

## Cascadable Amplifier 10 to 250 MHz

Rev. V3

### Features

- LOW NOISE FIGURE: 1.7 dB (TYP.)
- HIGH GAIN: 26.0 dB (TYP.)
- HIGH EFFICIENCY: 16 mA at +5 Vdc
- MEDIUM OUTPUT LEVEL: +14 dBm at +8 Vdc (TYP.)

### Description

The A231 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

The 2 stage silicon bipolar feedback amplifier design displays impressive performance over a broadband frequency range. An isolation transformer is used in the feedback loop, with the benefit of high reverse isolation.

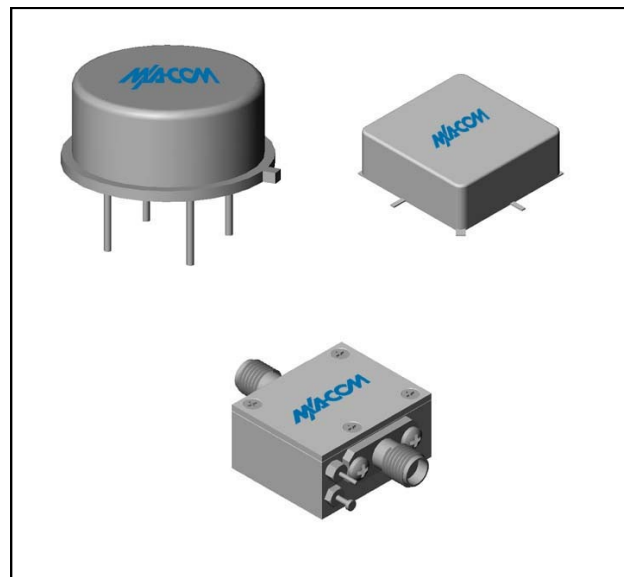
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

Part Number	Package
A231	TO-8
SMA231	Surface Mount
CA231 **	SMA Connectorized

\*\* The connectorized version is not RoHs compliant.

### 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	10-300	10-250	10-250
Small Signal Gain (min)	dB	26.0	25.0	24.0
Gain Flatness (max)	dB	±0.2	±0.5	±0.8
Reverse Isolation	dB	32		
Noise Figure (max)	dB	1.7	2.4	2.8
Power Output @ 1 dB comp. (min)	dBm	10.0	9.0	8.5
IP3	dBm	+22		
IP2	dBm	+25		
Second Order Harmonic IP	dBm	+31		
VSWR Input / Output (max)		1.5:1 / 1.5:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current @ 5 Volts (max)	mA	16	19	21

### Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+10 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: $V_{CC} = +5 V_{DC}$

Parameter	Rating
Thermal Resistance $\theta_{jc}$	184°C/W
Transistor Power Dissipation $P_d$	0.033 W
Junction Temperature Rise Above Case $T_{jc}$	6°C

1 \* Over temperature performance limits for part number CA231, guaranteed from 0°C to +50°C only.



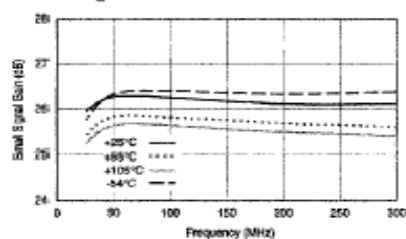
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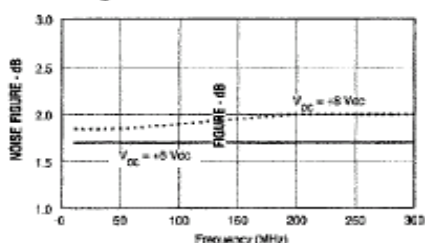
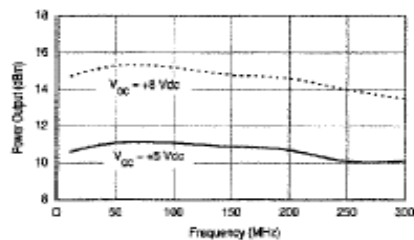
### Typical Performance Curves at +25°C

## Outline Drawing: TO-8 \*

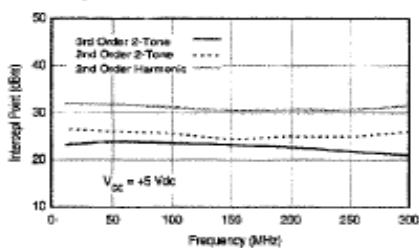
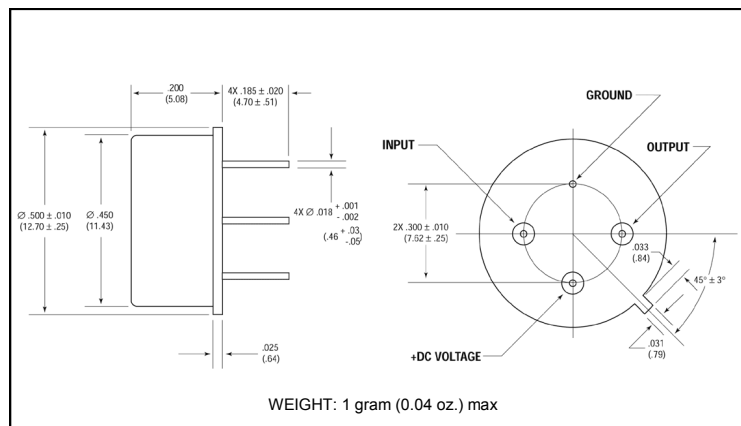
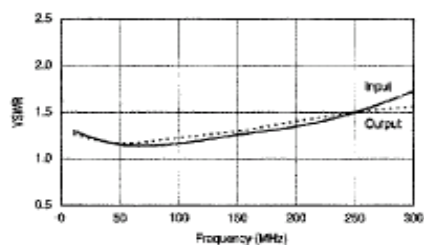
### Small Signal Gain



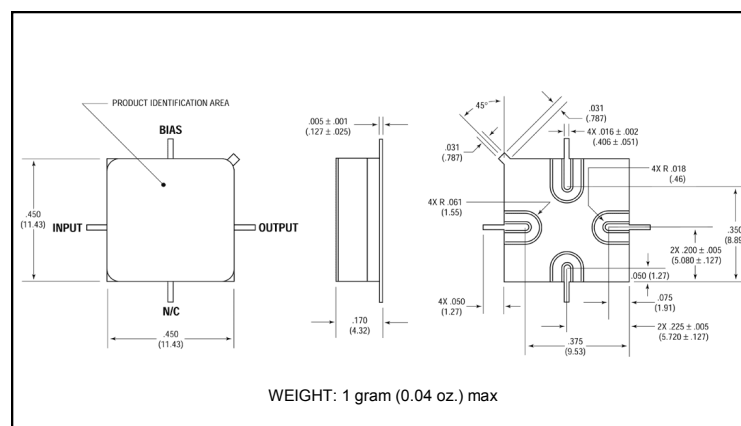
### Noise Figure

**Power Output** (1dB Gain Compression)

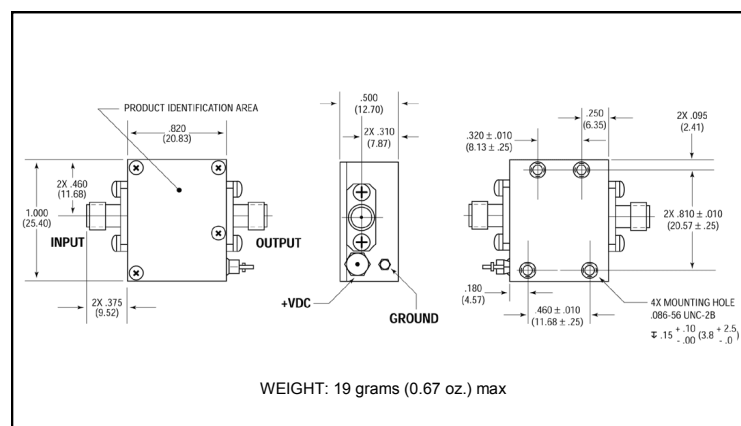
### Intercept Point

**VSWR**

## Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*





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