

### Features

- HIGH REVERSE ISOLATION: >28.5 dB (TYP.)
- HIGH LEVEL OUTPUT: +20 dBm (TYP.)
- LOW NOISE: 2.8 dB (TYP.)
- HIGH GAIN: 24.5 dB (TYP.)

### Description

The A82 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.

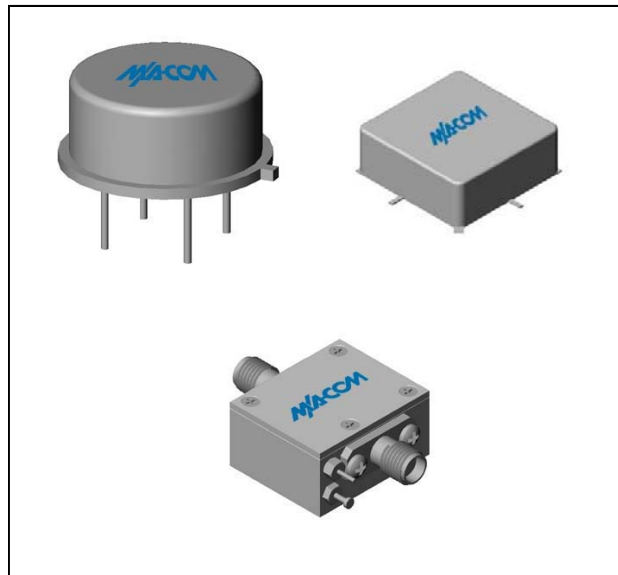
Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

### Ordering Information

| Part Number | Package           |
|-------------|-------------------|
| A82         | TO-8              |
| SMA82       | Surface Mount     |
| CA82**      | 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   | 10-300        | 20-250        | 20-250         |
| Small Signal Gain (min)         | dB    | 25.0          | 24.0          | 23.5           |
| Gain Flatness (max)             | dB    | ±0.3          | ±0.7          | ±1.0           |
| Reverse Isolation               | dB    | 29            |               |                |
| Noise Figure (max)              | dB    | 2.8           | 3.5           | 4.0            |
| Power Output @ 1 dB comp. (min) | dBm   | 20.0          | 19.0          | 18.0           |
| IP3                             | dBm   | +31           |               |                |
| IP2                             | dBm   | +36           |               |                |
| Second Order Harmonic IP        | dBm   | +42           |               |                |
| VSWR Input / Output (max)       |       | 1.3:1 / 1.3:1 | 1.7:1 / 1.7:1 | 1.9:1 / 1.9:1  |
| DC Current @ 15 Volts (max)     | mA    | 50            | 52            | 54             |

### Absolute Maximum Ratings

| Parameter                              | Absolute Maximum |
|--|------------------|
| Storage Temperature                    | -62°C to +125°C  |
| Case Temperature                       | +125°C           |
| DC Voltage                             | +17 V            |
| Continuous Input Power                 | 10 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 $\theta_{jc}$              | 144°C/W |
| Transistor Power Dissipation $P_d$            | 0.273 W |
| Junction Temperature Rise Above Case $T_{jc}$ | 39°C    |

\* Over temperature performance limits for part number CA82, guaranteed from 0°C to +50°C only.

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# A82 / SMA82

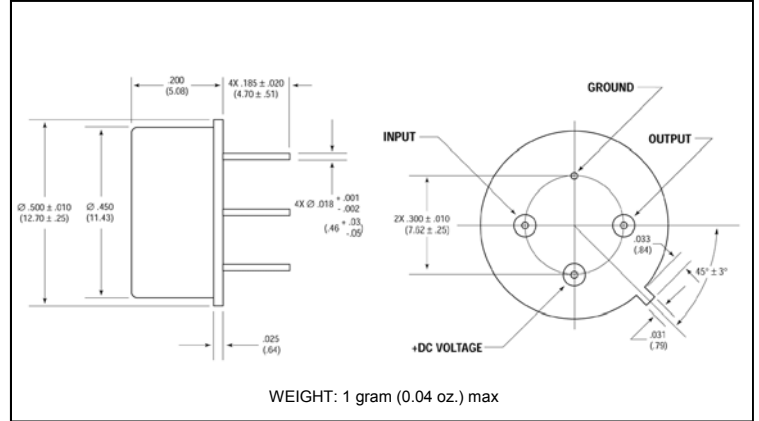
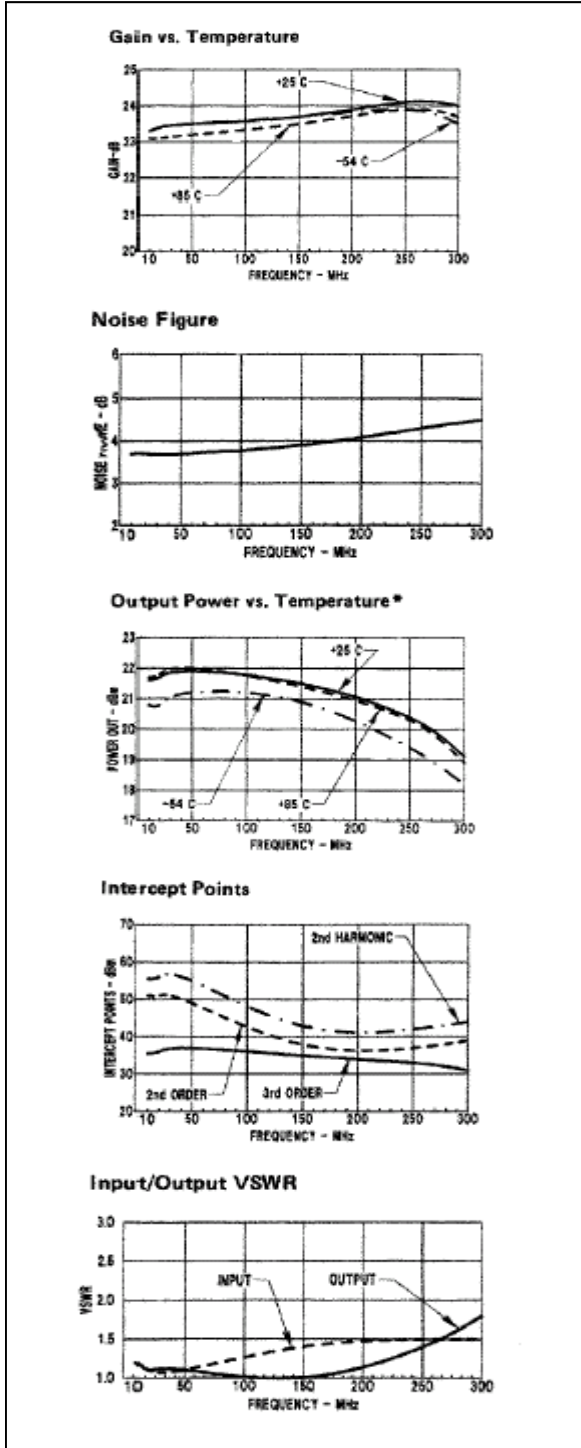


Cascadable Amplifier  
20 to 250 MHz

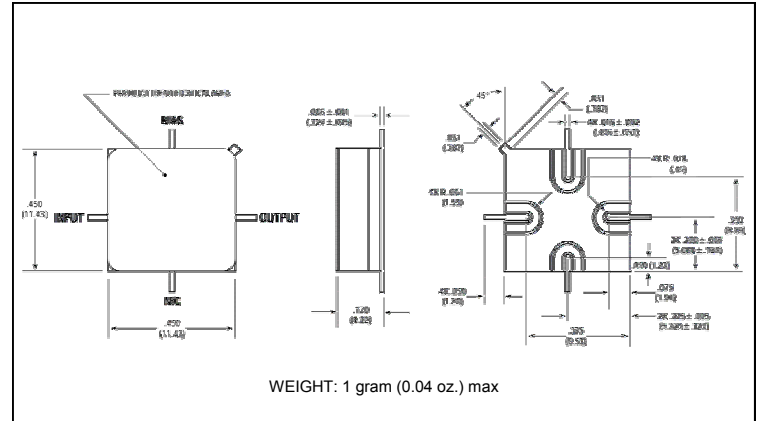
Rev. V3

## Typical Performance Curves at +25°C

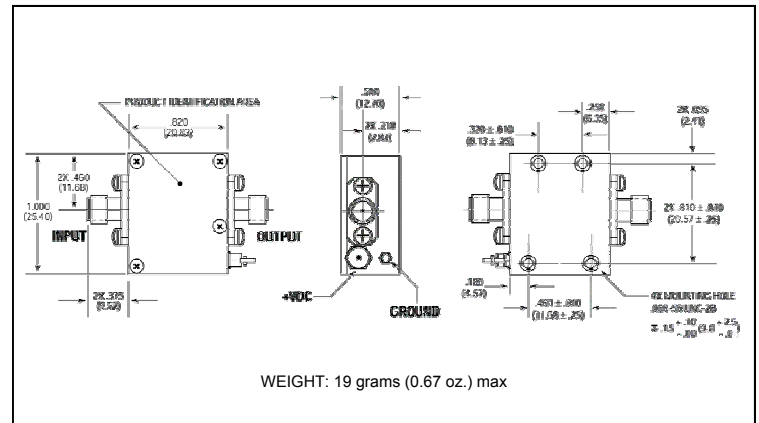
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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

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