

Low Noise Amplifier, 16 dB Gain, 5 - 500 MHz

V 3.00

AM-/AMC-143

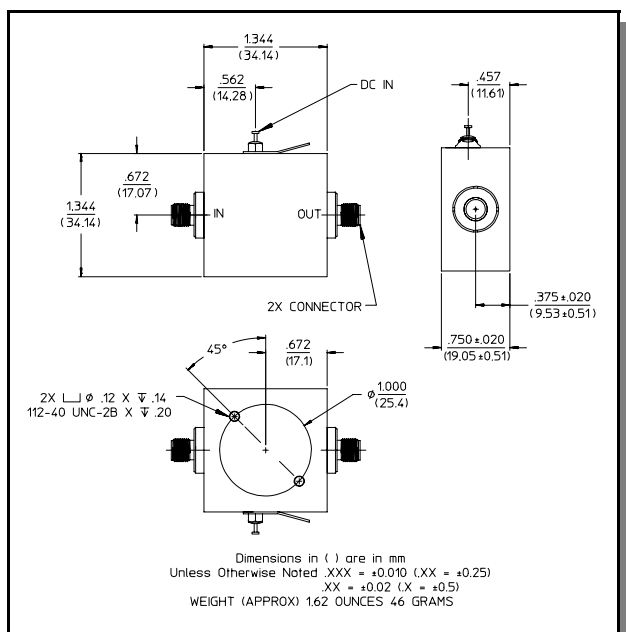
Features

- 1.9 dB Typical Midband Noise Figure
- +7 dBm Typical Midband Output Power
- +20 dBm Typical Third Order Intercept

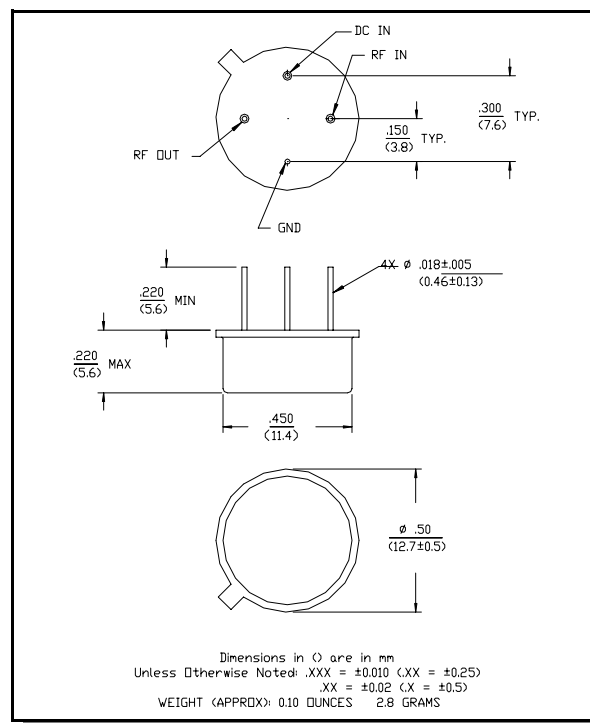
Description

M/A-COM's AM-143 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-143 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°C to +85°C Case Temperature

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Gain	@ +25°C	50 MHz	dB	15.3	15.8	16.3
Frequency Response	—	5 - 500 MHz	dB	—	—	± 1.0
Gain Variation with Temperature	—	5 - 500 MHz	dB	—	—	± 0.8
1 dB Compression	Output Power	5 - 500 MHz	dBm	+4	—	—
Noise Figure	—	5 - 500 MHz 5 - 100 MHz	dB dB	— —	— —	3.5 2.7
Reverse Transmission	—	5 - 500 MHz	dB	—	-21	-16
VSWR	—	5 - 500 MHz	Ratio	—	—	2.5:1
Output IP ₂	Two-tone inputs up to -10 dBm	5 - 500 MHz	dBm	+24	—	—
Output IP ₃	Two-tone inputs up to -10 dBm	5 - 500 MHz	dBm	+16	—	—
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
5	0.20	-60.7	5.90	-161.0	0.09	-160.5	0.32	-24.9
10	0.12	-63.8	6.07	-171.8	0.09	-172.6	0.27	-24.9
20	0.09	-65.3	6.16	-179.8	0.10	178.9	0.26	-17.4
50	0.10	-82.7	6.08	167.5	0.10	166.3	0.25	-28.0
100	0.14	-101.0	6.06	153.3	0.10	150.5	0.26	-49.3
200	0.21	-130.6	6.00	126.7	0.10	119.8	0.26	-82.3
300	0.23	-149.2	6.01	100.9	0.10	93.6	0.24	-104.5
400	0.20	-155.5	6.09	70.7	0.10	67.4	0.22	-100.5
500	0.22	-142.9	6.11	36.8	0.10	43.3	0.20	-79.8

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

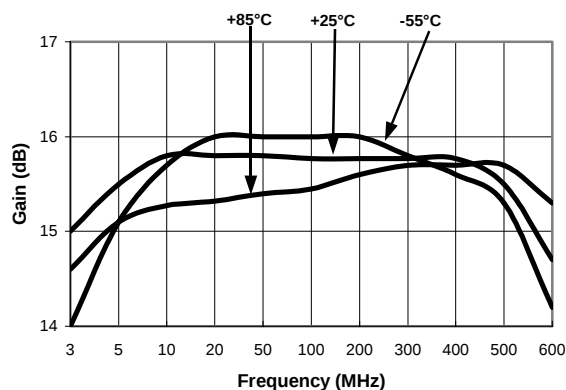
Visit www.macom.com for additional data sheets and product information.

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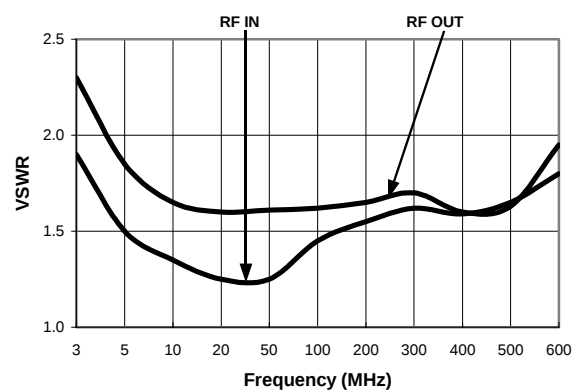
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Typical Performance Curves

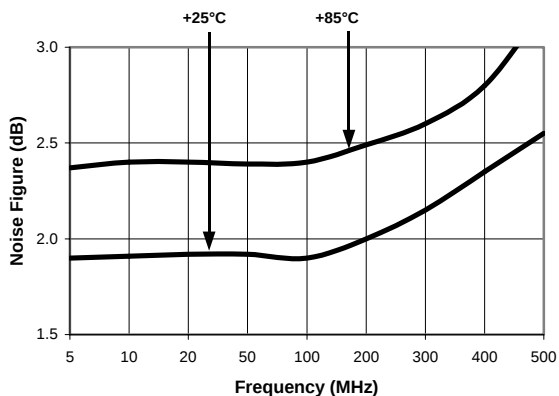
Gain vs. Frequency



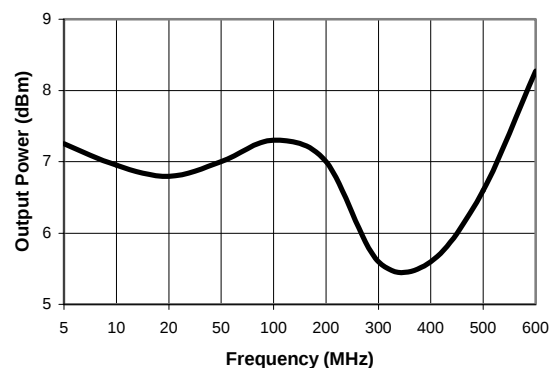
VSWR vs. Frequency



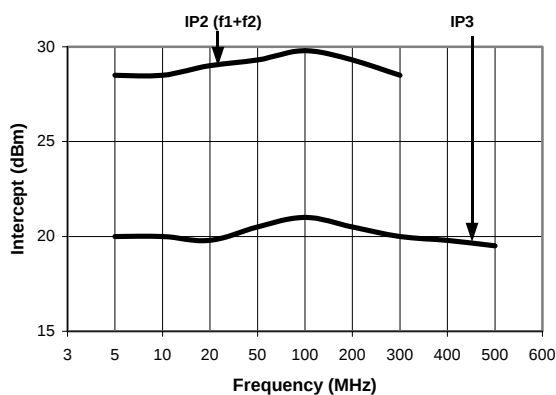
Noise Figure



1 dB Compression



Intermodulation Intercept



Ordering Information

Part Number	Package
AM-143 PIN ³	TO-8-1
AMC-143 SMA	Connectorized

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

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