

## Cascadable Thin Film Amplifier, 28 dB Gain, 5 - 1000 MHz

Rev. V4

### Features

- 28.5 dB Typical Gain
- 2.7 dB Typical Low Noise

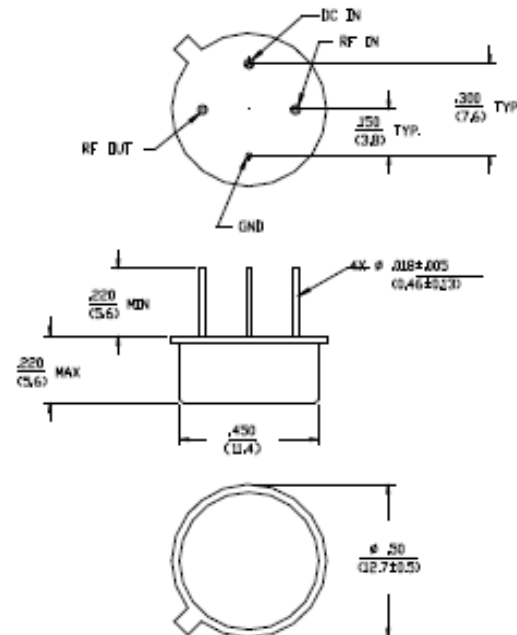
### Description

M/A-COM's AM-182 is a high gain feedback amplifier with high intercept and compression points. This amplifier is packaged in a TO-8 package. Due to the internal power dissipation the thermal rise should be minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM-182 is ideally suited for use where a high intercept, high reliability amplifier is required.

### Ordering Information

| Part Number | Package       |
|-------------|---------------|
| AM-182 PIN  | TO-8-1        |
| AMC-182 SMA | Connectorized |

### TO-8-1



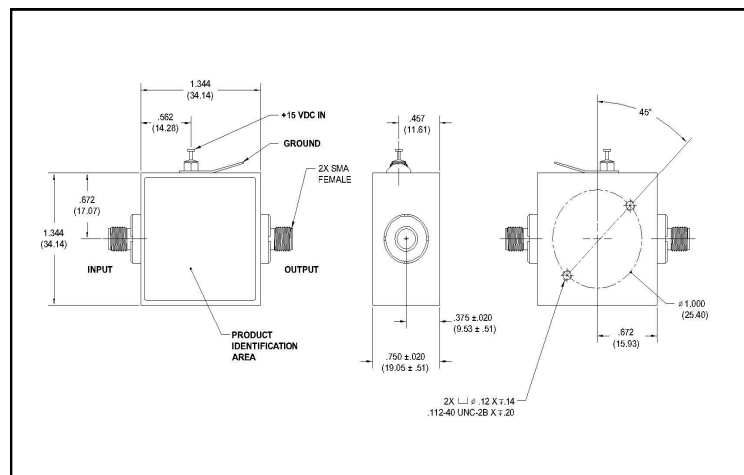
Dimensions in  $\phi$  are in mm  
Unless Otherwise Noted, .XXX =  $\pm 0.010$  (.254)  
.XX =  $\pm 0.002$  (.051)  
WEIGHT (APPROX) 0.00 UNCES 2.0 GRAMS

### Outline Drawing: SMA Connectorized \*

### Absolute Maximum Ratings <sup>1</sup>

| Parameter             | Absolute Maximum |
|-----------------------|------------------|
| Max. Input Power      | +13 dBm          |
| Vbias                 | +15.75 V         |
| Operating Temperature | -55°C to +85°C   |
| Storage Temperature   | -65°C to +125°C  |

1. Operation of this device above any one of these parameters may cause permanent damage.



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

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### Electrical Specifications: <sup>2,3</sup> T<sub>A</sub> = -55°C to +85°C Case Temperature

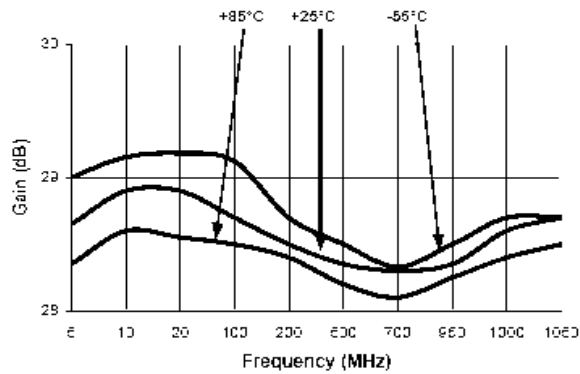
| Parameter                       | Test Conditions             | Frequency    | Units | Min.  | Typ.  | Max.  |
|---------------------------------|-----------------------------|--------------|-------|-------|-------|-------|
| Gain                            | @+25°C                      | 300 MHz      | dB    | 27.2  | 28.2  | 29.2  |
| Frequency Response              | —                           | 5 - 1000 MHz | dB    | —     | —     | ±1.2  |
| Gain Variation with Temperature | —                           | 5 - 1000 MHz | dB    | —     | —     | ±1.2  |
| 1 dB Compression                | Output Power                | 5 - 1000 MHz | dBm   | +9    | —     | —     |
| Noise Figure                    | —                           | 5 - 1000 MHz | dB    | —     | —     | 4.5   |
| Reverse Transmission            | —                           | 5 - 1000 MHz | dB    | —     | -36   | -32   |
| VSWR                            | —                           | 5 - 1000 MHz | Ratio | —     | —     | 2.0:1 |
| Output IP <sub>2</sub>          | Two-Tone inputs up to 0 dBm | 5 - 1000 MHz | dBm   | +28   | —     | —     |
| Output IP <sub>3</sub>          | Two-Tone inputs up to 0 dBm | 5 - 1000 MHz | dBm   | +18   | —     | —     |
| Vbias                           | —                           | —            | VDC   | +14.5 | +15.0 | +15.5 |
| Ibias                           | Vbias = +15.0 VDC           | —            | mA    | —     | 44    | 50    |
| Power Dissipation               | @ +15 V Bias                | —            | mW    | —     | 660   | —     |

2. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.

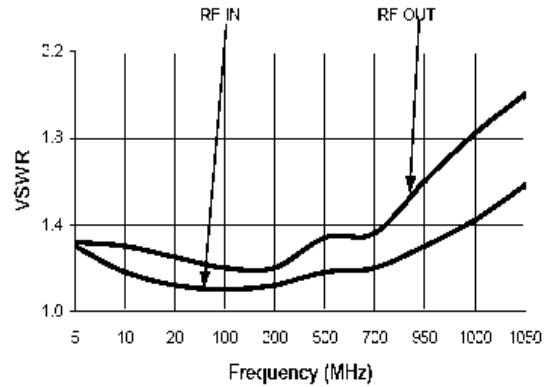
3. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 800 mW must be provided in use.

## Typical Performance Curves

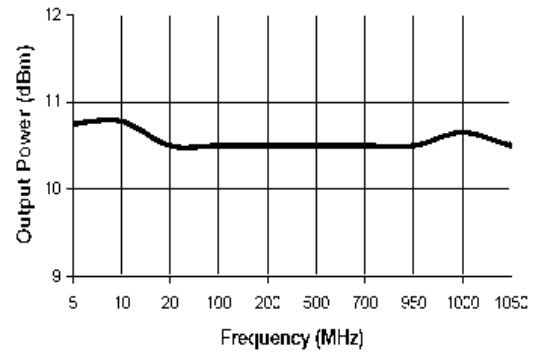
**Gain vs. Frequency**



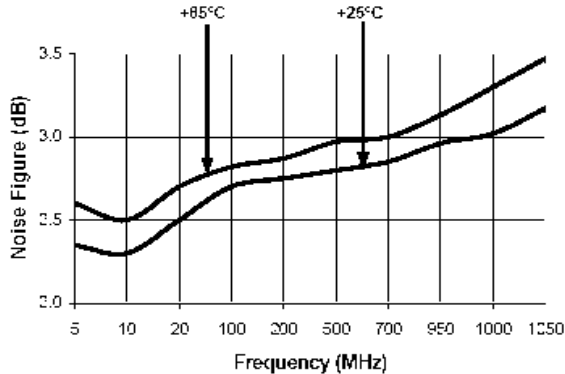
**VSWR vs. Frequency**



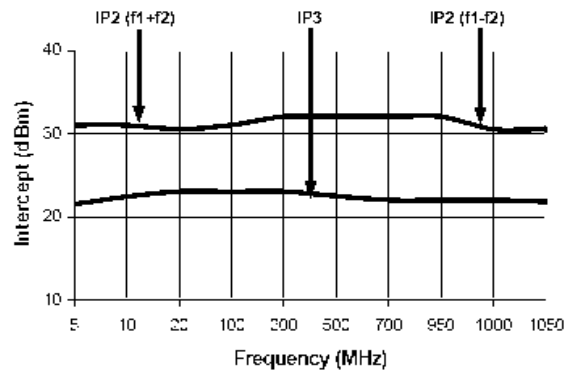
**1 dB Compression**



**Noise Figure**



**Intermodulation Intercept**



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