

## Cascadable Amplifier 20 to 500 MHz

Rev. V2

### Features

- HIGH REVERSE ISOLATION 39 dB (TYP.)
- VERY LOW NOISE 2.3 dB (TYP.)
- HIGH GAIN 29 dB (TYP.)
- MEDIUM LEVEL OUTPUT +14.3 dBm (TYP.)

### Description

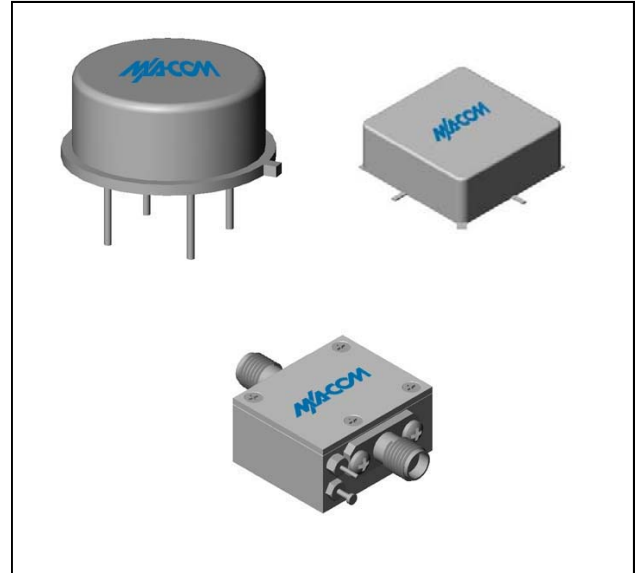
The A80 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. The 2 stage silicon bipolar feedback amplifier design displays impressive performance over a broadband frequency range. An isolation transformer is used in the feedback loop, with the benefit of high reverse isolation. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

| Part Number        | Package              |
|--------------------|----------------------|
| A80                | TO-8                 |
| SMA80              | Surface Mount        |
| MAAM-008731-00CA80 | 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   | 10-550        | 20-500        | 20-500         |
| Small Signal Gain (min)         | dB    | 29.0          | 27.5          | 26.5           |
| Gain Flatness (max)             | dB    | ±0.3          | ±0.7          | ±1.0           |
| Reverse Isolation               | dB    | 39            |               |                |
| Noise Figure (max)              | dB    | 2.3           | 3.0           | 3.4            |
| Power Output @ 1 dB comp. (min) | dBm   | 14.3          | 13.0          | 12.5           |
| IP3                             | dBm   | +27           |               |                |
| IP2                             | dBm   | +33           |               |                |
| Second Order Harmonic IP        | dBm   | +40           |               |                |
| VSWR Input / Output (max)       |       | 1.4:1 / 1.8:1 | 1.8:1 / 2.1:1 | 2.0:1 / 2.3:1  |
| DC Current @ 15 Volts (max)     | mA    | 45            | 49            | 52             |

### 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.) | 50 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 $\theta_{jc}$              | 45°C/W |
| Transistor Power Dissipation $P_d$            | 0.27 W |
| Junction Temperature Rise Above Case $T_{jc}$ | 12.2°C |

\* Over temperature performance limits for part number CA80, guaranteed from 0°C to +50°C only.

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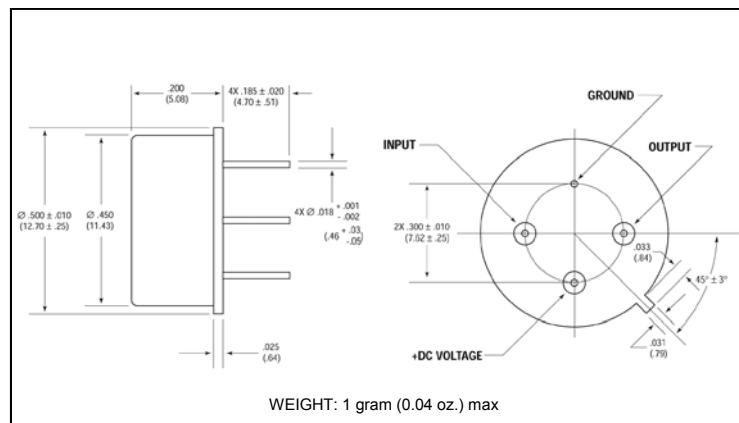
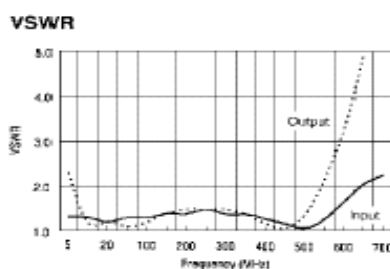
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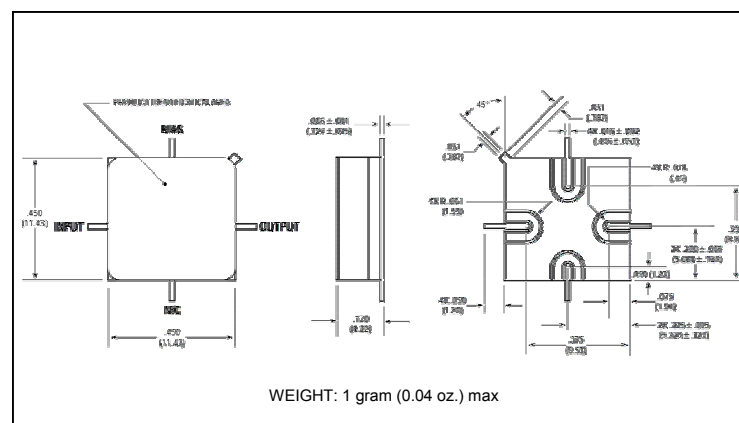


## Rev. V2

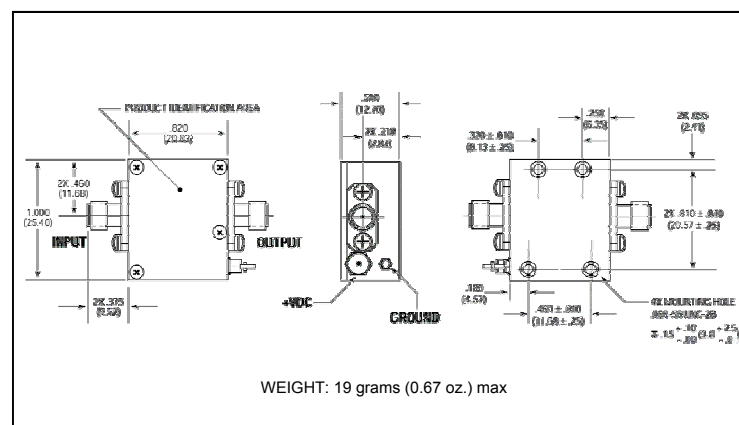
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*



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