# AM-183 / AMC-183

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

### 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**

Absolute Maximum Ratings<sup>1</sup>

Parameter

Max. Input Power

Vbias

**Operating Temperature** 

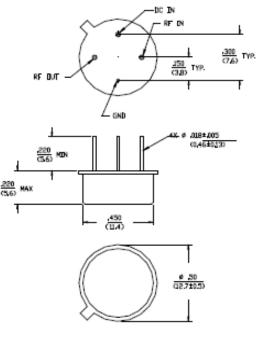
Storage Temperature

may cause permanent damage.

1

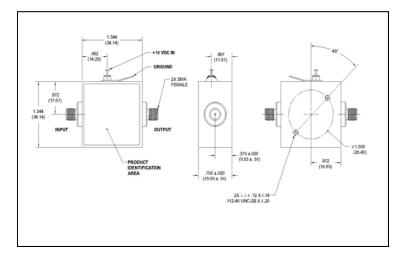
Part Number	Package			
AM-183 PIN	TO-8-1			
AMC-183 SMA	Connectorized			

### TO-8-1



Dinensions in O are in nn Unless Ditherwise Noted XXX = ±0,00 XX = ±0,25 XX = ±0,02 XX = ±0,5 WEISHT (WPRID): 0.10 DUNCES 2.8 GRAMS

## Outline Drawing: SMA Connectorized \*



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

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1. Operation of this device above any one of these parameters

**Absolute Maximum** 

+13 dBm

+15.75 V

-55°C to +85°C

-65°C to +125°C

- 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.

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Rev. V5

# AM-183 / AMC-183

# Technology Solutions

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Rev. V5

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

Parameter	Test Conditions	Frequency	Units	Min.	Тур.	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 <sub>2</sub>	Two-Tone inputs up to 0 dBm	10 - 600 MHz	dBm	+30	_	—
Output IP <sub>3</sub>	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

equency (MHz)	11 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

<sup>2</sup> 

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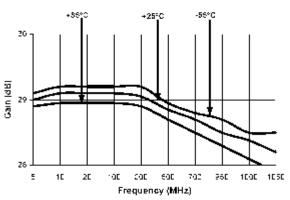
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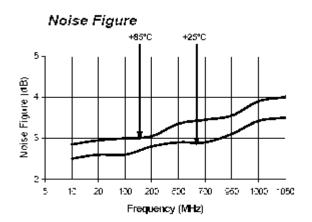
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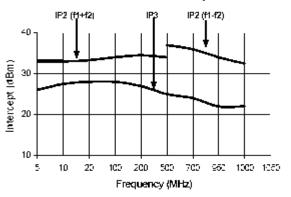
## **Typical Performance Curves**

#### Gain vs. Frequency





Intermodulation Intercept

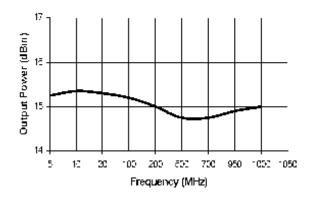




Rev. V5

VSWR vs. Frequency RF OUT RF 2.2 1.8 VSWR 1.4 1.E 5 ÷0 20 202 500 720 552 1202 hasa 120 Frequency (MHz)

1 dB Compression



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<sup>3</sup>