

## Cascadable Amplifier 5 to 500 MHz

Rev. V3

### Features

- High Gain: 16.5 dB (typ.)
- High Level Output: +16.5 dBm (typ.)
- High Third Order OIP3: +30 dBm (typ.)
- Low VSWR: 1.3:1 (typ.)

### Description

The A77 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. The single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Product Image



### Ordering Information

Part Number	Package
A77	TO-8
SMA77	Surface Mount
CA77**	SMA Connectorized

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

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

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C
Frequency	MHz	2-600	5-500	5-500
Small Signal Gain (min.)	dB	16.5	16.0	15.0
Gain Flatness (max.)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	17	—	—
Noise Figure (max.)	dB	4.5	5.0	5.5
Power Output @ 1 dB comp. (min.)	dBm	16.5	15.0	14.5
IP3	dBm	+30	—	—
IP2	dBm	+43	—	—
Second Order Harmonic IP	dBm	+49	—	—
VSWR Input / Output (max.)	—	1.3:1 / 1.3:1	1.7:1 / 1.7:1	2.0:1 / 2.0:1
DC Current (max.)	mA	50	53	56

\* Over temperature performance limits for part number CA77, guaranteed from 0°C to +50°C only.

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### Absolute Maximum Ratings

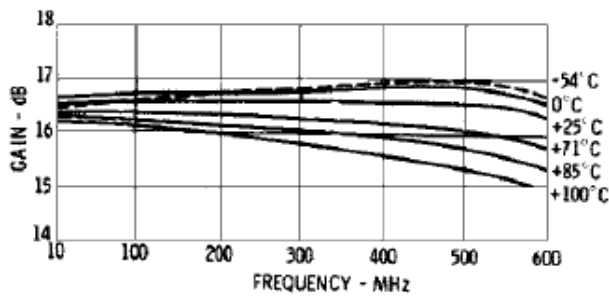
Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max..)	100 mW
Peak Power (3 μsec max..)	0.5 W
"S" Series Burn-In Temperature (case)	125°C

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

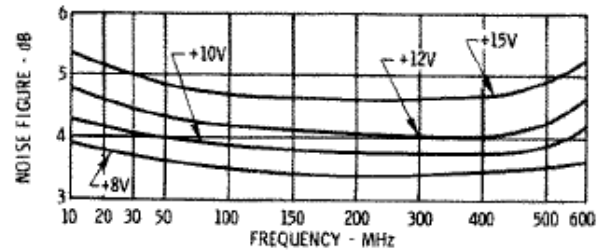
Parameter	Rating
Thermal Resistance $\theta_{jc}$	130°C/W
Transistor Power Dissipation $P_d$	0.464 W
Junction Temperature Rise Above Case $T_{JC}$	60°C

### Typical Performance Curves

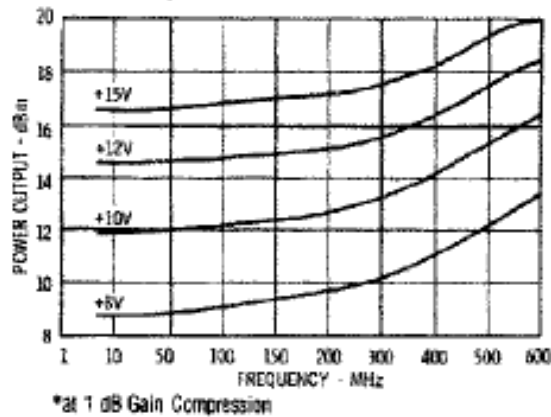
#### Gain



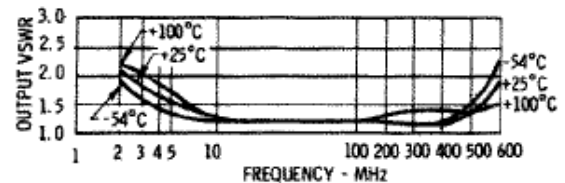
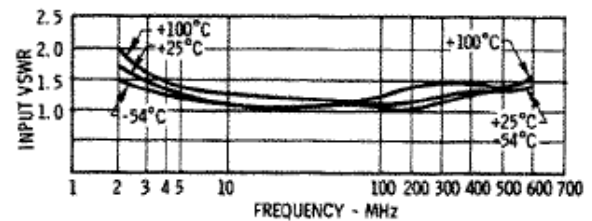
#### Noise Figure



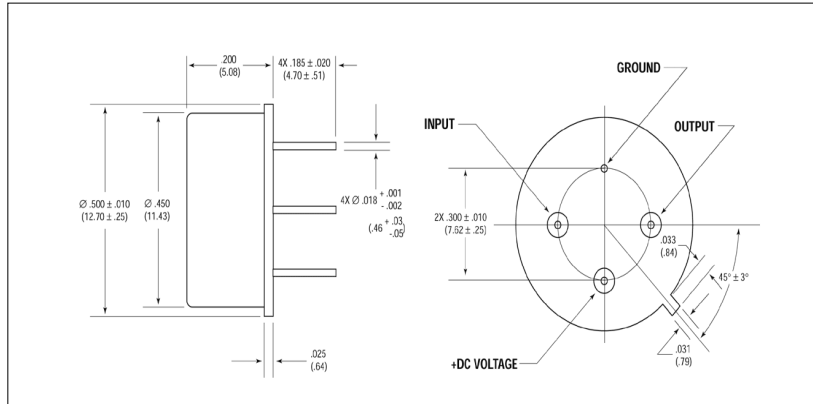
#### Power Output\*



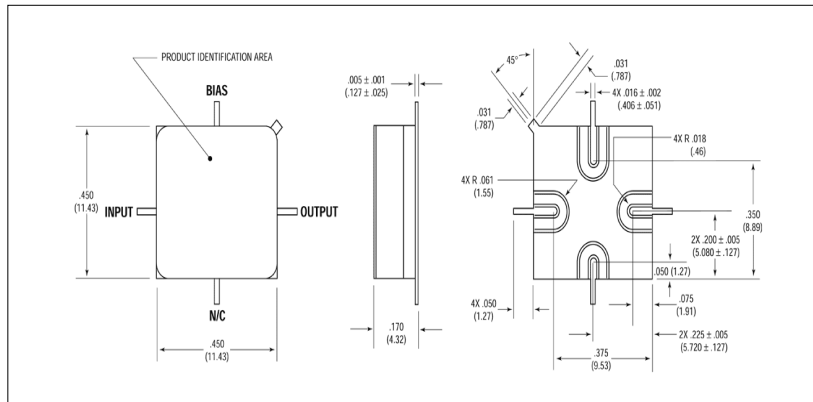
#### VSWR



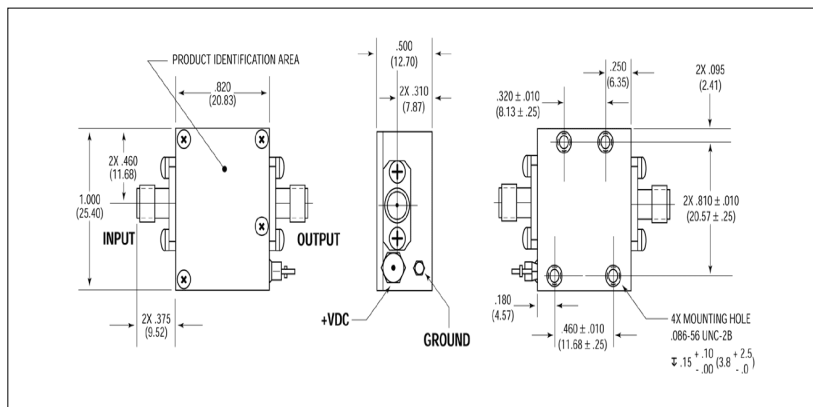
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized



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