

## Cascadable Amplifier 5 to 600 MHz

Rev. V3

### Features

- FLAT BANDWIDTH:  $\pm 2$  dB (TYP.)
- LOW VSWR: 1.3:1 (TYP.)
- WIDE POWER SUPPLY RANGE: +8 to +15 VOLTS

### Description

The A5-6 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

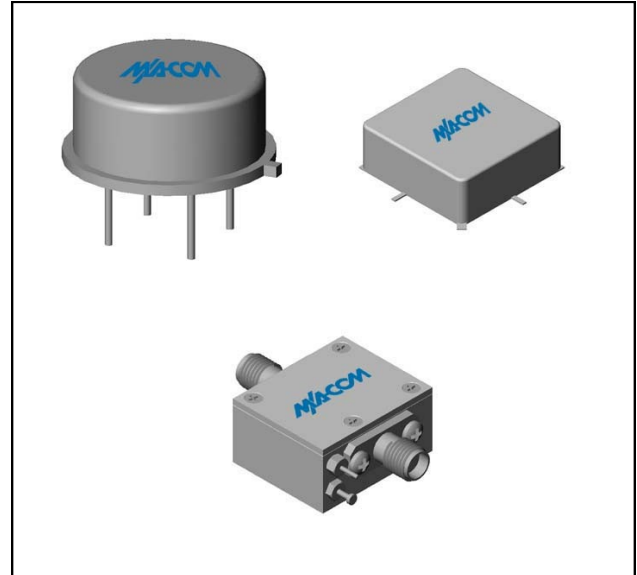
This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

| Part Number | Package              |
|-------------|----------------------|
| A5-6        | TO-8                 |
| SMA5-6      | Surface Mount        |
| CA5-6       | 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   | 1-700         | 6-600         | 6-600          |
| Small Signal Gain (min)         | dB    | 16.0          | 15.0          | 14.5           |
| Gain Flatness (max)             | dB    | $\pm 0.2$     | $\pm 0.7$     | $\pm 0.7$      |
| Reverse Isolation               | dB    | 20            |               |                |
| Noise Figure (max)              | dB    | 4.5           | 5.5           | 6.0            |
| Power Output @ 1 dB comp. (min) | dBm   | 8.5           | 7.0           | 6.5            |
| IP3                             | dBm   | +21           |               |                |
| IP2                             | dBm   | +38           |               |                |
| Second Order Harmonic IP        | dBm   | +42           |               |                |
| 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    | 24            | 27            | 29             |

### 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.) | 50 mW            |
| Peak Power (3 $\mu$ sec max.)          | 0.5 W            |
| "S" Series Burn-In Temperature (case)  | +125°C           |

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

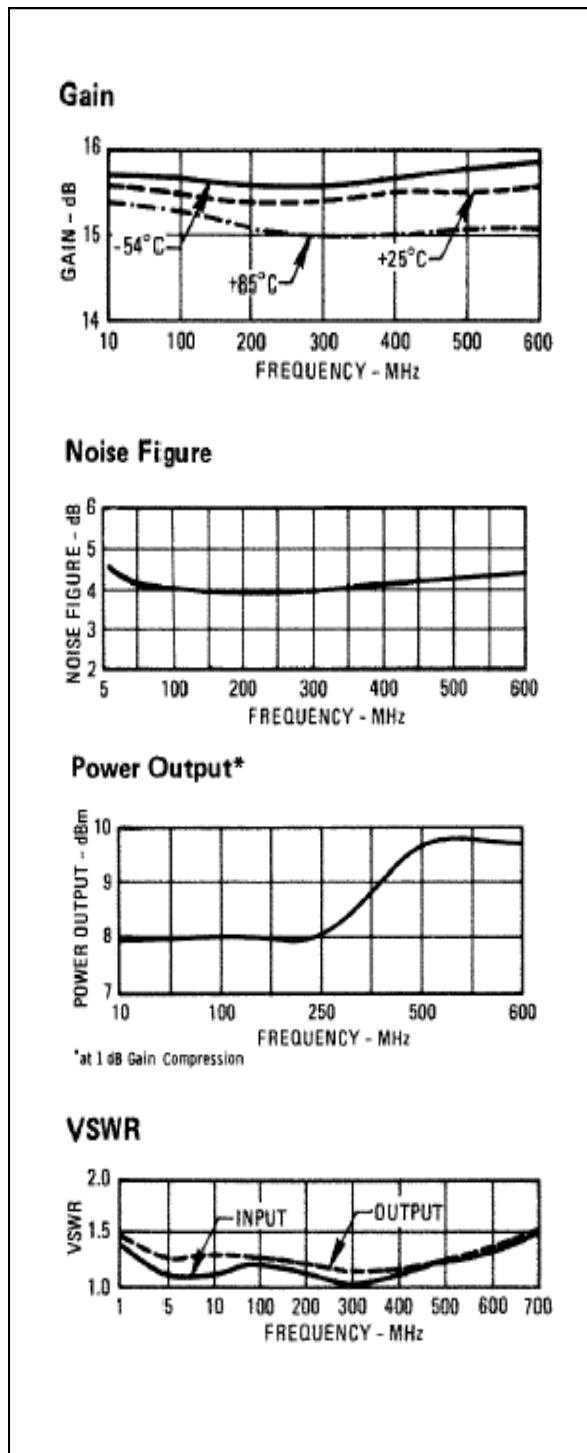
| Parameter                                     | Rating  |
|---|---------|
| Thermal Resistance $\theta_{jc}$              | 170°C/W |
| Transistor Power Dissipation $P_d$            | 0.184 W |
| Junction Temperature Rise Above Case $T_{jc}$ | +31°C   |

1 \* Over temperature performance limits for part number CA5-6, guaranteed from 0°C to +50°C only.

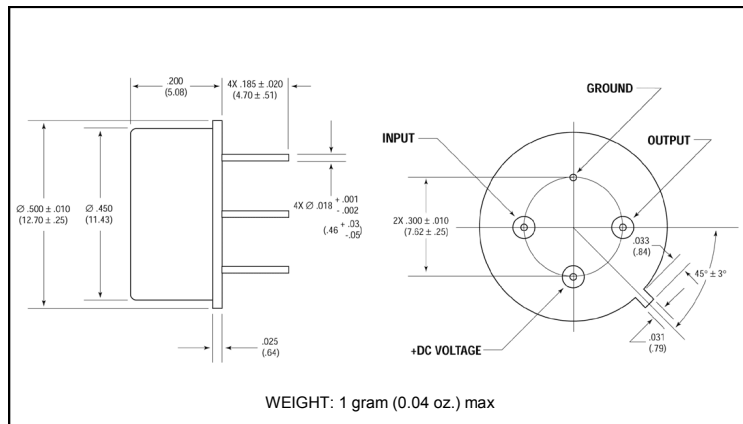
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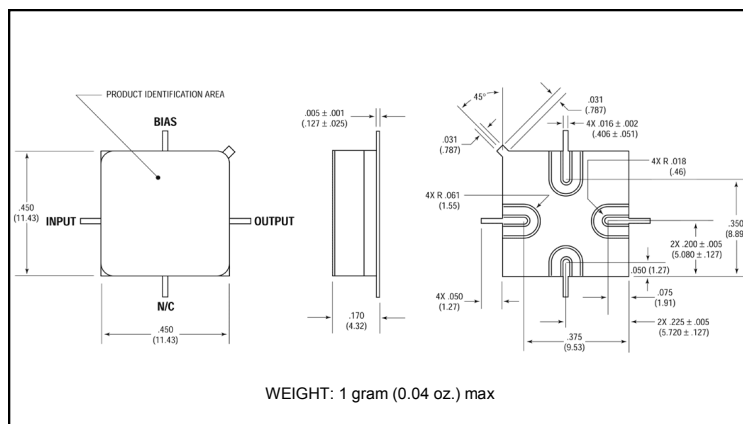
### Typical Performance Curves at +25°C



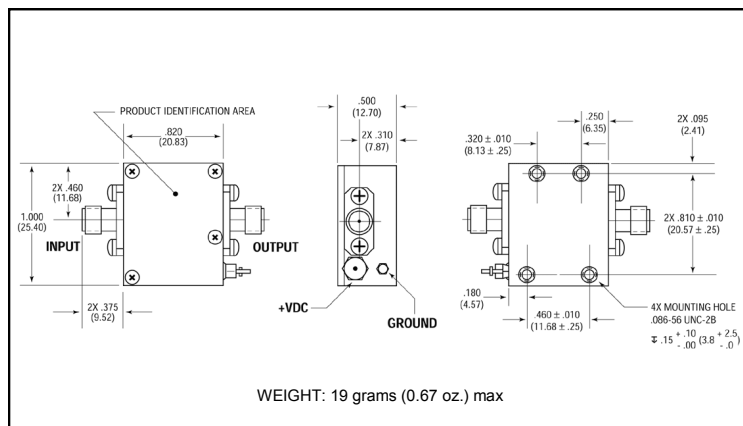
### Outline Drawing: TO-8 \*



### Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*



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