



## **Cascadable Amplifier** 20 to 500 MHz

A80/ SMA80

#### **Features**

- HIGH REVERSE ISOLATION 39 dB (TYP.)
- VERY LOW NOISE 2.3 dB (TYP.)
- HIGH GAIN 29 dB (TYP.)
- MEDIUM LEVEL OUTPUT +14.3 dBm (TYP.)

### **Description**

The A80 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

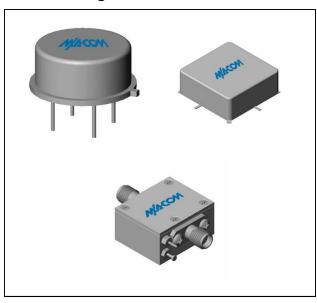
The 2 stage silicon bipolar feedback amplifier design displays impressive performance over a broadband frequency range. An isolation transformer is used in the feedback loop, with the benefit of high reverse isolation.

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

### **Ordering Information**

Part Number	Package			
A80	TO-8			
SMA80	Surface Mount			
CA80	SMA Connectorized			
Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} =$				

### Product Image



## +15 V<sub>DC</sub>

Downwater	Units	Typical	Guaranteed	
Parameter		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	10-550	20-500	20-500
Small Signal Gain (min)	dB	29.0	27.5	26.5
Gain Flatness (max)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	39		
Noise Figure (max)	dB	2.3	3.0	3.4
Power Output @ 1 dB comp. (min)	dBm	14.3	13.0	12.5
IP3	dBm	+27		
IP2	dBm	+33		
Second Order Harmonic IP	dBm	+40		
VSWR Input / Output (max)		1.4:1 / 1.8:1	1.8:1 / 2.1:1	2.0:1 / 2.3:1
DC Current @ 15 Volts (max)	mA	45	49	52

## **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	125°C	
DC Voltage	+17 V	
Continuous Input Power	+6 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 $\theta_{jc}$	45°C/W
Transistor Power Dissipation P <sub>d</sub>	0.27 W
Junction Temperature Rise Above Case T <sub>jc</sub>	12.2°C

<sup>\*</sup> Over temperature performance limits for part number CA80, guaranteed from 0°C to +50°C only.

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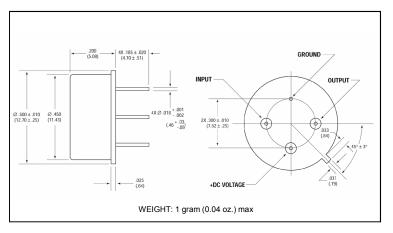
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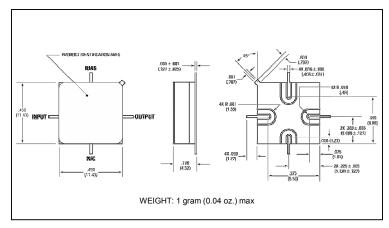
### Typical Performance Curves at +25°C

# Gain 150 300 500 Noise Figure 15 V Note Figure (cB) 10 100 200 300 400 300 500 Power Output (1 dB Gain Compression) Dupur (dBm) 500 700 Intercept Point 30 51 109 209 200 400 Frequency (VHz) **VSWR** Output E 30 100 300 460 501 600 Frequency (MHz)

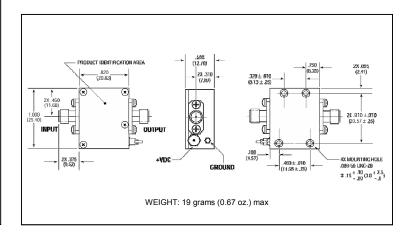
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized \*



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