

AM-183 / AMC-183



Cascadable Thin Film Amplifier,
28.5 dB Gain, 10 - 600 MHz

Rev. V5

Features

- 28 dB Typical Gain
- +15 dBm Typical 1 dB Compression

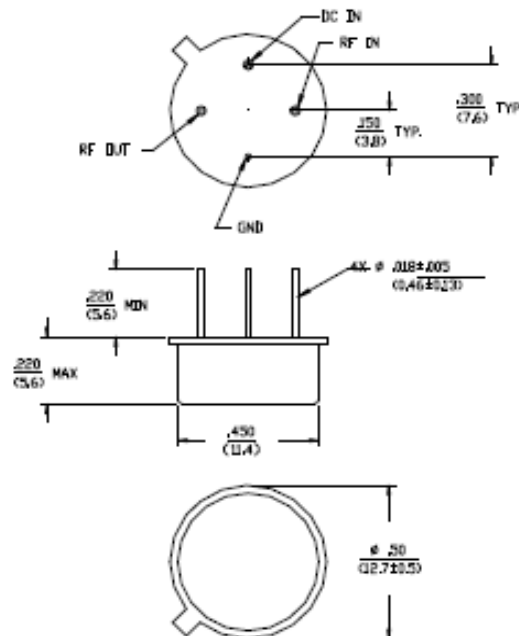
Description

M/A-COM's AM-183 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-183 is ideally suited for use where a high compression, high reliability amplifier is required.

Ordering Information

| Part Number | Package |
|-------------|---------------|
| AM-183 PIN | TO-8-1 |
| AMC-183 SMA | Connectorized |

TO-8-1



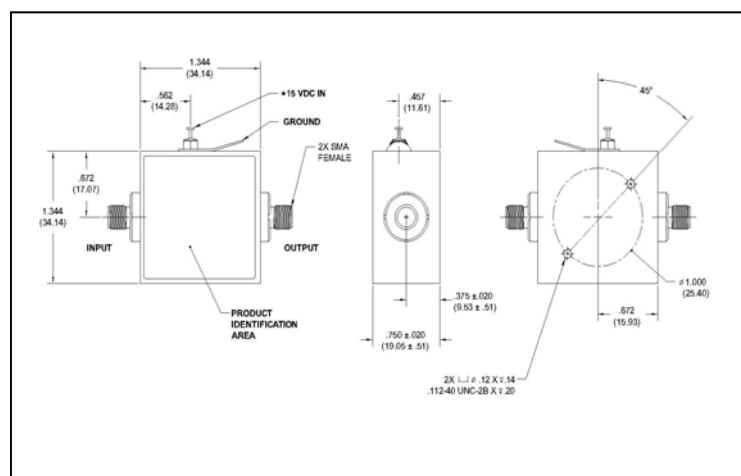
Dimensions in ϕ are in mm
Unless Otherwise Noted .XXX = ± 0.010 .XX = ± 0.25
.XX = ± 0.02 (X = ± 0.5)
WEIGHT (APPROX) (10) DUNCES 2.0 GRAMS

Outline Drawing: SMA Connectorized *

Absolute Maximum Ratings ¹

| 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) ± 0.015 (0.38) unless otherwise specified.

AM-183 / AMC-183



Cascadable Thin Film Amplifier,
28.5 dB Gain, 10 - 600 MHz

Rev. V5

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

| Parameter | Test Conditions | Frequency | Units | Min. | Typ. | Max. |
|---------------------------------|-----------------------------|------------------------------|----------|--------|--------|------------|
| Gain | @+25°C | 400 MHz | dB | 27.5 | 28.5 | 29.5 |
| Frequency Response | — | 10 - 600 MHz | dB | — | — | ±1.5 |
| Gain Variation with Temperature | — | 10 - 600 MHz | dB | — | — | ±1.2 |
| 1 dB Compression | Output Power | 10 - 600 MHz | dBm | +13 | — | — |
| Noise Figure | — | 10 - 500 MHz 10 - 600 MHz | dB dB | — — | — — | 4.5 5.0 |
| Reverse Transmission | — | 10 - 600 MHz | dB | — | -35 | -32 |
| VSWR | — | 10 - 600 MHz | Ratio | — | — | 2.0:1 |
| Output IP ₂ | Two-Tone inputs up to 0 dBm | 10 - 600 MHz | dBm | +30 | — | — |
| Output IP ₃ | Two-Tone inputs up to 0 dBm | 10 - 600 MHz | dBm | +20 | — | — |
| Vbias | — | — | VDC | +14.5 | +15.0 | +15.5 |
| Ibias | Vbias = +15.0 VDC | — | mA | — | 72 | 80 |
| Power Dissipation | @ +15 V Bias | — | mW | — | 1.1 | — |

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 1.2 W must be provided in use.

S-Parameter Data

| Frequency (MHz) | S11 MAG/ANG | S21 MAG/ANG | S12 MAG/ANG | S22 MAG/ANG |
|-----------------|-------------|--------------|-------------|-------------|
| 5 | 0.14/-148.3 | 31.43/17.9 | 0.01/1.9 | 0.20/177.2 |
| 10 | 0.13/170.1 | 32.36/6.3 | 0.01/1.6 | 0.12/92.7 |
| 20 | 0.13/-178.3 | 32.65/-2.6 | 0.01/1.3 | 0.09/69.8 |
| 50 | 0.12/179.2 | 33.31/-13.6 | 0.01/-0.5 | 0.06/-72.9 |
| 100 | 0.11/-178.0 | 33.09/-29.3 | 0.01/-2.1 | 0.05/-98.1 |
| 250 | 0.12/171.1 | 31.87/-71.9 | 0.01/-9.3 | 0.06/-123.4 |
| 500 | 0.12/129.7 | 29.37/-144.8 | 0.01/-22.1 | 0.17/-153.9 |
| 750 | 0.14/-44.0 | 27.01/145.8 | 0.01/-45.8 | 0.25/178.1 |

2

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.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588

Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Typical Performance Curves

