

## Cascadable Amplifier 10 to 1000 MHz

Rev. V3

### Features

- AVAILABLE IN SURFACE MOUNT
- HIGH GAIN-TWO STAGES: 25 dB (TYP.)
- HIGH OUTPUT POWER +23 dBm (TYP.)
- HIGH THIRD ORDER I.P. +34 dBm (TYP.)

### Description

The RA69 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

This 2 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
RA69	TO-8B
SMRA69	Surface Mount
CRA69 **	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	5-1000	10-1000	10-1000
Small Signal Gain (min)	dB	25.0	24.0	23.0
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	33		
Noise Figure (max)	dB	4.5	5.5	6.0
Power Output @ 1 dB comp. (min)	dBm	23.0	20.0	20.0
IP3	dBm	+34		
IP2	dBm	+55		
Second Order Harmonic IP	dBm	+60		
VSWR Input / Output (max)		1.5:1 / 1.5:1	2.0:1 / 2.0:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	130	138	145

### Absolute Maximum Ratings

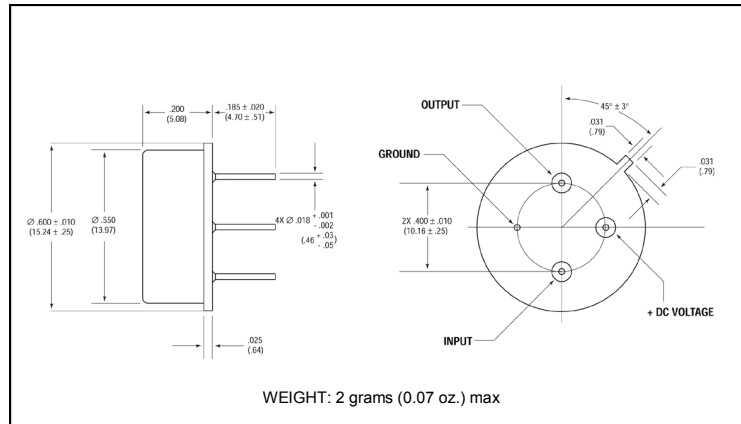
Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	50 mW
Peak Power (3 µsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	125°C

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

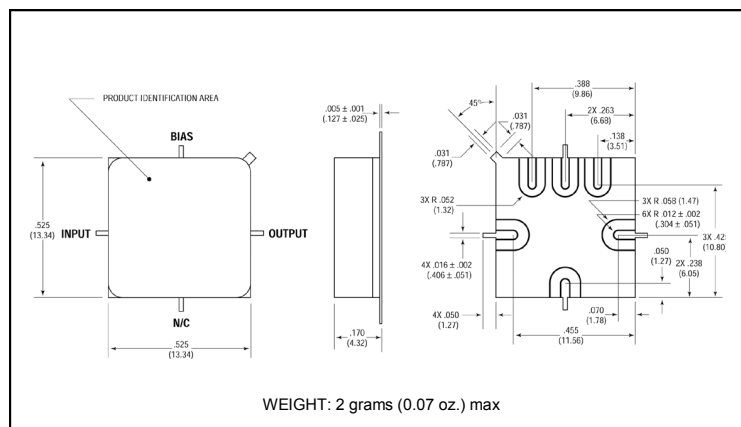
Parameter	Rating
Thermal Resistance $\theta_{jc}$	100°C/W
Transistor Power Dissipation $P_d$	0.865 W
Junction Temperature Rise Above Case $T_{jc}$	87°C

\* Over temperature performance limits for part number CRA69, guaranteed from 0°C to +50°C only.

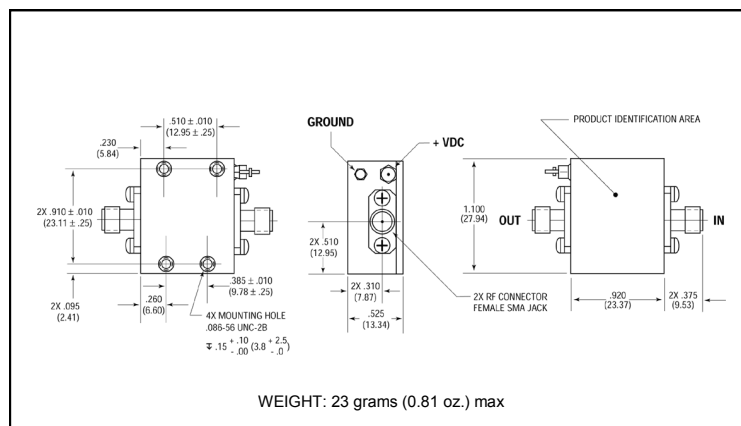
## Outline Drawing: TO-8B \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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