# A181 / SMA181

## Cascadable Amplifier 10 to 250 MHz

#### Features

- HIGH REVERSE ISOLATION: 22 dB (TYP.)
- HIGH OUTPUT POWER: +22 dBm (TYP.
- HIGH THIRD ORDER I.P.: +35 dBm (TYP.)

### Description

The A181 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

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

### **Ordering Information**

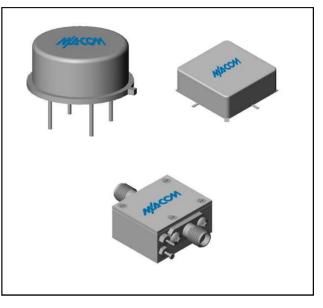
Part Number	Package	
A181	TO-8	
SMA181	Surface Mount	
CA181 **	SMA Connectorized	

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

### Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +15 V_{DC}$

_		Typical	Guaranteed	
Parameter	Units	25°C	0° to 50°C	-54º to +85ºC*
Frequency	MHz	5-400	10-250	10-250
Small Signal Gain (min)	dB	16.5	15.5	14.5
Gain Flatness (max)	dB	±0.3	±0.7	±0.8
Reverse Isolation	dB	22		
Noise Figure (max)	dB	3.8	4.5	5.0
Power Output @ 1 dB comp. (min)	dBm	22.0	20.0	19.5
IP3	dBm	+35		
IP2	dBm	+48		
Second Order Harmonic IP	dBm	+54		
VSWR Input / Output (max)		1.4:1 / 1.4:1	1.9:1 / 1.9:1	2.1:1 / 2.1:1
DC Current @ 15 Volts (max)	mA	95	104	113

# **Product Image**



#### **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	85°C	
DC Voltage	+17 V	
Continuous Input Power	+15 dBm	
Short Term Input power (1 minute max.)	100 mW	
Peak Power (3 µsec max.)	0.5 W	
"S" Series Burn-In Temperature (case)	85°C	

### Thermal Data: $V_{cc}$ = +15 $V_{Dc}$

Parameter	Rating
Thermal Resistance $\theta_{jc}$	148°C/W
Transistor Power Dissipation $P_d$	0.622 W
Junction Temperature Rise Above Case T <sub>jc</sub>	92°C

\* Over temperature performance limits for part number CA181, guaranteed from 0°C to +50°C only.

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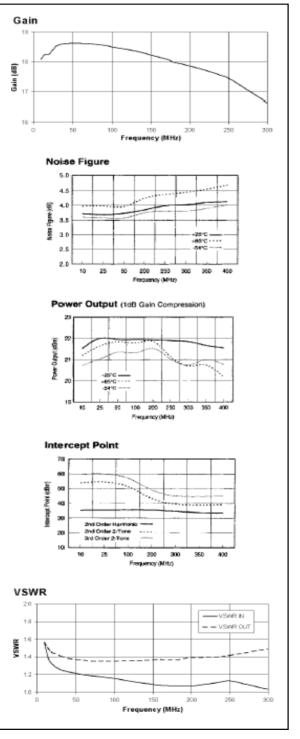
Rev. V4

# A181 / SMA181

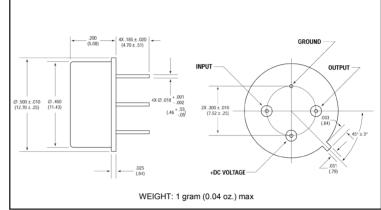


# Cascadable Amplifier 10 to 250 MHz

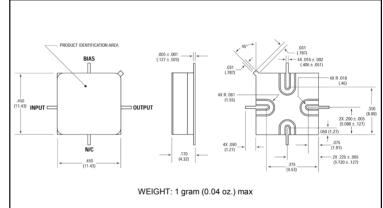
### Typical Performance Curves at +25°C



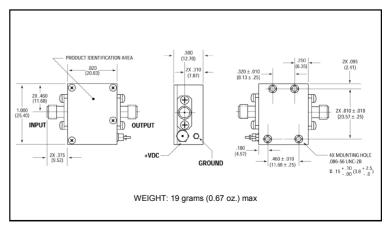
### Outline Drawing: TO-8 \*



### Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized \*



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

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Rev. V4

# A181 / SMA181

Cascadable Amplifier 10 to 250 MHz



Rev. V4

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