

# A36-1 / SMA36-1

Cascadable Amplifier  
100 to 2300 MHz

Rev. V4

## Features

- HIGH GAIN –TWO STAGES: 16.2 dB (TYP.)
- LOW VSWR: < 1.6:1 (TYP.)
- MEDIUM OUTPUT LEVEL +12 dBm (TYP.)

## Description

The A36-1 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           |
|-------------|-------------------|
| A36-1       | TO-8              |
| SMA36-1     | Surface Mount     |
| CA36-1 **   | 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   | 80-2400       | 100-2300      | 100-2300       |
| Small Signal Gain (min)         | dB    | 16.2          | 15.0          | 14.0           |
| Gain Flatness (max)             | dB    | ±0.2          | ±0.7          | ±1.2           |
| Reverse Isolation               | dB    | 29            |               |                |
| Noise Figure (max)              | dB    | 6.0           | 7.0           | 7.5            |
| Power Output @ 1 dB comp. (min) | dBm   | 12.0          | 11.0          | 10.5           |
| IP3                             | dBm   | +23           |               |                |
| IP2                             | dBm   | +33           |               |                |
| Second Order Harmonic IP        | dBm   | +38           |               |                |
| VSWR Input / Output (max)       |       | 1.6:1 / 1.6:1 | 2.0:1 / 2.0:1 | 2.2:1 / 2.2:1  |
| DC Current @ 15 Volts (max)     | mA    | 63            | 64            | 67             |

## 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 $\theta_{jc}$              | 150°C/W |
| Transistor Power Dissipation $P_d$            | 0.371 W |
| Junction Temperature Rise Above Case $T_{jc}$ | +56°C   |

\* Over temperature performance limits for part number CA36-1 guaranteed from 0°C to +50°C only.

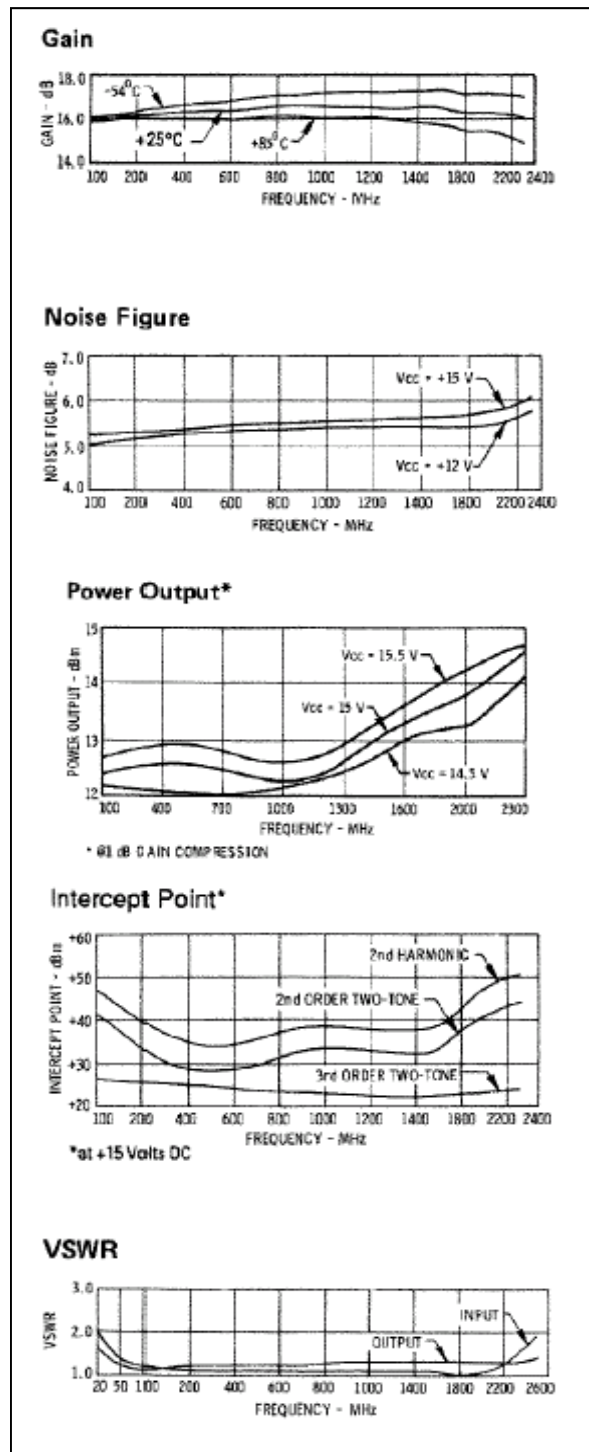
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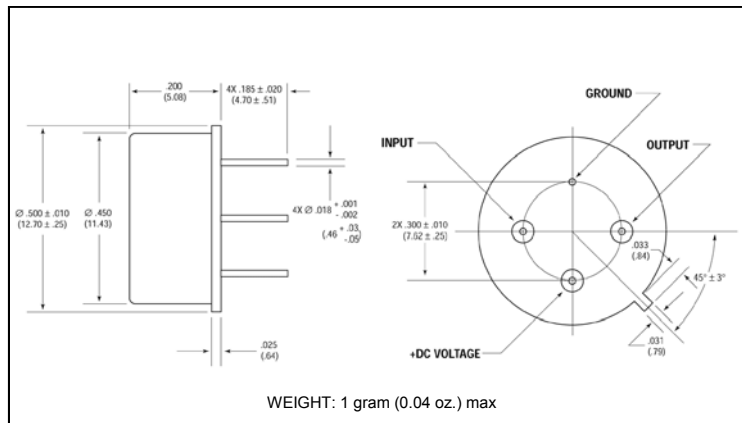
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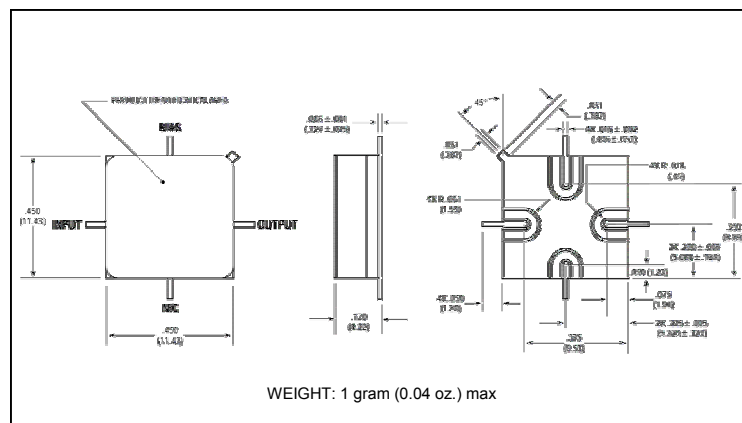
## Typical Performance Curves at +25°C



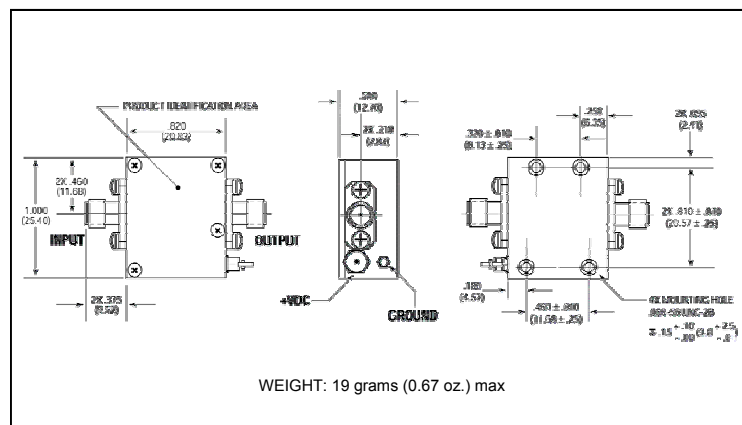
## Outline Drawing: TO-8 \*



## Outline Drawing: Surface Mount \*



## Outline Drawing: SMA Connectorized \*



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