AM-183 / AMC-183

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

Rev. V5

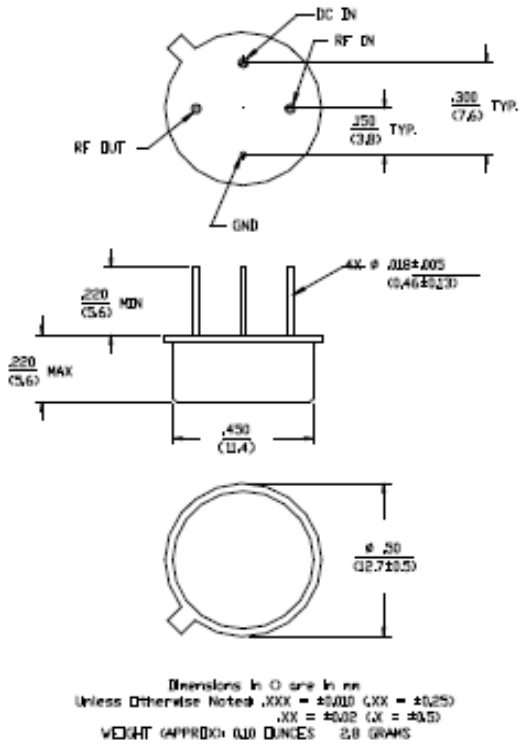
Features

- 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.

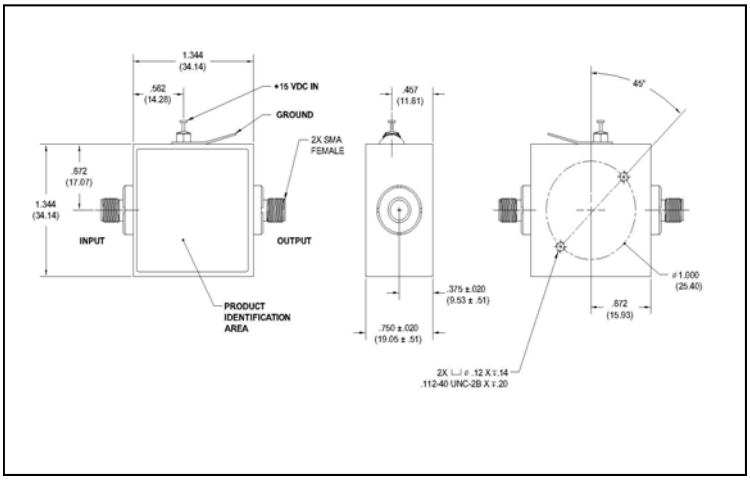
TO-8-1



Ordering Information

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

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.

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

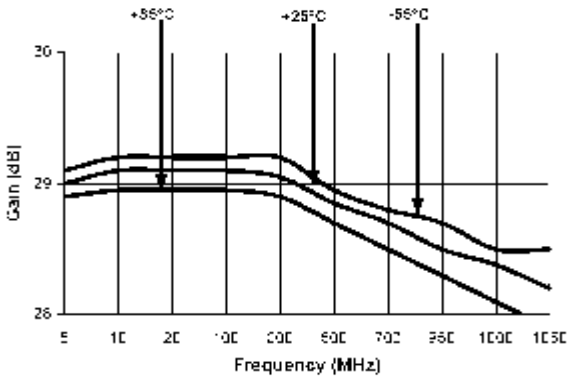
2. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.
3. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 1.2 W must be provided in use.

S-Parameter Data

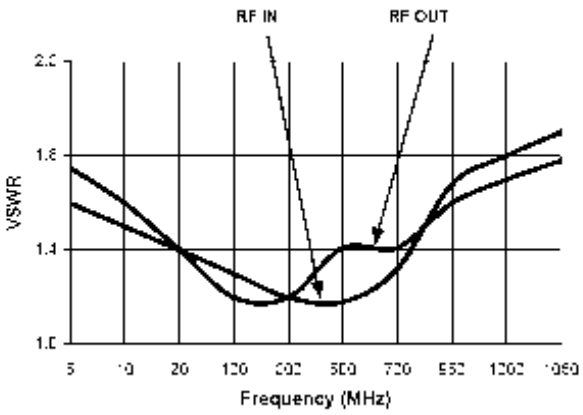
equency (MHz)	11 MAG/ANG	S21 MAG/ANG	S12 MAG/ANG	S22 MAG/ANG
5	0.14/-148.3	31.43/17.9	0.01/1.9	0.20/177.2
10	0.13/170.1	32.36/6.3	0.01/1.6	0.12/92.7
20	0.13/-178.3	32.65/-2.6	0.01/1.3	0.09/69.8
50	0.12/179.2	33.31/-13.6	0.01/-0.5	0.06/-72.9
100	0.11/-178.0	33.09/-29.3	0.01/-2.1	0.05/-98.1
250	0.12/171.1	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

Typical Performance Curves

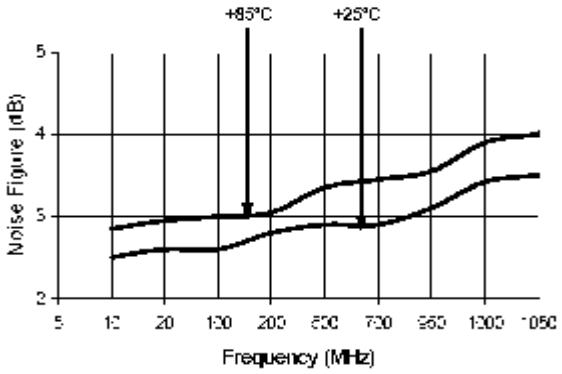
Gain vs. Frequency



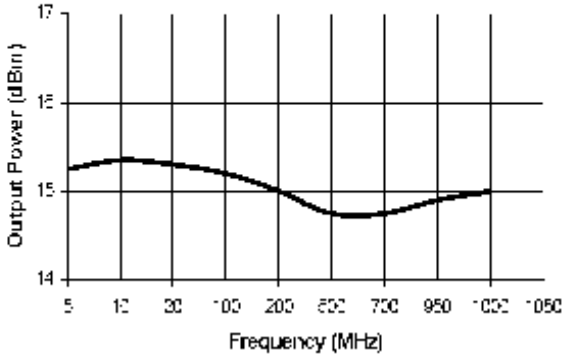
VSWR vs. Frequency



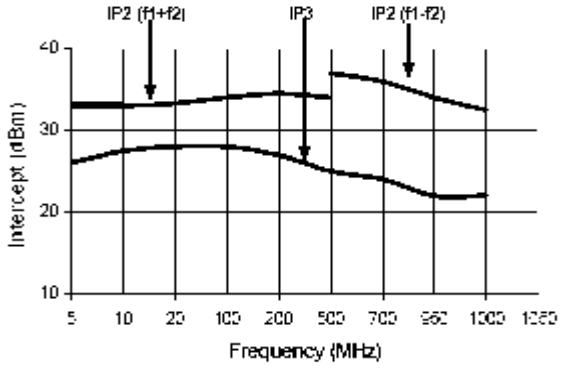
Noise Figure



1 dB Compression



Intermodulation Intercept



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