

**Cascadable Amplifier  
5 to 500 MHz**

**A76/ SMA76**

V3

**Features**

- HIGH GAIN - TWO STAGES: 28 dB (TYP.)
- HIGH OUTPUT LEVEL: +15 dBm (TYP.)
- HIGH THIRD ORDER IP: +28 dBm (TYP.)
- WIDE POWER SUPPLY RANGE: +8 TO +15 VOLTS

**Description**

The A76 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.

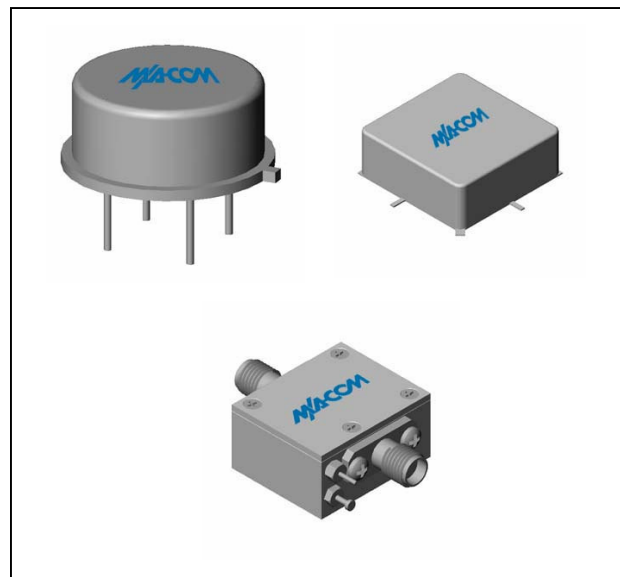
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

**Ordering Information**

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

\*\* The connectorized version is not RoHS compliant

**Product Image**



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

| 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    | 28.0          | 27.0          | 26.0           |
| Gain Flatness (max)             | dB    | ±0.3          | ±0.7          | ±1.0           |
| Reverse Isolation               | dB    | 37            |               |                |
| Noise Figure (max)              | dB    | 3.0           | 3.5           | 4.0            |
| Power Output @ 1 dB comp. (min) | dBm   | 14.7          | 14.0          | 13.5           |
| IP3                             | dBm   | +28           |               |                |
| IP2                             | dBm   | +42           |               |                |
| Second Order Harmonic IP        | dBm   | +48           |               |                |
| VSWR Input / Output (max)       |       | 1.3:1 / 1.3:1 | 1.8:1 / 1.8:1 | 2.0:1 / 2.0:1  |
| DC Current @ 15 Volts (max)     | mA    | 60            | 63            | 65             |

**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.) | 40 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 $P_d$            | 0.411 W |
| Junction Temperature Rise Above Case $T_{jc}$ | 54°C    |

\* Over temperature performance limits for part number CA76, guaranteed from 0°C to +50°C only.

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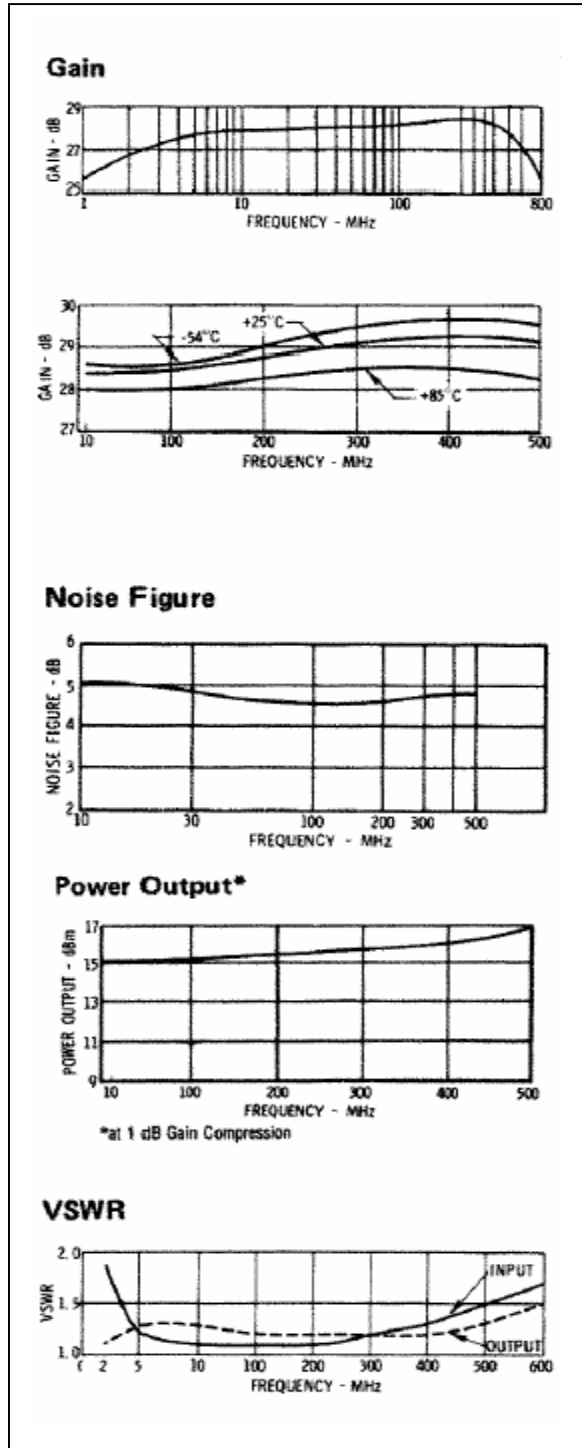
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

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



**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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