RA36 / SMRA36

Cascadable Amplifier
100 to 2000 MHz

Rev. V3

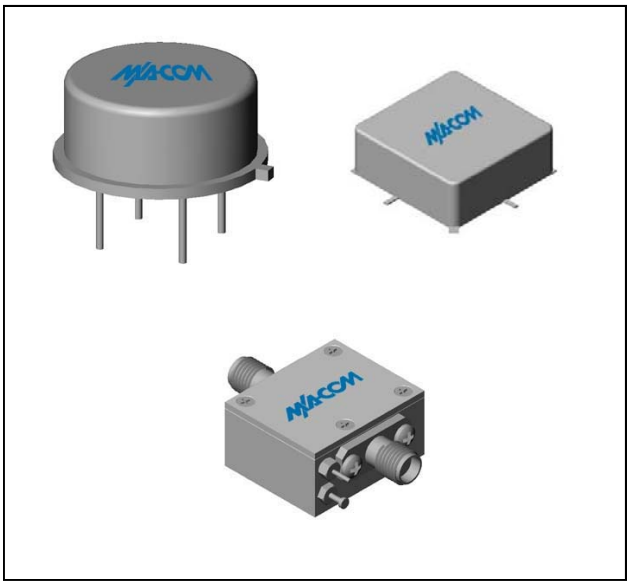
Features

- 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.

Product Image



Ordering Information

Part Number	Package
RA36	TO-8B
SMRA36	Surface Mount
CRA36 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

Electrical Specifications: Z_0 = 50Ω, V_{CC} = +15 V_{DC}

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
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

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

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	125ºC
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)	125ºC

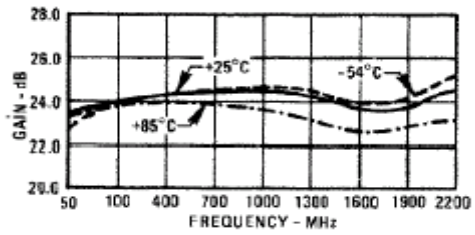
Thermal Data: V_{CC} = +15 V_{DC}

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

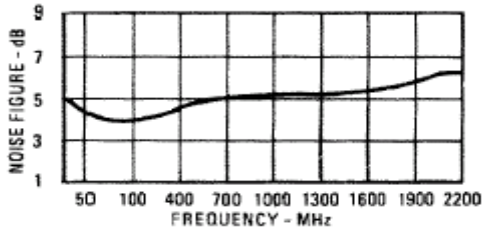
• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

Typical Performance Curves at +25°C

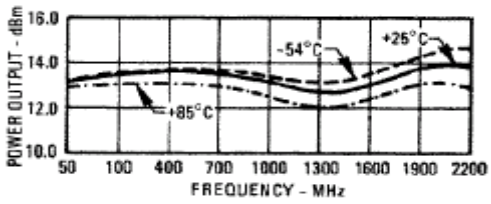
Gain



Noise Figure

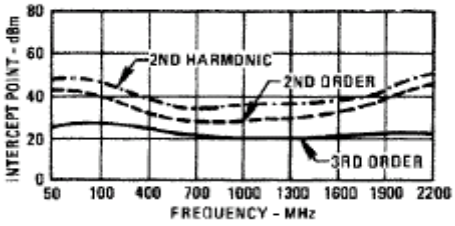


Power Output*

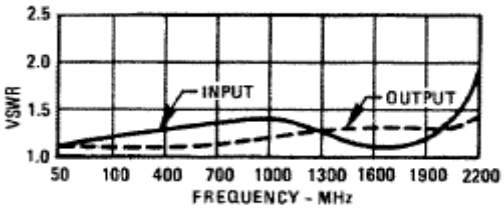


*at 1 dB Gain Compression

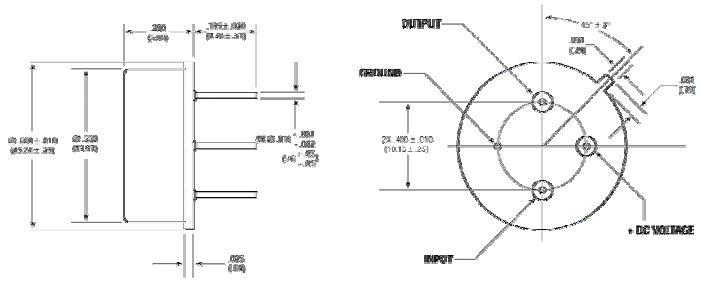
Intercept Point



VSWR

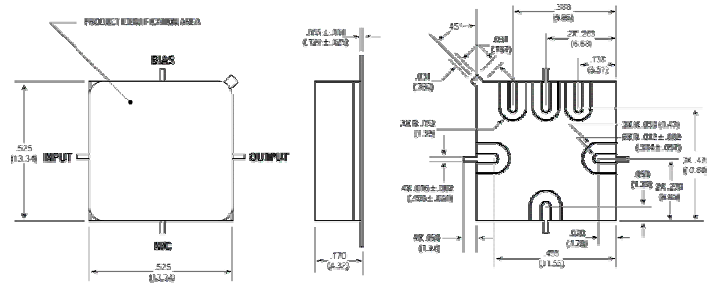


Outline Drawing: TO-8B *



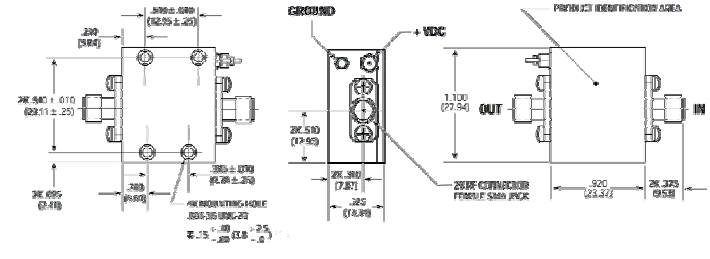
WEIGHT: 2 grams (0.07 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 2 grams (0.07 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 23 grams (0.81 oz.) max

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