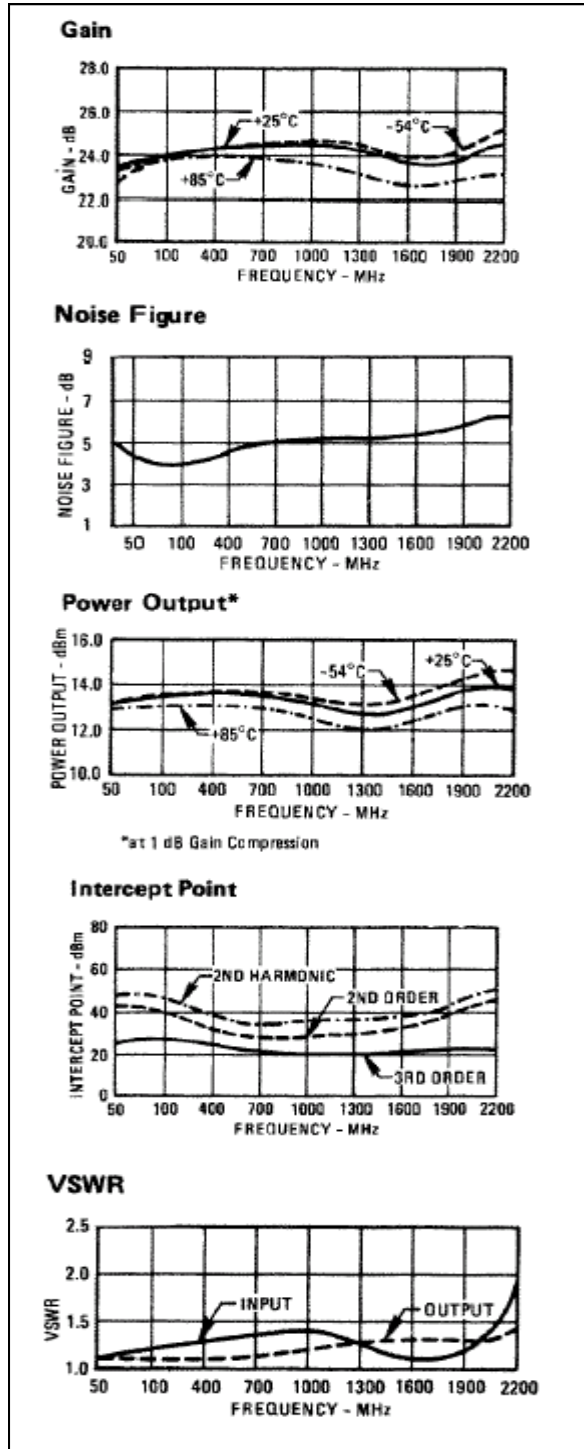
Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+10 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	125°C

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

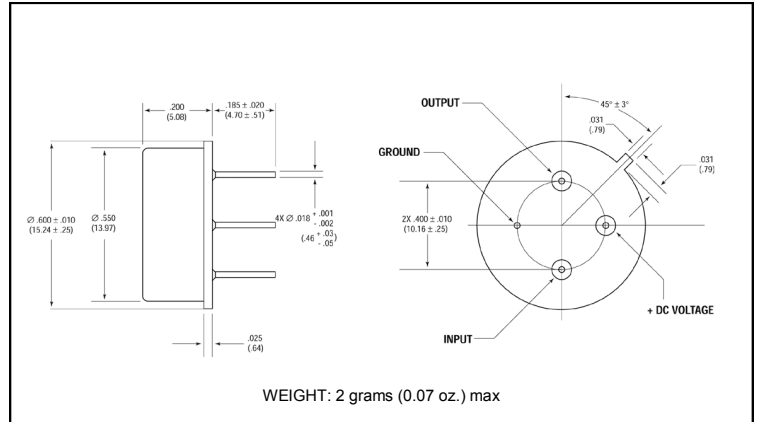
Parameter	Rating
Thermal Resistance θ_{jc}	160°C/W
Transistor Power Dissipation P_d	0.287 W
Junction Temperature Rise Above Case T_{jc}	46°C

* Over temperature performance limits for part number CRA36, guaranteed from 0°C to +50°C only.

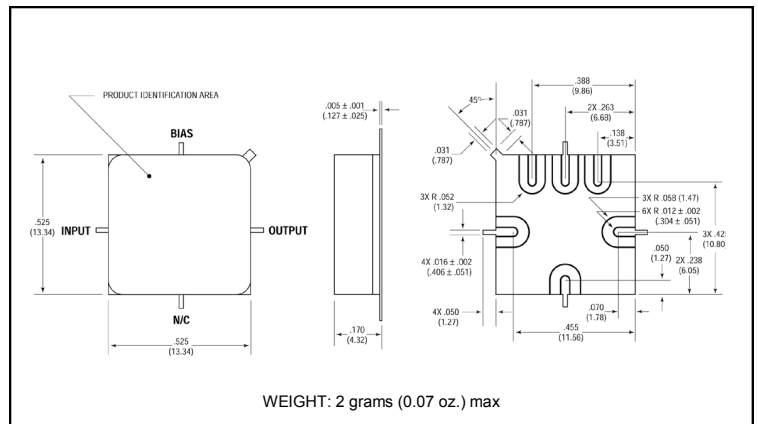
Typical Performance Curves at +25°C



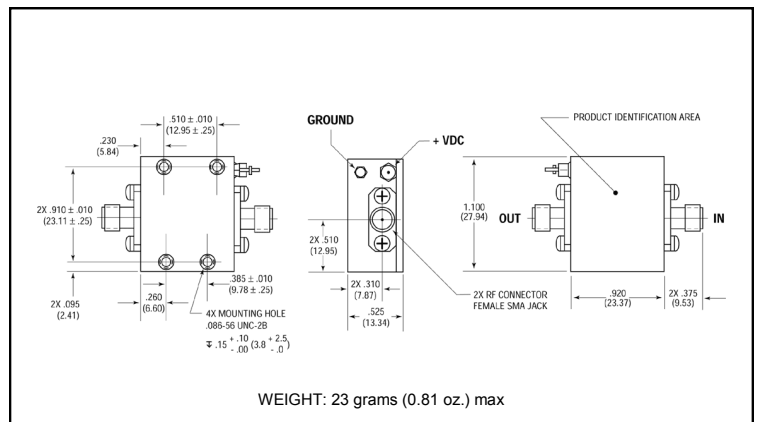
Outline Drawing: TO-8B *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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