

# 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 <sub>d</sub>	0.033 W	
Junction Temperature Rise Above Case T <sub>jc</sub>	6°C	

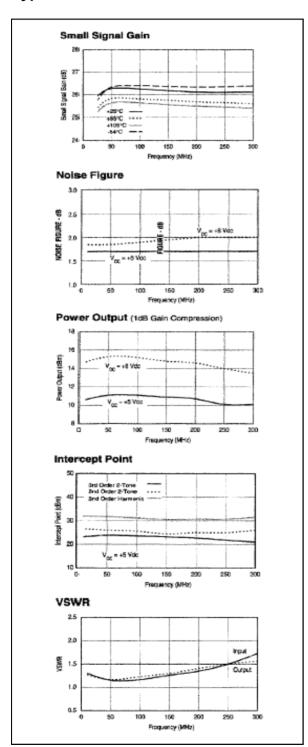
<sup>1 \*</sup> Over temperature performance limits for part number CA231, guaranteed from 0°C to +50°C only.



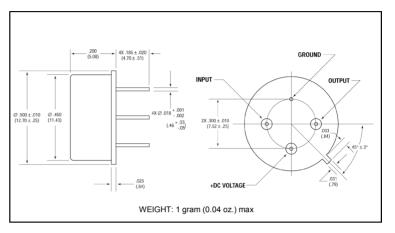
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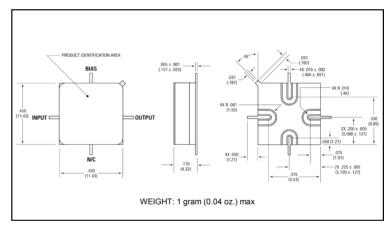
### Typical Performance Curves at +25°C



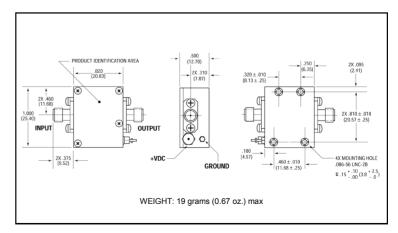
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized \*



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

## A231 / SMA231



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