

Low Noise Amplifier, 12 dB Gain, 200 - 1000 MHz

V 3.00

AM-/AMC-142

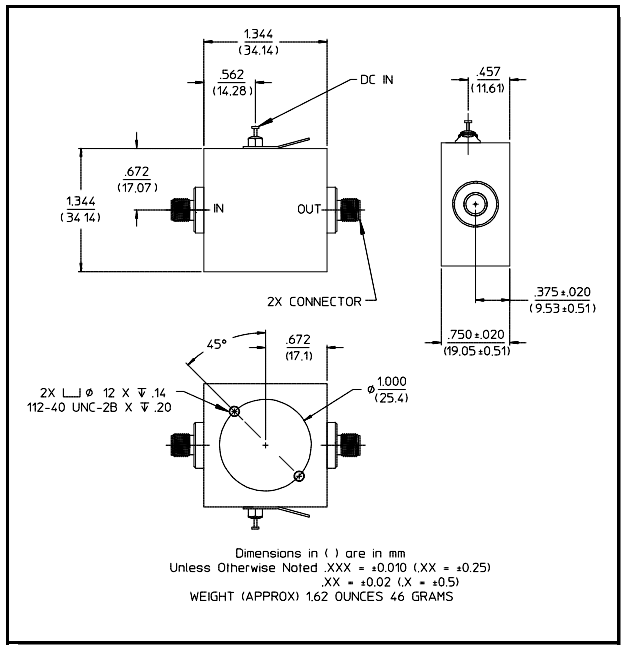
Features

- 2.2 dB Typical Midband Noise Figure
- +6 dBm Typical Midband Output Power
- +20 dBm Typical Midband Third Order Intercept

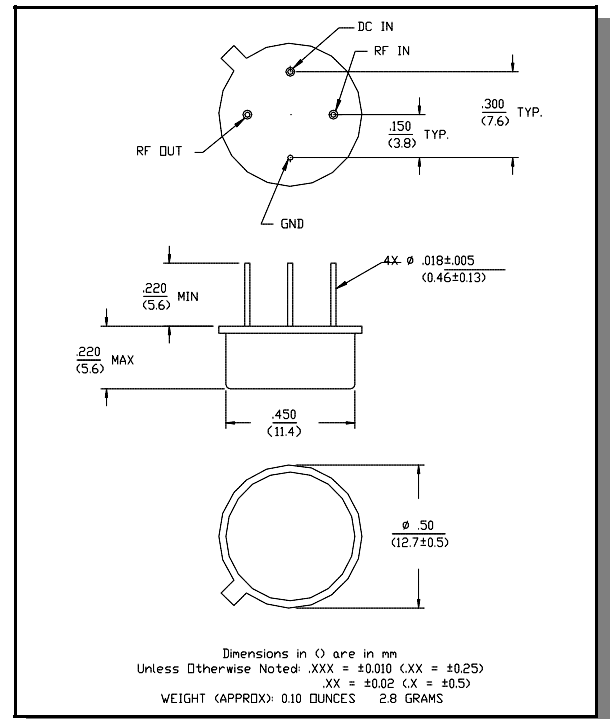
Description

M/A-COM's AM-142 is a coupler feedback amplifier with low noise figure and high intercept points for the low bias current. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a TO-8 package. The ground plane on the PC board should be configured to remove heat from under the package. AM-142 are ideally suited for use where a low noise, high reliability amplifier is required.

C-32



TO-8-1



Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
Max. Input Power	+20 dBm
V_{bias}	+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 $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ Case Temperature

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Gain	@ +25°C	600 MHz	dB	11.4	12.0	12.6
Frequency Response	—	200 - 1000 MHz	dB	—	—	+0.5,-0.8
Gain Variation with Temperature	—	200 - 1000 MHz	dB	—	—	+0.8,-0.6
1 dB Compression	Output Power	200 - 1000 MHz	dBm	+2	—	—
Noise Figure	—	200 - 1000 MHz	dB	—	—	3.8
Reverse Transmission	—	200 - 1000 MHz	dB	—	-15	-13
VSWR	—	200 - 1000 MHz	Ratio	—	—	3.5:1
Output IP_2	Two-tone inputs up to -10 dBm	200 - 1000 MHz	dBm	+25	—	—
Output IP_3	Two-tone inputs up to -10 dBm	200 - 1000 MHz	dBm	+15	—	—
Vbias	—	—	VDC	+14.5	+15.0	+15.5
Ibias	Vbias = +15.0 VDC	—	mA	—	13	15
Power Dissipation	@ +15.0V Bias	—	mW	—	200	—

2. 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
200	0.24	41.0	3.95	175.9	0.18	160.6	0.25	34.6
300	0.12	16.0	3.93	156.0	0.18	147.0	0.28	7.4
400	0.08	-6.4	3.97	140.8	0.17	134.9	0.31	-15.4
500	0.07	142.1	3.98	126.6	0.17	112.7	0.33	-35.9
600	0.06	127.8	4.04	112.9	0.17	110.4	0.33	-54.7
700	0.12	109.4	4.07	99.1	0.17	98.2	0.34	-73.6
800	0.18	90.1	4.12	84.5	0.16	86.5	0.36	-92.0
900	0.24	69.4	4.20	68.9	0.15	74.7	0.37	-110.7
1000	0.31	47.9	4.15	50.4	0.15	63.9	0.38	-129.9

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

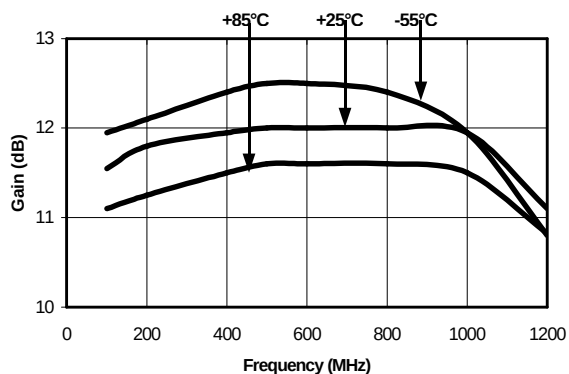
Visit www.macom.com for additional data sheets and product information.

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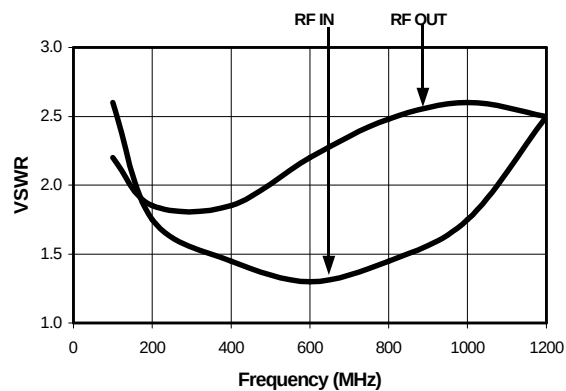
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Typical Performance Curves

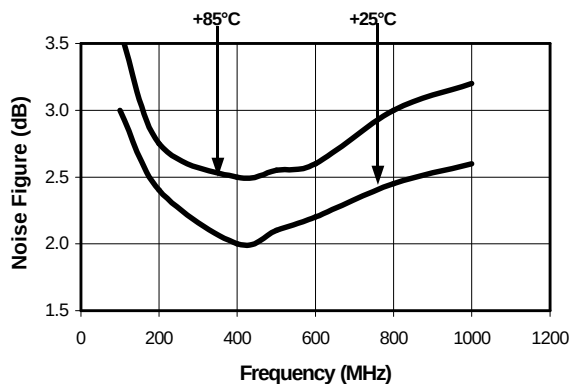
Gain vs. Frequency



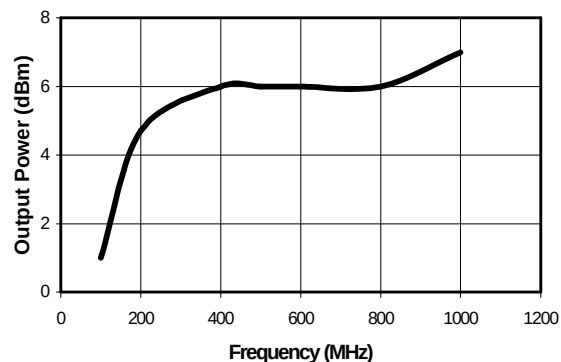
VSWR vs. Frequency



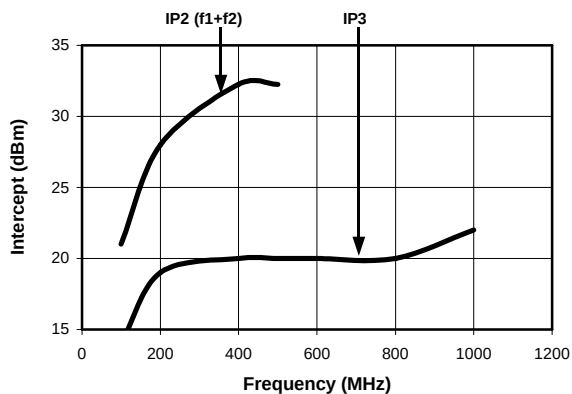
Noise Figure



1 dB Compression



Intermodulation Intercept



Ordering Information

Part Number	Package
AM-142 PIN ³	TO-8-1
AMC-142 SMA	Connectorized

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

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