

## Cascadable Amplifier 5 to 500 MHz

Rev. V3

### Features

- LOW NOISE: 2.4 dB (TYP.)
- LOW VSWR: 1.3:1 (TYP.)
- HIGH GAIN: 16 dB (TYP.)

### Description

The A1 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

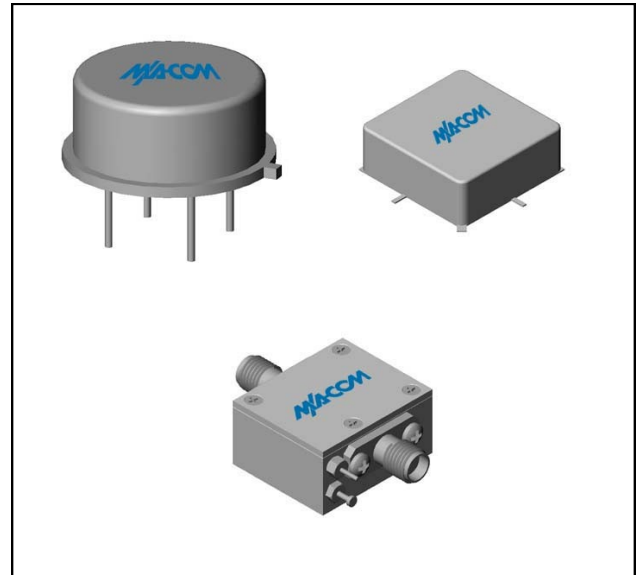
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

| Part Number        | Package              |
|--------------------|----------------------|
| A1                 | TO-8                 |
| SMA1               | Surface Mount        |
| MAAM-008712-000CA1 | 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   | 1-600         | 5-500         | 5-500          |
| Small Signal Gain (min)            | dB    | 16.0          | 15.0          | 14.5           |
| Gain Flatness (max)                | dB    | ±0.2          | ±0.7          | ±1.0           |
| Reverse Isolation                  | dB    | 19            |               |                |
| Noise Figure (max)                 | dB    | 2.4           | 3.0           | 3.5            |
| Power Output<br>@ 1 dB comp. (min) | dBm   | -1.0          | -2.0          | -3.0           |
| IP3                                | dBm   | +11           |               |                |
| IP2                                | dBm   | +10           |               |                |
| Second Order Harmonic IP           | dBm   | +15           |               |                |
| 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    | 9             | 11            | 12             |

### Absolute Maximum Ratings

| Parameter                                 | Absolute Maximum |
|-------------------------------------------|------------------|
| Storage Temperature                       | -62°C to +125°C  |
| Case Temperature                          | +125°C           |
| DC Voltage                                | +18 V            |
| Continuous Input Power                    | +13 dBm          |
| Short Term Input power<br>(1 minute max.) | 50 mW            |
| Peak Power (3 µsec max.)                  | 0.5 W            |
| "S" Series Burn-In<br>Temperature (case)  | +125°C           |

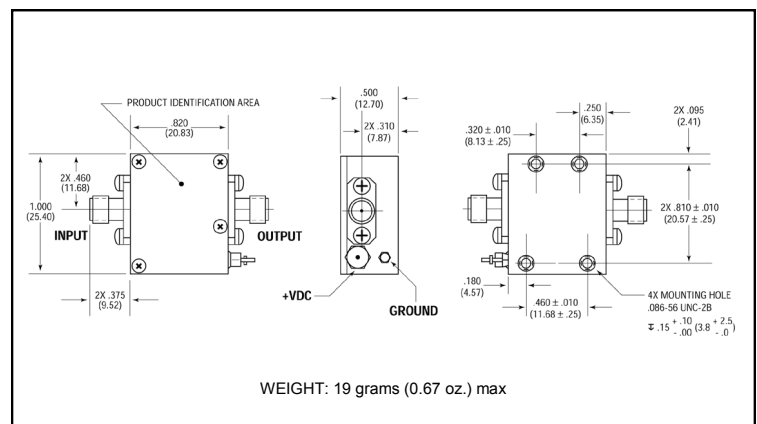
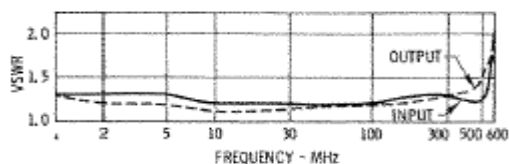
### Thermal Data: $V_{CC} = +15 V_{DC}$

| Parameter                                        | Rating  |
|--------------------------------------------------|---------|
| Thermal Resistance $\theta_{jc}$                 | 130°C/W |
| Transistor Power Dissipation $P_d$               | 0.057 W |
| Junction Temperature Rise<br>Above Case $T_{jc}$ | 7°C     |

1 \* Over temperature performance limits for part number CA1, guaranteed from 0°C to +50°C only.

## Rev. V3

## Outline Drawing: TO-8 \*



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