Low Noise Amplifier, 12.5 dB Gain, 10 - 100 MHz

V3.00

AM-/AMC-/AMS-162

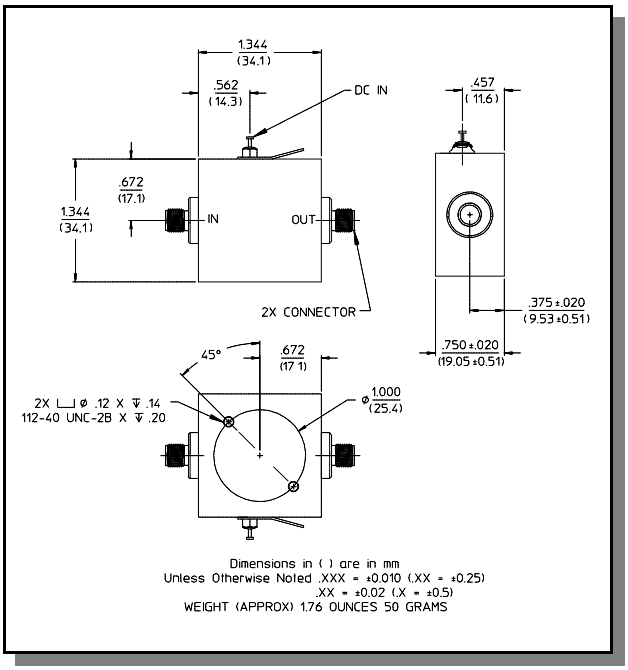
Features

- 1.1 dB Typical Low Noise Figure @ 50 MHz
- +15 dBm Typical High Output Power @ 50 MHz
- +32 dBm Typical Third Order Intercept @ 50 MHz
- Fully Hermetic Package (AM-162, AMS-162)

Description

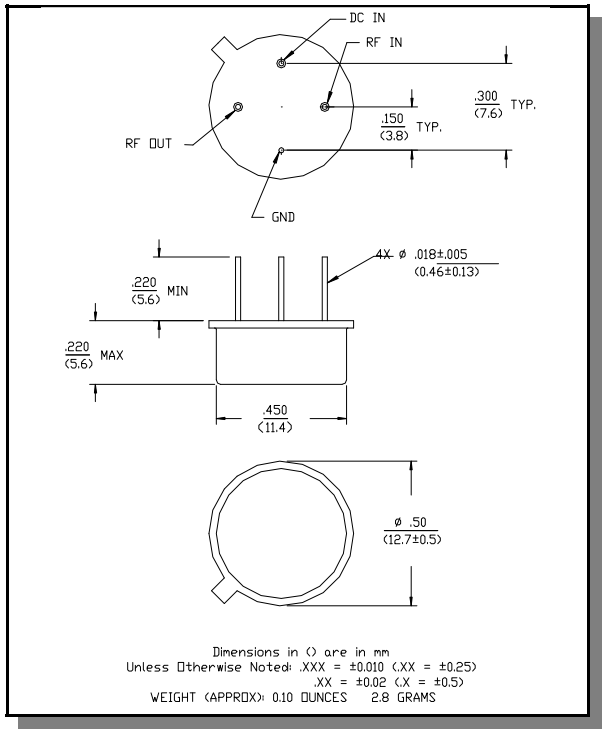
M/A-COM's AM-162 is a coupler feedback amplifier with high intercept and compression points. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a flatpack with flanges. Due to the internal power dissipation the thermal rise minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM-162 are ideally suited for use where a high intercept, high reliability amplifier is required.

C-6



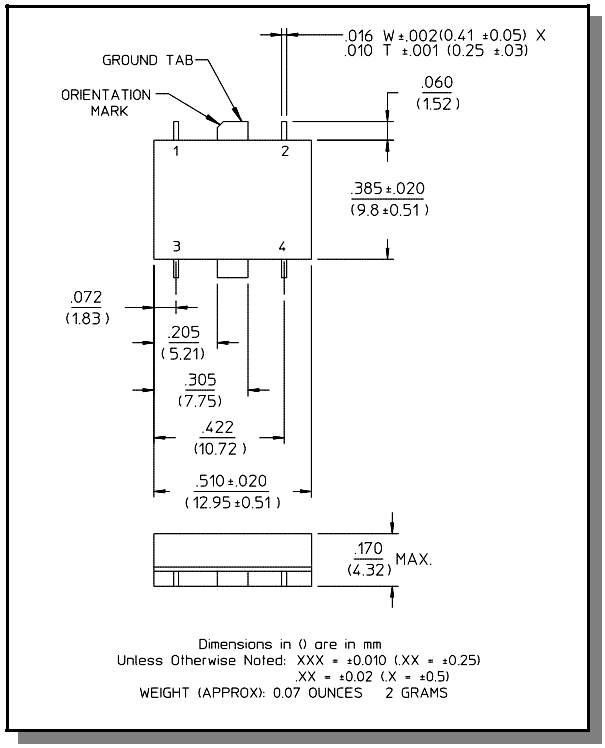
Dimensions in ( ) are in mm
Unless Otherwise Noted .XXX = ±0.010 (.XX = ±0.25)
.XX = ±0.02 (.X = ±0.5)
WEIGHT (APPROX) 1.76 OUNCES 50 GRAMS

TO-8-1



Dimensions in () are in mm
Unless Otherwise Noted: .XXX = ±0.010 (.XX = ±0.25)
.XX = ±0.02 (.X = ±0.5)
WEIGHT (APPROX): 0.10 OUNCES 2.8 GRAMS

SF-1



Dimensions in () are in mm
Unless Otherwise Noted: XXX = ±0.010 (.XX = ±0.25)
.XX = ±0.02 (.X = ±0.5)
WEIGHT (APPROX): 0.07 OUNCES 2 GRAMS

Electrical Specifications [1] T_A = -55°C to +85°C Case Temperature

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Gain	@ +25°C	50 MHz	dB	12.0	12.5	13.0
Frequency Response	—	10 - 100 MHz	dB	—	—	±0.6
Gain Variation with Temperature	—	10 - 100 MHz	dB	—	—	±0.6
1 dB Compression	Output Power	10 - 100 MHz	dBm	+13	—	—
Noise Figure	—	10 - 100 MHz	dB	—	—	1.6
Reverse Transmission	—	10 - 100 MHz	dB	—	-15	-14
VSWR	—	10 - 100 MHz	Ratio	—	—	2.0:1
Output IP_2	Two-tone inputs up to 0 dBm	10 - 100 MHz	dBm	+40	—	—
Output IP_3	Two-tone inputs up to 0 dBm	10 - 100 MHz	dBm	+26	—	—
Vbias	—	—	VDC	+14.5	+15.0	+15.5
Ibias	Vbias = +15.0 VDC	—	mA	—	11	15
Power Dissipation	@ +15V Bias	—	mW	—	165	—

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

S-Parameter Data

Frequency (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.07	165	4.06	66	0.18		0.09	169.1
20	0.09	-166.8	4.13	-6.5	0.17		0.09	-159.2
30	0.08	-151.5	4.18	-15.8	0.17		0.09	-129.5
40	0.10	-146.9	4.20	-24.0	0.17		0.11	-120.3
50	0.11	-147.9	4.23	-32.2	0.17		0.12	-117.7
60	0.11	-152.0	4.19	-39.8	0.17		0.13	-118.5
70	0.12	-159.7	4.20	-47.7	0.17		0.14	-120.3
85	0.12	-171.2	4.17	-59.5	0.16		0.14	-122.6
100	0.12	174.1	4.15	-72.1	0.16		0.15	-123.6

Pin Configuration (For AMS-162)

Pin No.	Function	Pin No.	Function
1	RF OUT	3	RF IN
2	VDC	4	GND

Absolute Maximum Ratings [2]

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

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

- **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

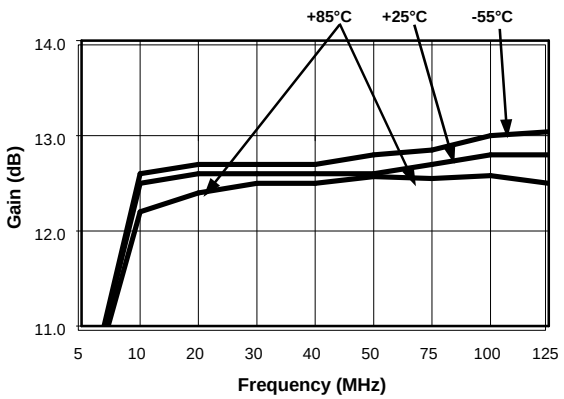
Visit www.macom.com for additional data sheets and product information.

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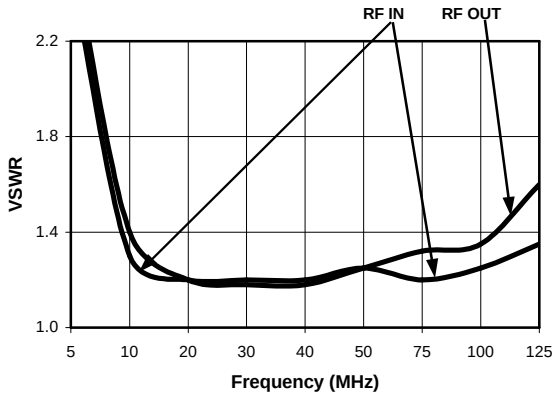
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Typical Performance Curves

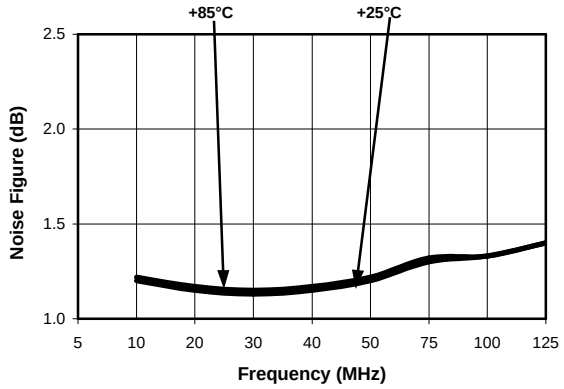
Gain vs. Frequency



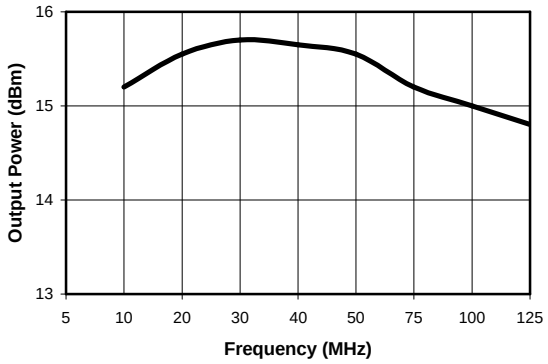
VSWR vs. Frequency



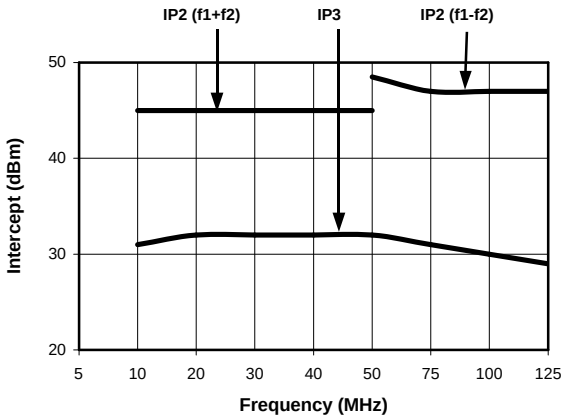
Noise Figure



1 dB Compression



Intermodulation Intercept



Ordering Information

Part Number	Package
AM-162 PIN	TO-8-1
AMC-162 SMA	C-6
AMS-162 PIN	SF-1

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