

## Features

- 4.0 dB Typical Noise Figure
- 13.5 dBm Typical Midband 1 dB Compression
- 1.25:1 Typical VSWR

## Description

M/A-COM's AM-176 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-176 is ideally suited for use where a high intercept, high reliability amplifier is required.

## Ordering Information

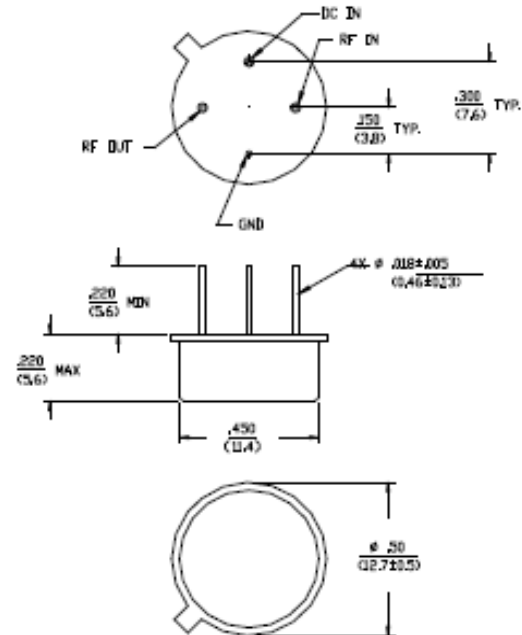
Part Number	Package
AM-176 PIN	TO-8-1
AMC-176 SMA	Connectorized

## Absolute Maximum Ratings <sup>1</sup>

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

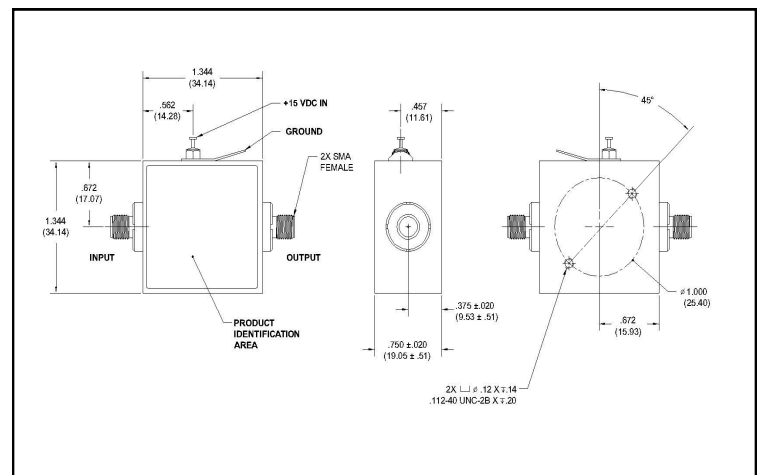
1. Operation of this device above any one of these parameters may cause permanent damage.

## TO-8-1



Dimensions in  $\varnothing$  are in mm  
 Unless Otherwise Noted .XXX =  $\pm 0.001$  (.025)  
 .XX =  $\pm 0.02$  (.5)  
 WEIGHT (APPROX) 0.0 UNCES 2.8 GRAMS

## Outline Drawing: SMA Connectorized \*



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

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

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Gain	@+25°C	500 MHz	dB	12.2	13.2	14.2
Frequency Response	—	5 - 1000 MHz	dB	—	—	±1.0
Gain Variation with Temperature	—	5 - 1000 MHz	dB	—	—	±1.0
1 dB Compression	Output Power	5 - 1000 MHz	dBm	+12	—	—
Noise Figure	—	5 - 1000 MHz	dB	—	—	5.0
Reverse Transmission	—	5 - 1000 MHz	dB	—	-17	-14
VSWR	—	5 - 1000 MHz	Ratio	—	—	1.8:1
Output IP <sub>2</sub>	Two-Tone inputs up to 0 dBm	5 - 1000 MHz	dBm	+37	—	—
Output IP <sub>3</sub>	Two-Tone inputs up to 0 dBm	5 - 1000 MHz	dBm	+25	—	—
Vbias	—	—	VDC	+14.5	+15.0	+15.5
Ibias	Vbias = +15.0 VDC	—	mA	—	38	43
Power Dissipation	@ +15 V Bias	—	mW	—	570	—

2. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.

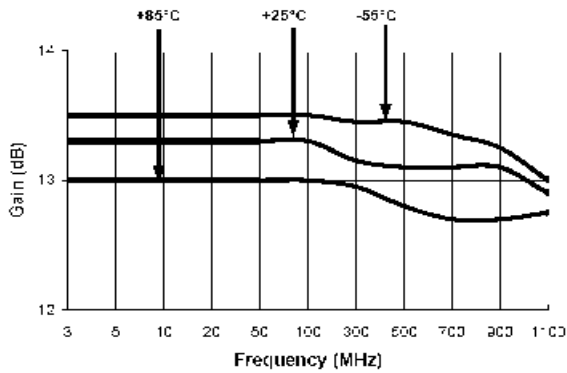
3. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 650 mW must be provided in use.

## S-Parameter Data

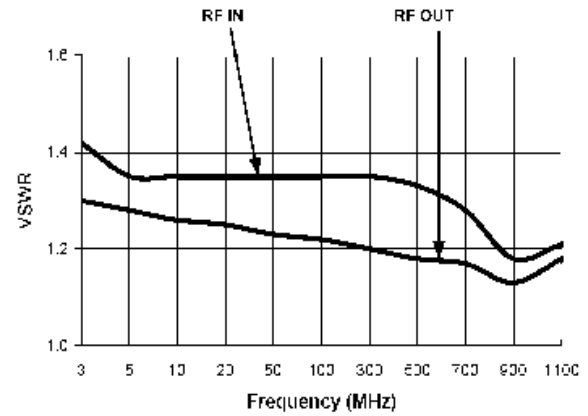
Frequency (MHz)	S11 MAG/ANG	S21 MAG/ANG	S12 MAG/ANG	S22 MAG/ANG
5	0.14/151.3	4.59/-168.1	0.13/-0.9	0.12/144.6
10	0.14/168.4	4.67/-175.5	0.13/0.1	0.10/156.3
20	0.14/178.2	4.61/-179.6	0.13/0.0	0.09/166.5
50	0.14/167.9	4.61/174.5	0.13/-0.1	0.09/170.5
100	0.13/161.6	4.58/168.6	0.13/-1.0	0.08/166.8
250	0.12/132.4	4.56/10.1	0.14/-3.5	0.08/149.9
500	0.10/83.9	4.57/119.8	0.15/-9.0	0.07/121.3
750	0.08/39.7	4.52/89.1	0.16/-17.7	0.05/76.1
1000	0.04/-91.4	4.39/58.4	0.16/-28.4	0.07/-9.9

## Typical Performance Curves

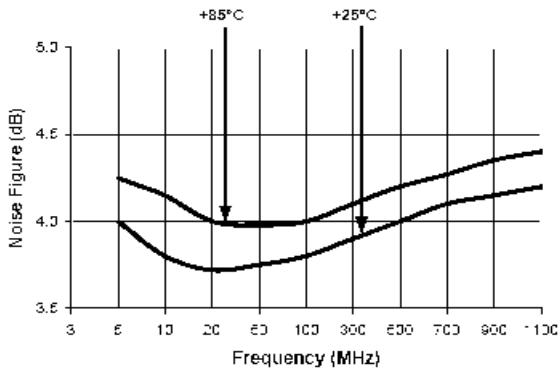
**Gain vs. Frequency**



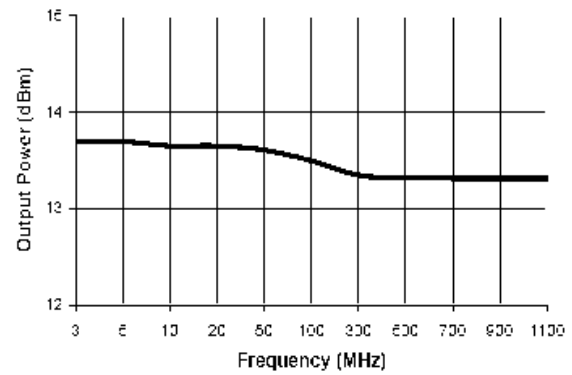
**VSWR vs. Frequency**



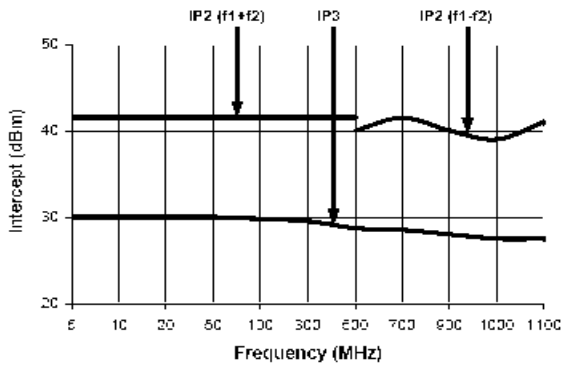
**Noise Figure**



**1 dB Compression**



**Intermodulation Intercept**



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