

# RoHS Compliant



A76-1/SMA76-1

## **Cascadable Amplifier** 5 to 500 MHz

#### **Features**

HIGH GAIN - TWO STAGES: 27.5 dB (TYP.)

HIGH OUTPUT LEVEL: +12.7 dBm (TYP.)

LOW NOISE FIGURE: 3.0 dB (TYP.)

#### **Description**

The A76-1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for consistent performance and high reliability.

This 2 stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. An active DC biasing network insures temperature-stable performance.

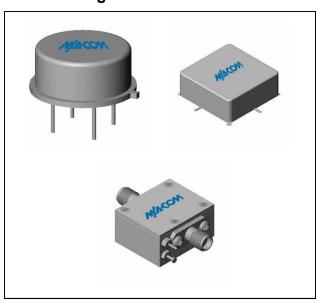
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is avail-

#### **Ordering Information**

Part Number	Package	
A76-1	TO-8	
SMA76-1	Surface Mount	
CA76-1 **	SMA Connectorized	

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

#### Product Image



## Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +5 V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25°C	0° to 50°C	-54° to +85°C*
Frequency	MHz	3-600	5-500	5-500
Small Signal Gain (min)	dB	27.5	26.0	25.0
Gain Flatness (max)	dB	±0.3	±0.8	±1.0
Reverse Isolation	dB	36		
Noise Figure (max)	dB	3.0	4.0	4.5
Power Output @ 1 dB comp. (min)	dBm	12.7	12.0	11.0
IP3	dBm	+26		
IP2	dBm	+36		
Second Order Harmonic IP	dBm	+41		
VSWR Input / Output (max)		1.5:1 / 1.5:1	1.9:1 / 1.9:1	2.0:1 / 2.0:1
DC Current @ 5 Volts (max)	mA	48	51	53

## **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Storage Temperature	-62°C to +125°C	
Case Temperature	125°C	
DC Voltage	+10 V	
Continuous Input Power	+6 dBm	
Short Term Input power (1 minute max.)	40 mW	
Peak Power (3 µsec max.)	0.5 W	
"S" Series Burn-In Temperature (case)	125°C	

#### Thermal Data: $V_{CC} = +5 V_{DC}$

Parameter	Rating
Thermal Resistance $\theta_{jc}$	146°C/W
Transistor Power Dissipation P <sub>d</sub>	0.136 W
Junction Temperature Rise Above Case T <sub>jc</sub>	20°C

<sup>\*</sup> Over temperature performance limits for part number CA76-1, guaranteed from 0°C to +50°C only.

<sup>•</sup> North America Tel: 800.366.2266 / Fax: 978.366.2266

<sup>•</sup> Europe Tel: 44.1908.574.200 / Fax: 44.1908.574.300

Asia/Pacific Tel: 81.44.844.8296 / Fax: 81.44.844.8298



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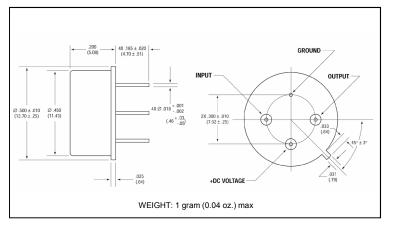
A76-1/ SMA76-1

# Cascadable Amplifier 5 to 500 MHz

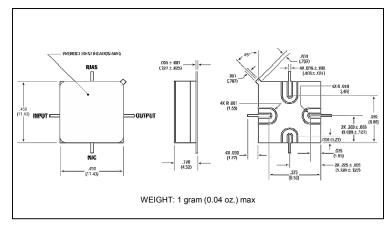
#### Typical Performance Curves at +25°C

# Gain 10 50 100 200 300 400 500 500 700 FREQUENCY - MHz Noise Figure Power Output (1 dB Compression) Intercept Point 2ND ORDER VSWR 1.5

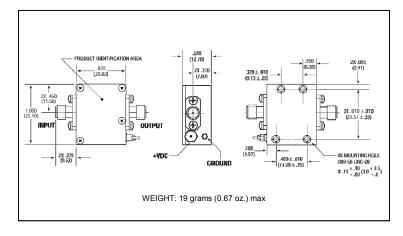
# Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



# Outline Drawing: SMA Connectorized \*



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