

# High Dynamic Range Amplifier, 12.5 dB Gain, 300 - 1000 MHz

AM-155

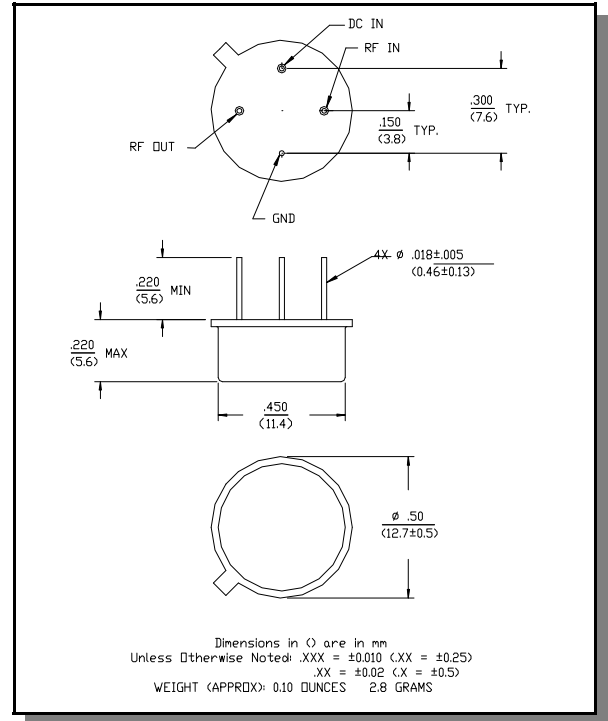
## Features

- 2.5 dB Typical Midband Noise Figure
- +21 dBm Typical Midband Output Power
- +37 dBm Typical Midband Third Order Intercept

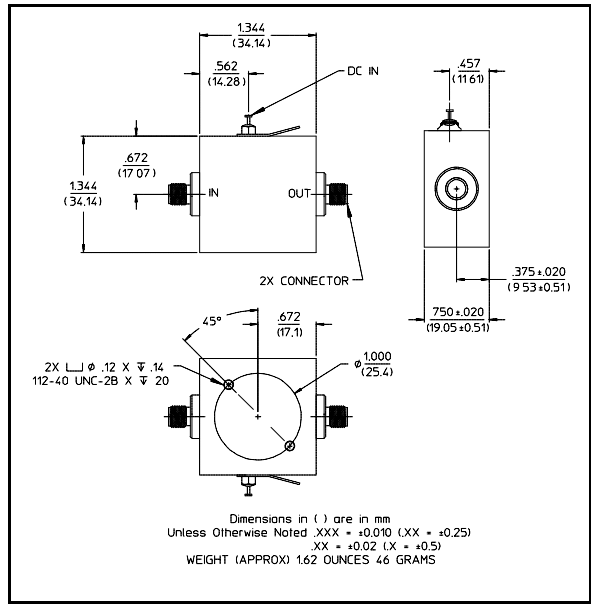
## Description

M/A-COM's AM-155 is a coupler feedback amplifier with high intercept and compression points. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a TO-8 package. Due to the internal power dissipation the thermal rise minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM-155 is ideally suited for use where a high intercept, high reliability amplifier is required.

## TO-8-1



## C-32



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

Parameter	Absolute Maximum
Max. Input Power	+10 dBm
V <sub>bias</sub>	+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 <sup>2,3</sup>  $T_A = -55^\circ\text{C}$  to  $+85^\circ\text{C}$  Case Temperature

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Gain	@ +25°C	600 MHz	dB	11.25	12.25	13.25
Frequency Response	—	300-1000 MHz	dB	—	—	±0.5
Gain Variation with Temperature	—	300-1000 MHz	dB	—	—	±0.7
1 dB Compression	Output Power	300-1000 MHz	dBm	+18	—	—
Noise Figure	—	300-700 MHz 300-1000 MHz	dB dB	— —	— —	4.0 5.5
Reverse Transmission	—	300-1000 MHz	dB	—	-14	-10
VSWR	Input Output	300-1000 MHz	Ratio Ratio	— —	— —	2.0:1 3.0:1
Output IP <sub>2</sub>	Two-tone inputs up to +5 dBm	300-1000 MHz	dBm	+40	—	—
Output IP <sub>3</sub>	Two-tone inputs up to +5 dBm	300-1000 MHz	dBm	+27	—	—
Vbias	—	—	VDC	+14.5	+15.0	+15.5
Ibias	Vbias = +15.0 VDC	—	mA	—	50	60
Power Dissipation	@ +15V Bias	—	mW	—	750	—

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 0.9W must be provided in use.

## S-Parameter Data

Frequency (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
300	0.30	42.3	4.05	166.3	0.18	173.3	0.36	87.8
350	0.26	12.9	4.12	153.2	0.18	161.3	0.33	80.5
400	0.24	-25.7	4.13	142.0	0.19	150.6	0.30	76.2
500	0.20	-88.2	4.03	122.0	0.20	131.8	0.28	73.4
600	0.23	-123.0	3.94	104.9	0.20	115.3	0.27	67.8
700	0.26	-144.7	3.88	89.4	0.21	100.1	0.28	51.3
800	0.29	-163.9	3.88	74.5	0.21	85.2	0.28	21.3
900	0.27	175.6	4.01	59.5	0.22	69.8	0.30	-20.2
1000	0.25	147.1	4.22	41.3	0.23	53.6	0.32	-63.0

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

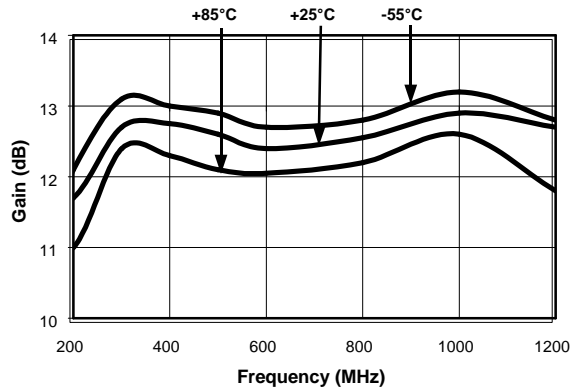
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

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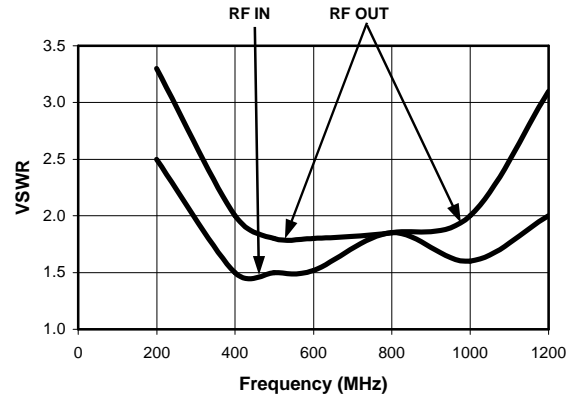
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Typical Performance Curves

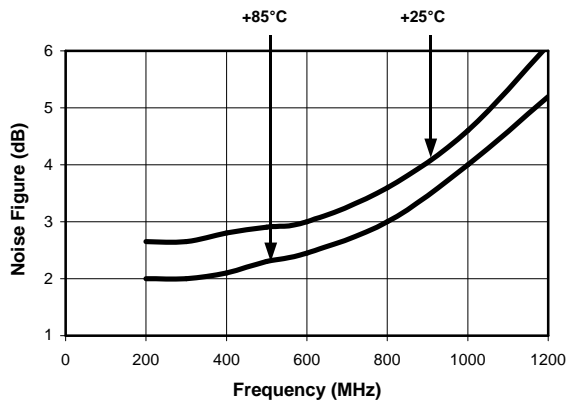
Gain vs. Frequency



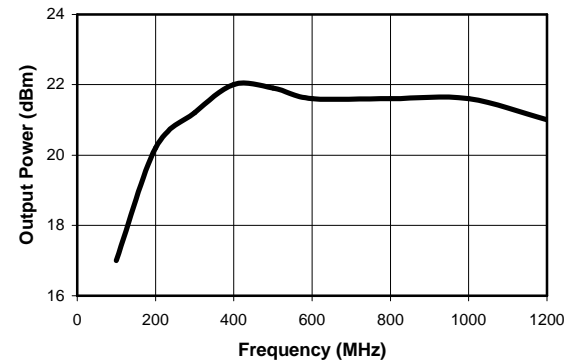
VSWR vs. Frequency



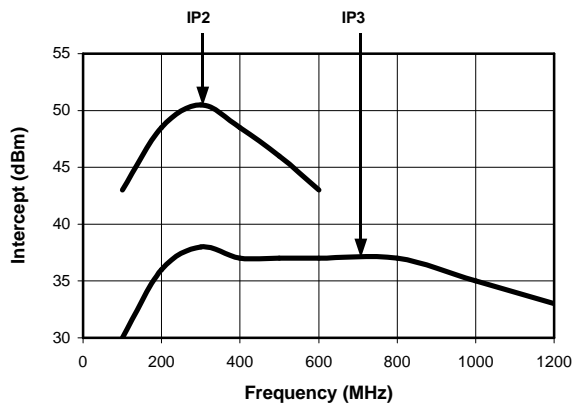
Noise Figure



1 dB Compression



Intermodulation Intercept



Ordering Information

Part Number	Package
AM-155 PIN <sup>4</sup>	TO-8-1
AMC-155 SMA	Connectorized

4. Mounting kit part number AU00071 required for PCB applications.

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