

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

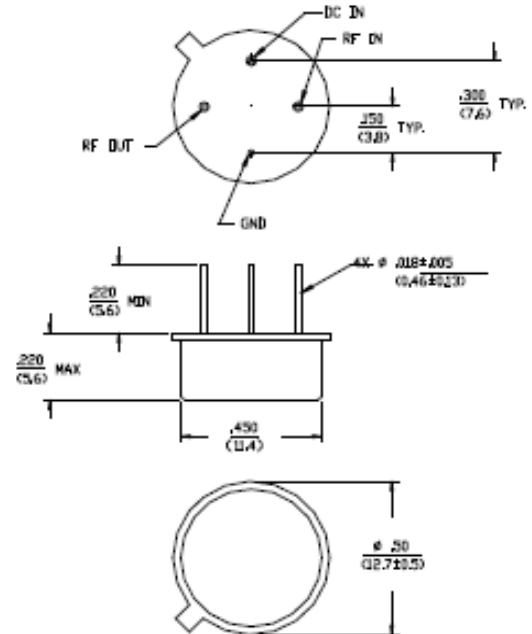
Description

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

TO-8-1



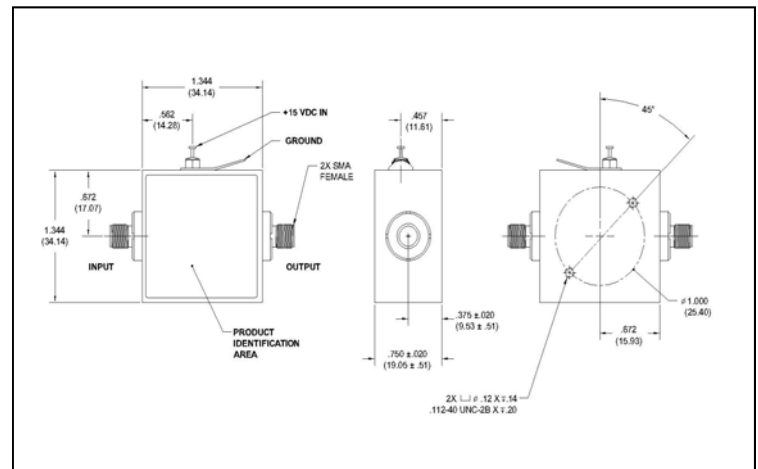
Dimensions in ϕ are in mm
Unless Otherwise Noted .XXX = ± 0.010 .XX = ± 0.25
.XX = ± 0.02 (X = ± 0.5)
WEIGHT (APPROX) (10) DUNCES 2.0 GRAMS

Outline Drawing: SMA Connectorized *

Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
Max. Input Power	+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.



* 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

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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 for test data may be available. Commitment to produce in volume is not guaranteed.

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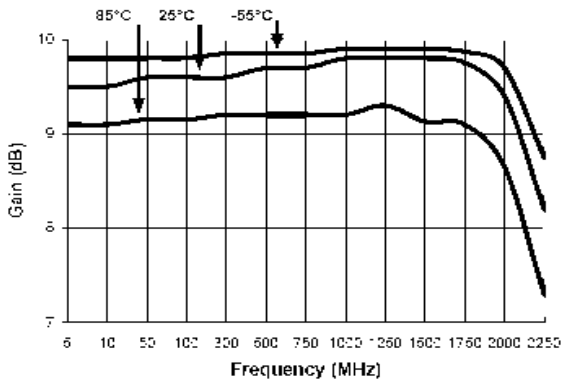
Visit www.macomtech.com for additional data sheets and product information.

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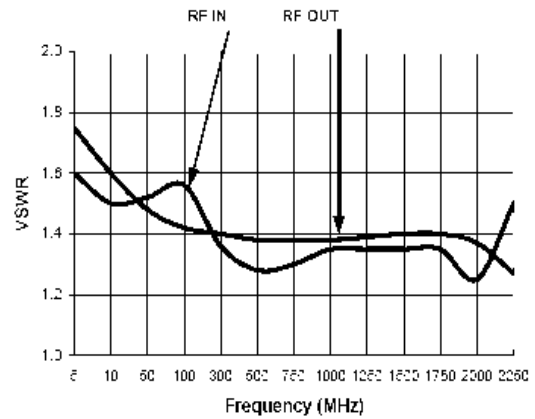
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Typical Performance Curves

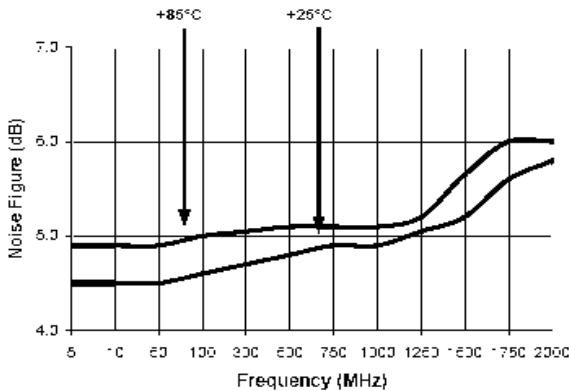
Gain vs. Frequency



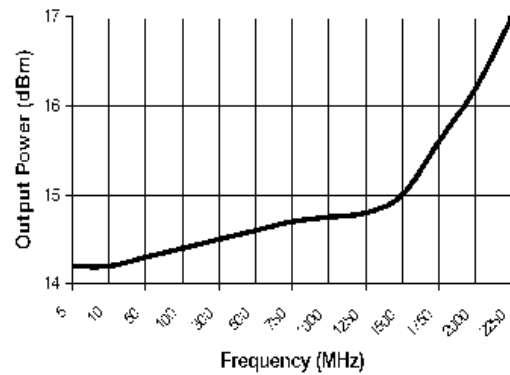
VSWR vs. Frequency



Noise Figure



1 dB Compression



Intermodulation Intercept

