

AM-184 / AMC-184



Cascadable Thin Film Amplifier,
20 dB Gain, 10 - 2000 MHz

Rev. V4

Features

- 20 dB High Gain
- 60 mA Maximum Low Power

Description

M/A-COM's AM-184 is a 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-184 is ideally suited for use where a high intercept, high reliability amplifier is required.

Ordering Information

| Part Number | Package |
|-------------------------|---------------|
| AM-184 PIN ⁴ | TO-8-1 |
| AMC-184 SMA | Connectorized |

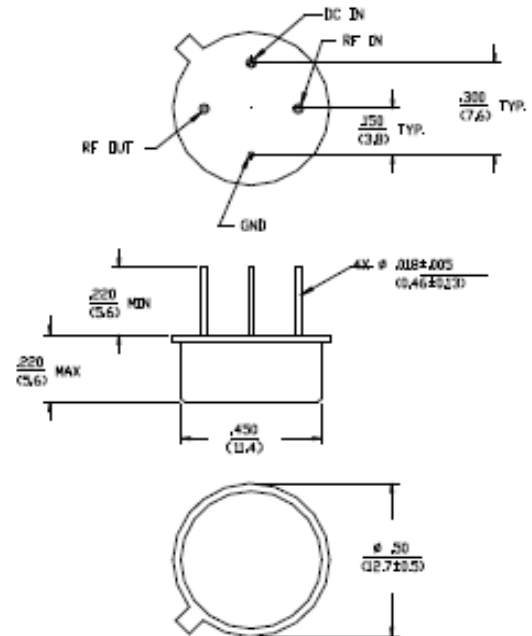
4. Mounting kit part number AU00071 required for PCB applications.

Absolute Maximum Ratings¹

| 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 |

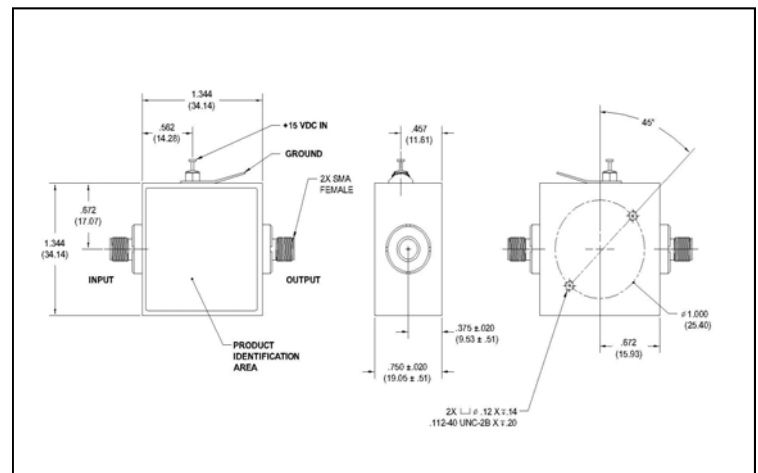
1. Operation of this device above any one of these parameters may cause permanent damage.

TO-8-1



Dimensions in ϕ are in mm
Unless Otherwise Noted, .XXX = ± 0.010 (.254)
.XX = ± 0.02 (.51)
WEIGHT (APPROX) (OZ) DIMENCES (G) GRAMS

Outline Drawing: SMA Connectorized^{*}



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

Electrical Specifications: ^{2,3} T_A = -55°C to +85°C Case Temperature

| Parameter | Test Conditions | Frequency | Units | Min. | Typ. | Max. |
|---------------------------------|-----------------------------|---------------|-------|-------|-------|-------|
| Gain | @+25°C | 1000 MHz | dB | 19.0 | 20.0 | 21.0 |
| Frequency Response | — | 10 - 2000 MHz | dB | — | — | ±1.5 |
| Gain Variation with Temperature | — | 10 - 2000 MHz | dB | — | — | ±1.5 |
| 1 dB Compression | Output Power | 10 - 2000 MHz | dBm | +10 | — | — |
| Noise Figure | — | 10 - 2000 MHz | dB | — | — | 6.0 |
| Reverse Transmission | — | 10 - 2000 MHz | dB | — | -30 | -27 |
| VSWR | — | 10 - 2000 MHz | Ratio | — | — | 2.0:1 |
| Output IP ₂ | Two-Tone inputs up to 0 dBm | 10 - 2000 MHz | dBm | +30 | — | — |
| Output IP ₃ | Two-Tone inputs up to 0 dBm | 10 - 2000 MHz | dBm | +20 | — | — |
| Vbias | — | — | VDC | +14.5 | +15.0 | +15.5 |
| Ibias | Vbias = +15.0 VDC | — | mA | — | 52 | 60 |
| Power Dissipation | @ +15 V Bias | — | mW | — | 780 | — |

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 1.0 W must be provided in use.

S-Parameter Data

| Frequency (MHz) | S11 MAG/ANG | S21 MAG/ANG | S12 MAG/ANG | S22 MAG/ANG |
|-----------------|-------------|-------------|-------------|-------------|
| 10 | 0.13/-171.5 | 10.33/6.2 | 0.03/4.5 | 0.10/80.7 |
| 20 | 0.12/-175.9 | 10.18/0.3 | 0.03/2.8 | 0.08/47.2 |
| 40 | 0.12/174.6 | 10.48/-4.6 | 0.03/1.4 | 0.08/7.2 |
| 100 | 0.12/165.0 | 10.51/-15.7 | 0.03/-1.8 | 0.06/-38.9 |
| 200 | 0.12/149.1 | 10.42/-32.4 | 0.03/-4.8 | 0.05/-76.4 |
| 500 | 0.12/105.1 | 10.13/-79.8 | 0.03/-12.1 | 0.10/-131.1 |
| 1000 | 0.12/9.8 | 9.60/-156.4 | 0.03/-27.2 | 0.12/173.5 |
| 1500 | 0.14/-99.8 | 9.53/126.5 | 0.02/-51.5 | 0.14/-89.3 |
| 2000 | 0.28/176.9 | 9.63/53.4 | 0.01/-75.0 | 0.30/-142.7 |

Typical Performance Curves

