

# 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.

### **Ordering Information**

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

<sup>\*\*</sup> The connectorized version is not RoHs compliant.

### **Product Image**





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

Down adam	Units	Typical	Guara	inteed
Parameter		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	<del>_</del>	_
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

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



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## **Absolute Maximum Ratings**

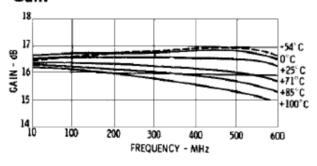
Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	125°C	
DC Voltage	+17 V	
Continuous Input Power	+13 dBm	
Short Term Input power (1 minute max)	100 mW	
Peak Power (3 µsec max)	0.5 W	
"S" Series Burn-In Temperature (case)	125°C	

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

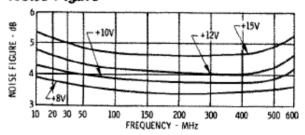
Parameter	Rating	
Thermal Resistance $\theta_{jc}$	130°C/W	
Transistor Power Dissipation P <sub>d</sub>	0.464 W	
Junction Temperature Rise Above Case T <sub>JC</sub>	60°C	

# **Typical Performance Curves**

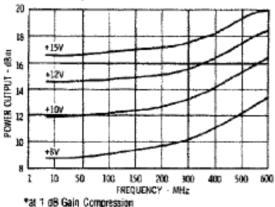
#### Gain



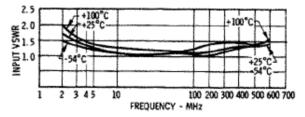
# Noise Figure

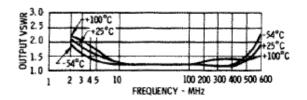


# Power Output\*



#### **VSWR**



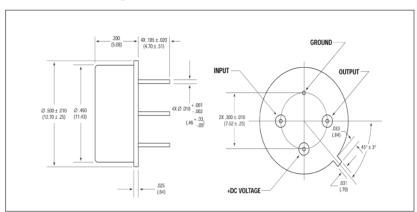




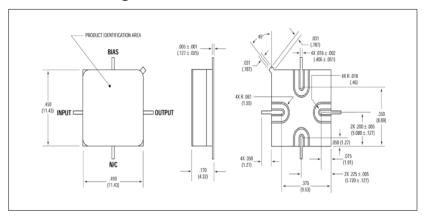
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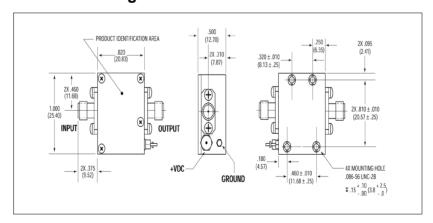
# Outline Drawing: TO-8 \*



# **Outline Drawing: Surface Mount**



# **Outline Drawing: SMA Connectorized**



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

# A77 / SMA77



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