

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

AM-180

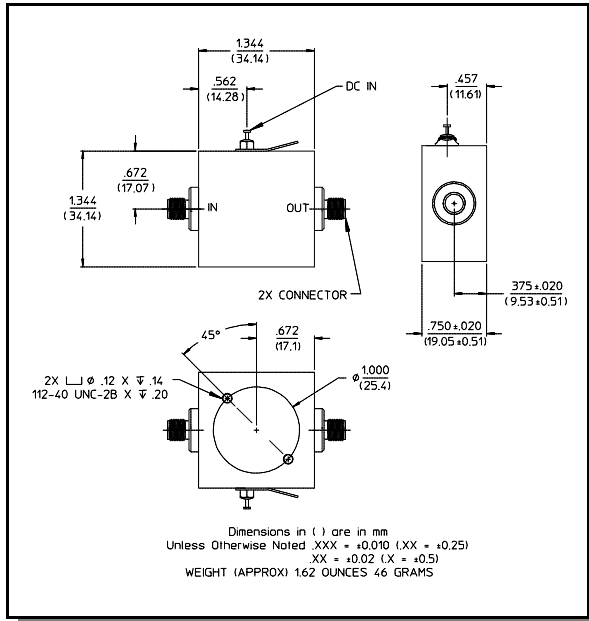
Features

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

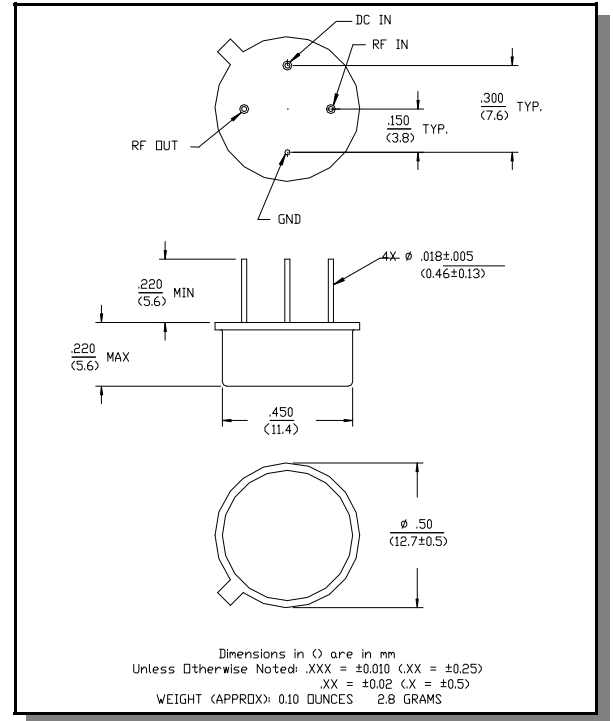
Description

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.

C-32



TO-8-1



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.

Electrical Specifications ^{2,3} $T_A = -55^\circ\text{C}$ to $+85^\circ\text{C}$ 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	—	—	V	+14.5	+15.0	+15.5
Ibias	Vbias = +15.0 VDC	—	mA	—	45	50
Power Dissipation	@ +15V 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		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	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

Specifications subject to change without notice.

- North America: Tel. (800) 366-2266
- Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
- Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

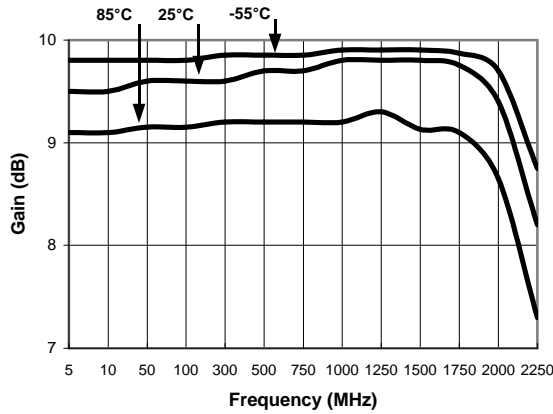
Visit www.macom.com for additional data sheets and product information.

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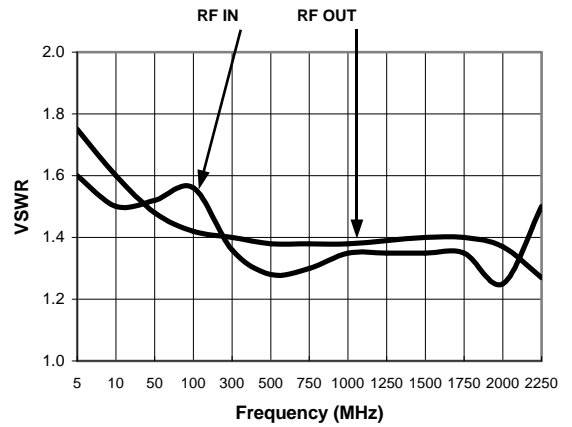
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Typical Performance Curves

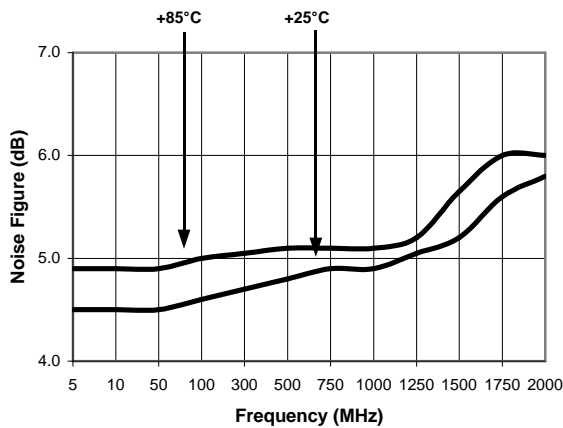
Gain vs. Frequency



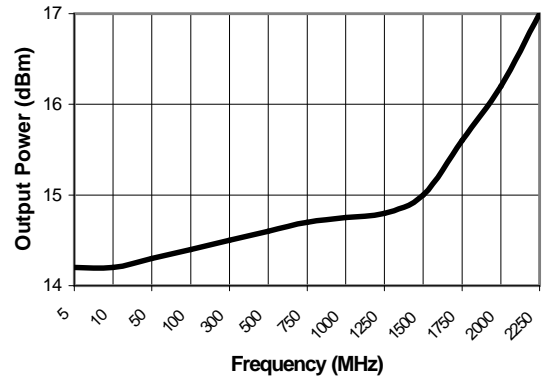
VSWR vs. Frequency



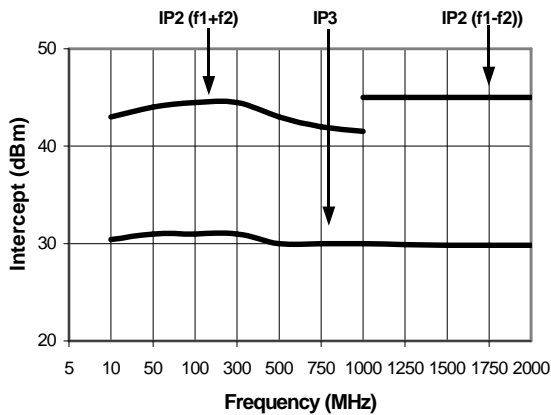
Noise Figure



1 dB Compression



Intermodulation Intercept



Ordering Information

Part Number	Package
AM-180 PIN	TO-8-1
AMC-180 SMA	C-32

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