

## Cascadable Amplifier 10 to 300 MHz

Rev. V3

### Features

- LOW NOISE FIGURE: 3.0 dB (TYP.)
- HIGH FREQUENCY: 15 mA @ +5 Vdc (TYP.)
- HIGH OUTPUT POWER AT 5 VOLTS: +11 dBm (TYP.)
- LOW VSWR: <1.5:1 (TYP.)

### Description

The A87-2 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. Use of an impedance transformer offers the benefit of high dynamic range and high efficiency.

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

### Ordering Information

| Part Number | Package           |
|-------------|-------------------|
| A87-2       | TO-8              |
| SMA87-2     | Surface Mount     |
| CA87-2 **   | SMA Connectorized |

\*\* The connectorized version is not RoHs compliant.

### Product Image



### Electrical Specifications: $Z_0 = 50\Omega$ , $V_{CC} = +5 V_{DC}$

| Parameter                          | Units | Typical       | Guaranteed    |                |
|------------------------------------|-------|---------------|---------------|----------------|
|                                    |       | 25°C          | 0° to 50°C    | -54° to +85°C* |
| Frequency                          | MHz   | 5-350         | 10-300        | 10-300         |
| Small Signal Gain (min)            | dB    | 16.0          | 15.0          | 14.5           |
| Gain Flatness (max)                | dB    | ±0.2          | ±0.5          | ±0.8           |
| Reverse Isolation                  | dB    | 20            |               |                |
| Noise Figure (max)                 | dB    | 2.9           | 3.5           | 4.0            |
| Power Output<br>@ 1 dB comp. (min) | dBm   | 11.0          | 9.0           | 8.5            |
| IP3                                | dBm   | +24           |               |                |
| IP2                                | dBm   | +35           |               |                |
| Second Order Harmonic IP           | dBm   | +41           |               |                |
| VSWR Input / Output (max)          |       | 1.3:1 / 1.3:1 | 1.8:1 / 1.8:1 | 2.0:1 / 2.0:1  |
| DC Current @ 5 Volts (max)         | mA    | 15            | 17            | 18             |

### Absolute Maximum Ratings

| Parameter                                 | Absolute Maximum |
|-------------------------------------------|------------------|
| Storage Temperature                       | -62°C to +125°C  |
| Case Temperature                          | +125°C           |
| DC Voltage                                | +10 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: $V_{CC} = +5 V_{DC}$

| Parameter                                        | Rating  |
|--------------------------------------------------|---------|
| Thermal Resistance $\theta_{jc}$                 | 185°C/W |
| Transistor Power Dissipation $P_d$               | 0.034 W |
| Junction Temperature Rise<br>Above Case $T_{jc}$ | 6°C     |

\* Over temperature performance limits for part number CA87-2, guaranteed from 0°C to +50°C only.

**ADVANCED:** Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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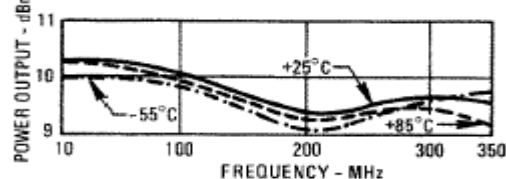
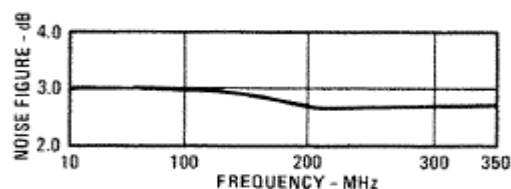
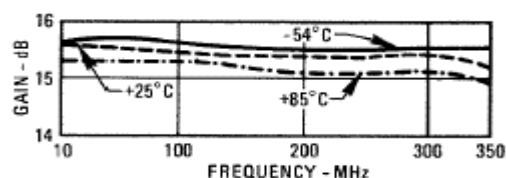
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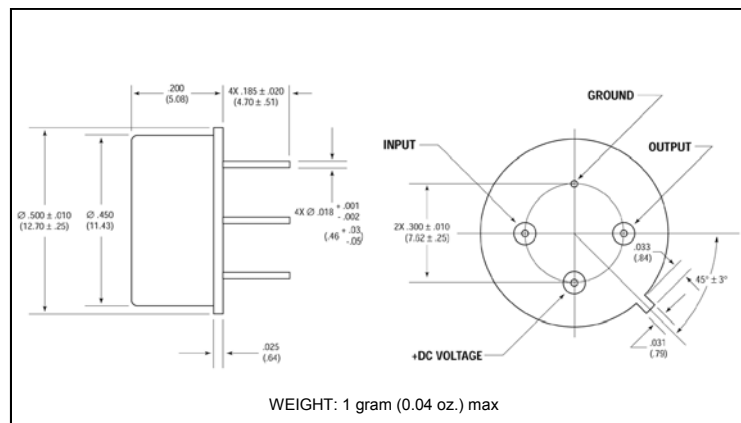
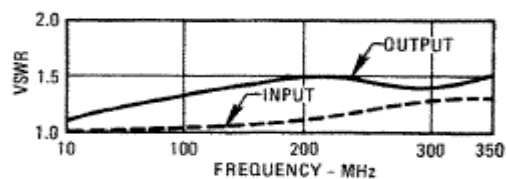
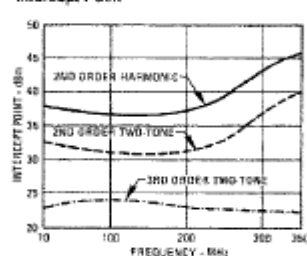


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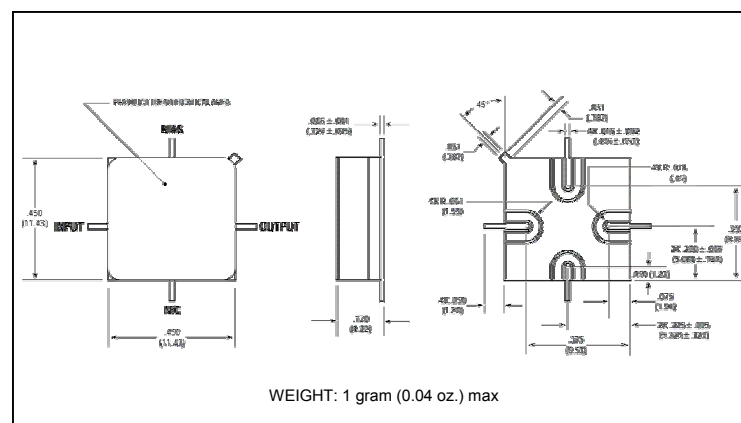
## Outline Drawing: TO-8 \*



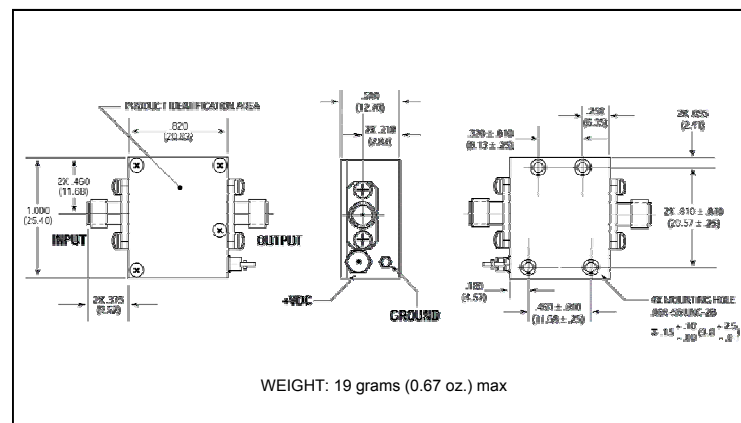
Intercept Point



## Outline Drawing: Surface Mount \*



### Outline Drawing: SMA Connectorized \*



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