

# RA36 / SMRA36

## Cascadable Amplifier 100 to 2000 MHz

Rev. V3

### 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.

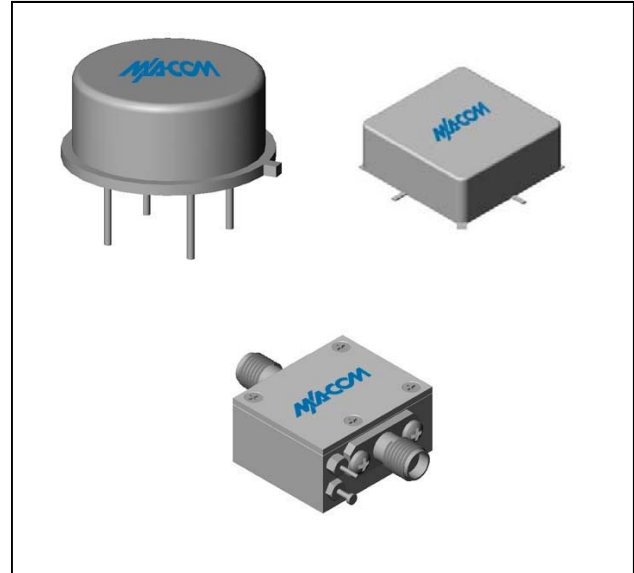
Both TO-8B and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### 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 $\theta_{jc}$	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.

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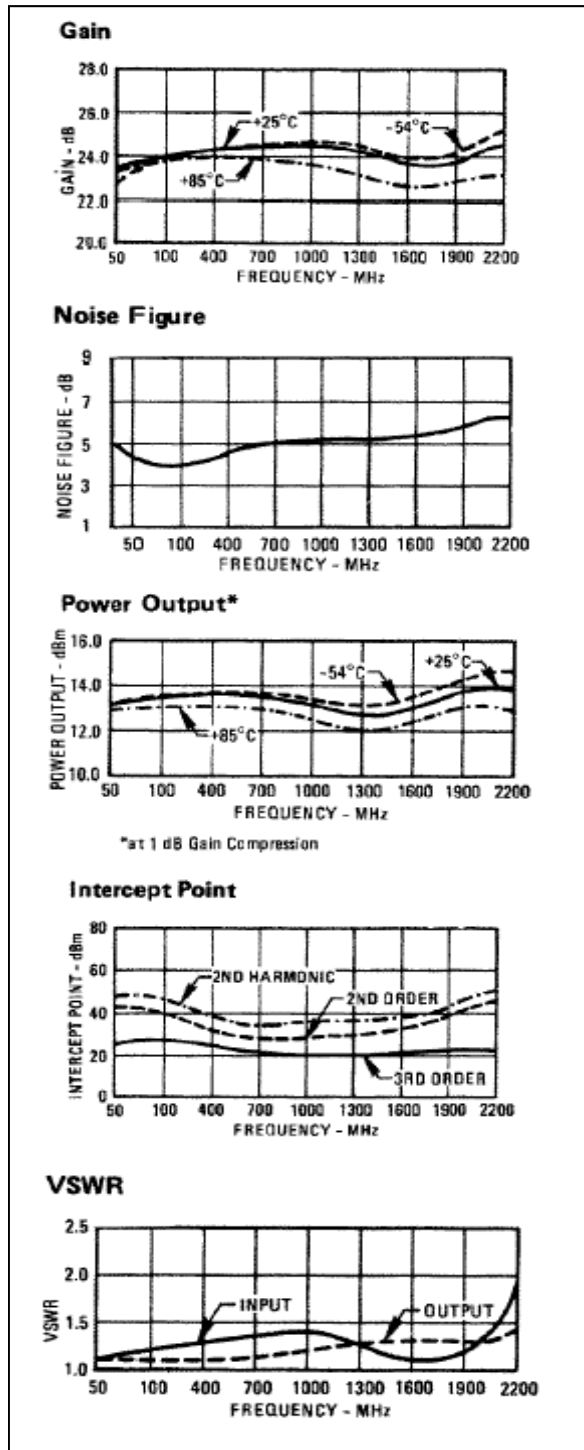
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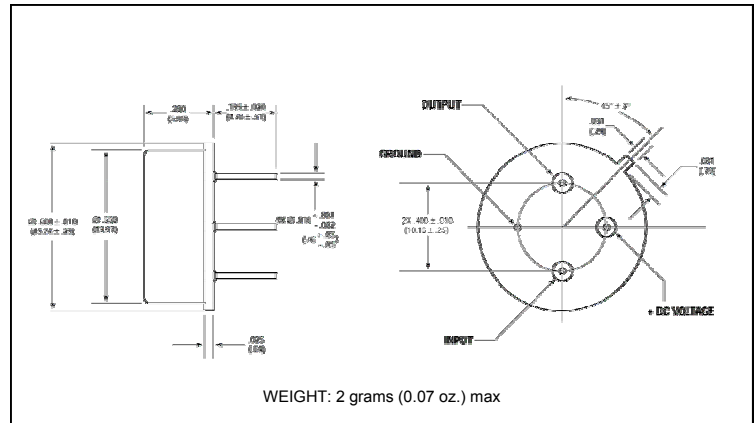
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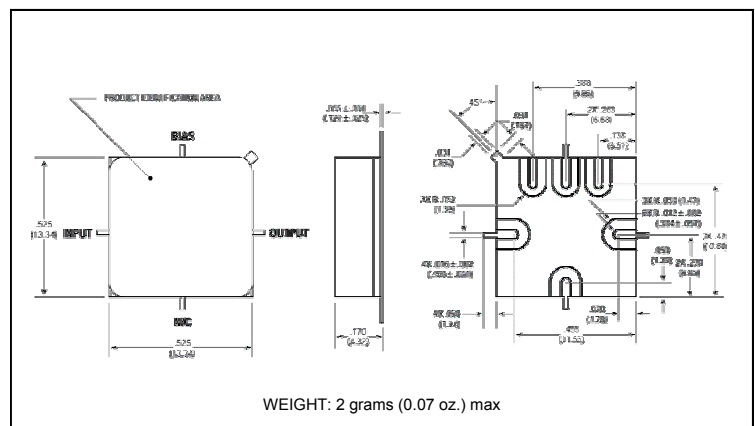
## Typical Performance Curves at +25°C



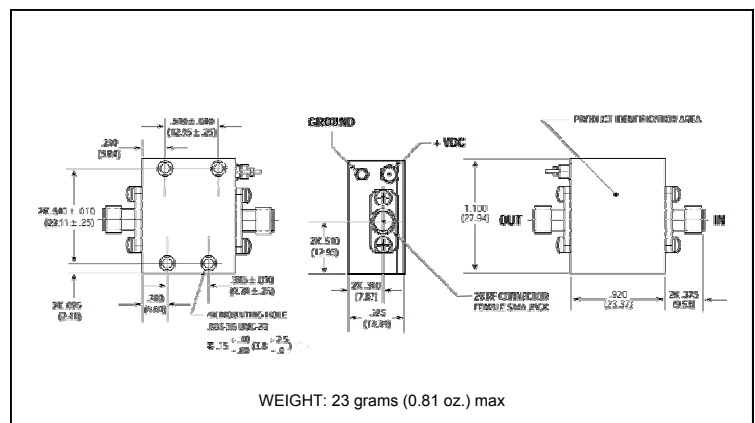
## Outline Drawing: TO-8B \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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

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