AM-180 / AMC-180

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

Rev. V4

Features

- +14 dBm Typical 1 dB Compression
- 5 dB Typical Noise Figure
- 1.4:1 Typical VSWR

Description

M/A-COM's AM-180 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-180 is ideally suited for use where a high intercept, high reliability amplifier is required.

Ordering Information

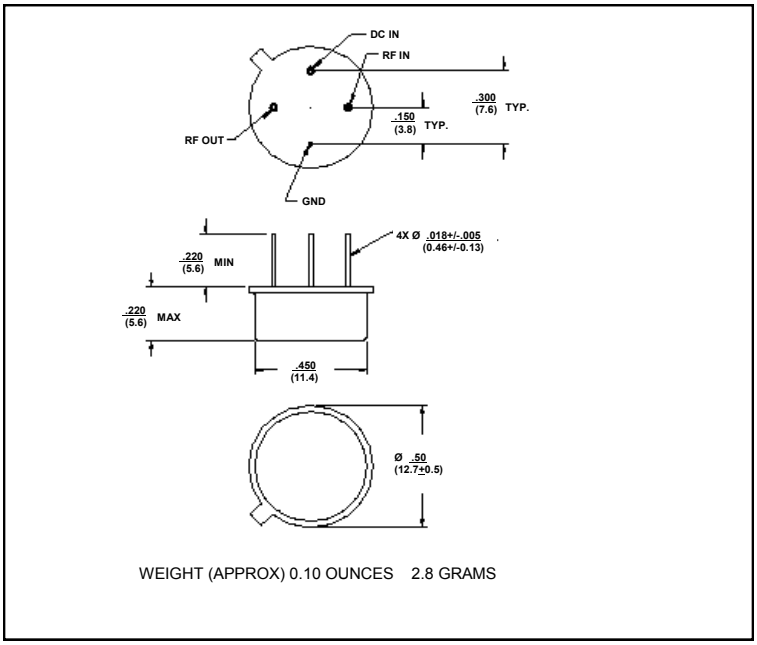
Part Number	Package
AM-180 PIN	TO-8-1
AMC-180 SMA	Connectorized

Absolute Maximum Ratings [1]

Parameter	Absolute Maximum
Max. Input Power	+10 dBm
Vbias	+15.75 V
Operating Temperature	-55°C to +85°C
Storage Temperature	-65°C to +125°C

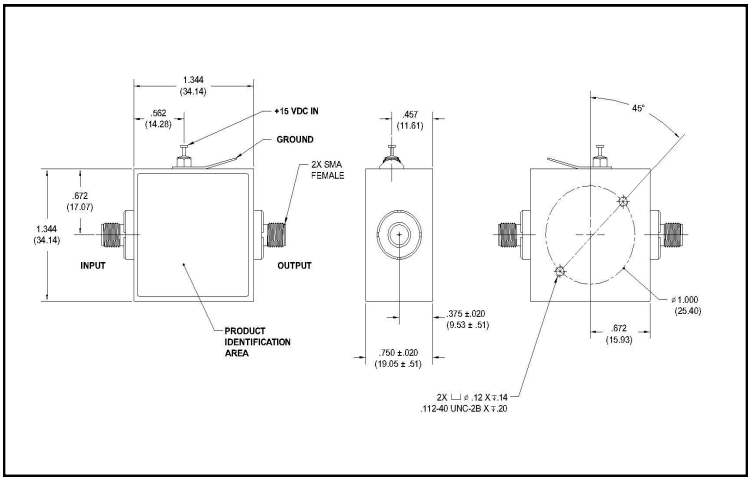
1. Operation of this device above any one of these parameters may cause permanent damage.

Outline Drawing: TO-8-1 *



WEIGHT (APPROX) 0.10 OUNCES 2.8 GRAMS

Outline Drawing: SMA Connectorized *



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

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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	1000 MHz	dB	8.7	9.7	10.7
Frequency Response	—	10 - 2000 MHz	dB	—	—	±1.0
Gain Variation with Temperature	—	10 - 2000 MHz	dB	—	—	±1.0
1 dB Compression	Output Power	10 - 2000 MHz	dBm	+13	—	—
Noise Figure	—	10 - 2000 MHz	dB	—	—	7.0
Reverse Transmission	—	10 - 2000 MHz	dB	—	-14	-12
VSWR	—	10 - 2000 MHz	Ratio	—	—	2:1
Output IP_2	Two-Tone inputs up to 0 dBm	10 - 2000 MHz	dBm	+39	—	—
Output IP_3	Two-Tone inputs up to 0 dBm	10 - 2000 MHz	dBm	+25	—	—
Vbias	—	—	VDC	+14.5	+15.0	+15.5
Ibias	Vbias = +15.0 VDC	—	mA	—	45	50
Power Dissipation	@ +15 V Bias	—	mW	—	680	—

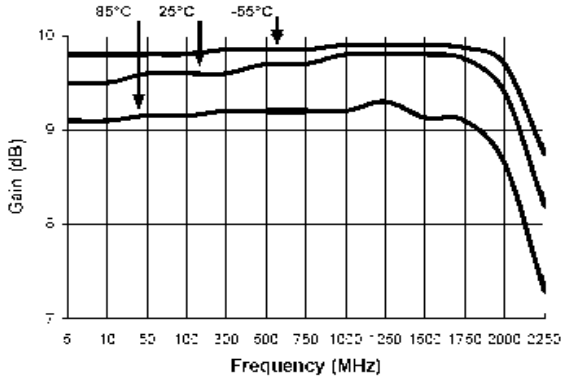
2. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.
3. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 800 mW must be provided in use.

S-Parameter Data

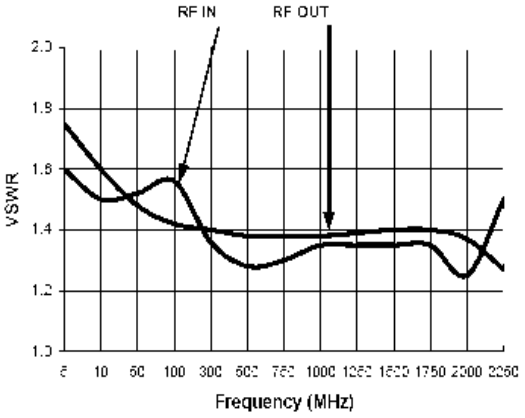
Frequency (MHz)	S11 MAG/ANG	S21 MAG/ANG	S12 MAG/ANG	S22 MAG/ANG
10	0.20/-156.1	2.97/-173.1	0.17/8.6	0.24/166.9
20	0.21/-169.7	2.98/-177.4	0.17/4.4	0.23/170.3
40	0.22/-174.2	3.01/179.0	0.18/1.7	0.22/171.1
100	0.23/174.3	3.02/171.6	0.18/-1.4	0.21/166.1
200	0.18/170.9	3.01/162.0	0.18/-4.5	0.20/154.5
500	0.13/149.3	3.05/134.3	0.19/-14.1	0.18/113.3
1000	0.07/-140.6	3.12/86.4	0.20/-35.9	0.17/5.5
1500	0.18/-133.3	3.05/32.4	0.18/-59.6	0.20/-93.3
2000	0.24/168.2	3.01/-23.7	0.17/-76.2	0.26/-147.3

Typical Performance Curves

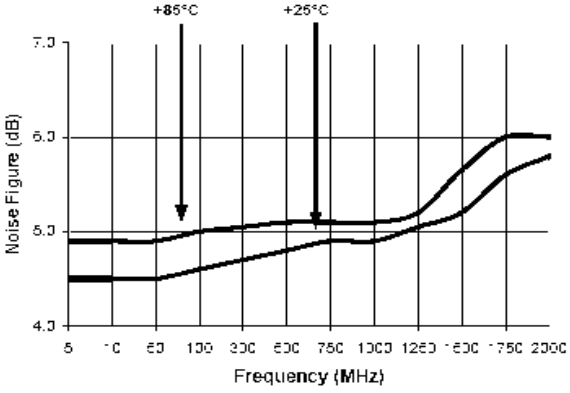
Gain vs. Frequency



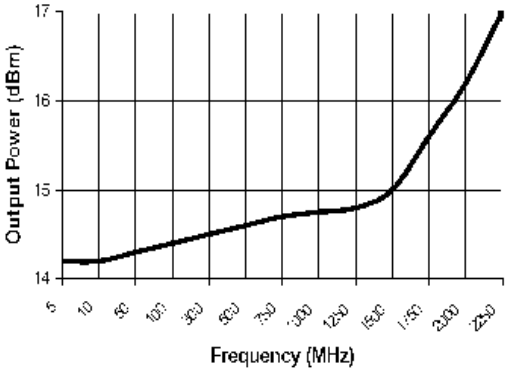
VSWR vs. Frequency



Noise Figure



1 dB Compression



Intermodulation Intercept