

## Cascadable Amplifier 5 - 600 MHz

Rev. V3

### Features

- High Level Output: 16.5 dBm
- High Third Order I.P.: 30 dBm
- Extended Bandwidth: 5 - 600 MHz
- Wide Power Supply Range: 8 to 15 Volts

### Product Image



### Description

The A77-1 RF amplifier is a discrete hybrid design, which incorporates the use of thin film manufacturing processes for accurate performance and high reliability. The single stage silicon bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network is used for temperature-stable performance, in addition to an RF Choke, used for power supply decoupling. Both TO-8 and surface mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

Part Number	Package
A77-1	TO-8
SMA77-1	Surface Mount
CA77-1**	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	2-700	5-600	5-600
Small Signal Gain (min.)	dB	16.0	15.0	14.5
Gain Flatness (max.)	dB	±0.3	±0.7	±1.0
Reverse Isolation	dB	17	—	—
Noise Figure (max.)	dB	5.0	6.5	7.0
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.)		1.5:1 / 1.5:1	1.8:1 / 1.8:1	2.0:1 / 2.0:1
DC Current (max.)	mA	50	53	56

\* Over temperature performance limits for part number CA77-1, guaranteed from 0°C to +50°C only.

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### Absolute Maximum Ratings

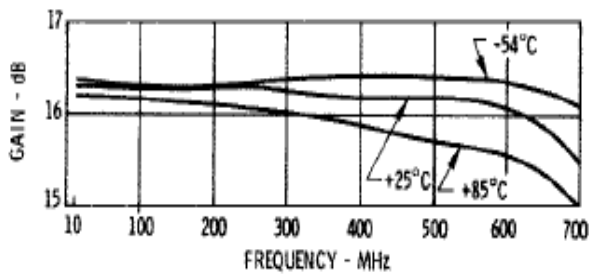
Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	125°C
DC Voltage	+17 V
Continuous Input Power	+13 dBm
Short Term Input power (1 minute max.)	100 mW
Peak Power (3 μsec max.)	0.5 W
"S" Series Burn-In Temperature (case)	125°C

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

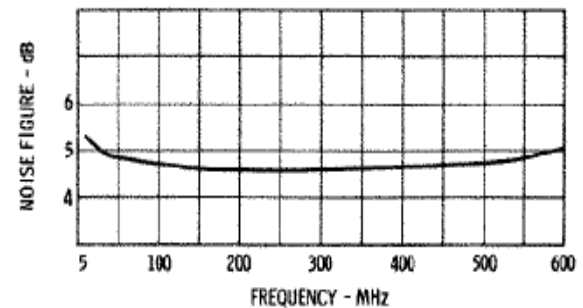
Parameter	Rating
Thermal Resistance $\theta_{jc}$	130°C/W
Transistor Power Dissipation $P_d$	0.464 W
Junction Temperature Rise Above Case $T_{jc}$	60°C

### Typical Performance Curves

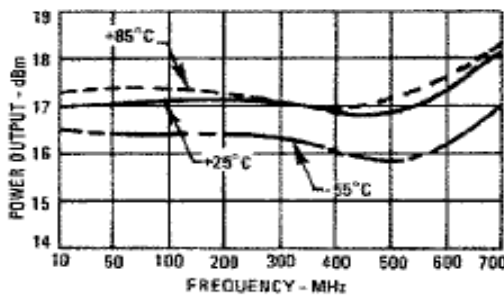
#### Gain



#### Noise Figure

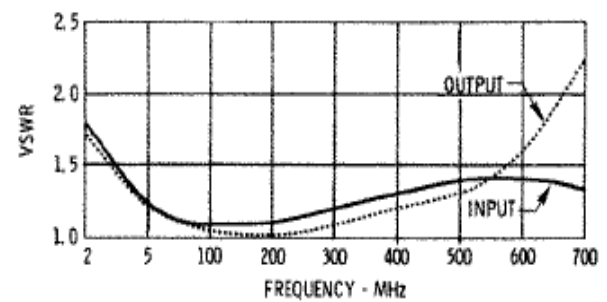


#### Power Output

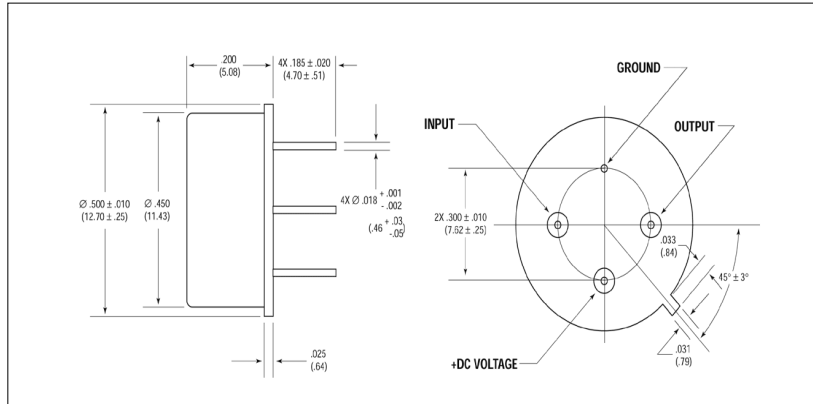


\* at 1 dB Gain Compression

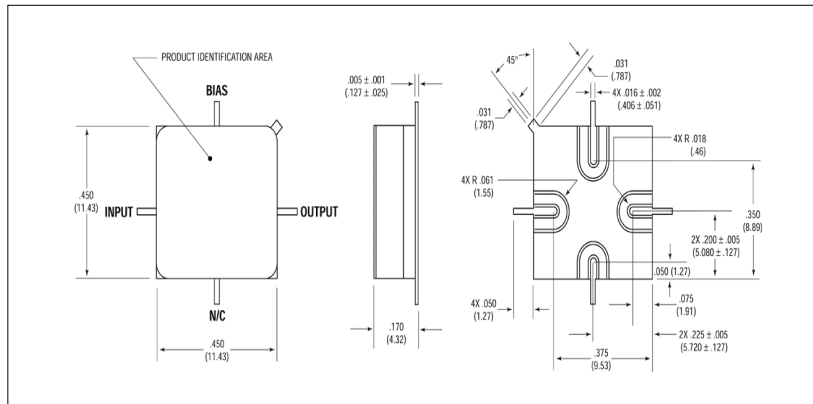
#### VSWR



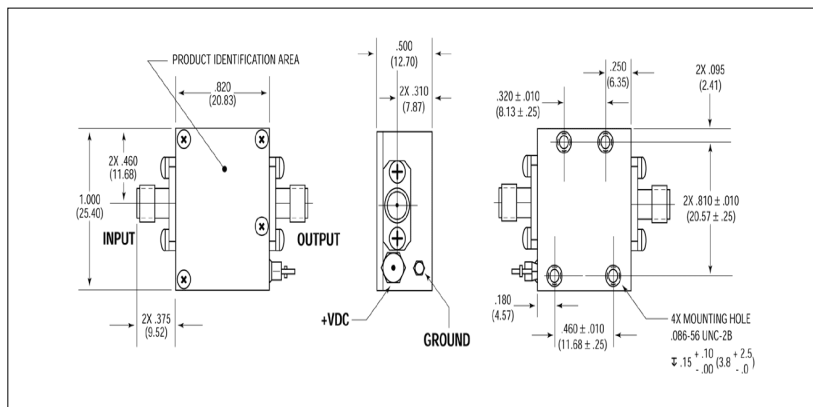
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized



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

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