

High Performance Amplifier, 10 dB Gain 5 - 500 MHz

**AM-131
V3**

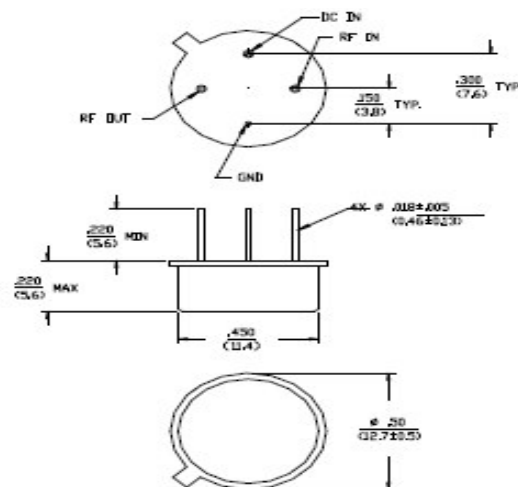
Features

- 3.5 dB Typical Midband Noise Figure
- +42 dBm Typical Midband Intercept

Description

M/A-COM's AM-131 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-131 is ideally suited for use where a high intercept, high reliability amplifier is required.

TO-8-1



Dimensions in ϕ are in mm
Unless Otherwise Noted .XXX = ±.003 (XX = ±.025)
XXX = ±.002 (XX = ±.015)
WEIGHT APPROX. 0.0 OUNCES 2.0 GRAMS

Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
Max. Input Power	+23 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.

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Electrical Specifications: ^{2,3} T_A = -55°C to +85°C Case Temperature

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Gain	@+25°C	50 MHz	dB	9.4	10.0	10.6
Frequency Response	—	5 - 500 MHz	dB	—	—	±0.7
Gain Variation with Temperature	—	5 - 500 MHz	dB	—	—	±1.0
1 dB Compression	Output Power	5 - 500 MHz 10 - 300 MHz	dBm dBm	+16 +19	— —	— —
Noise Figure	—	5 - 500 MHz 10 - 300 MHz	dB dB	— —	— —	7.5 5.5
Reverse Transmission	—	5 - 500 MHz	dB	—	-18	-15
VSWR	—	5 - 500 MHz 10 - 400 MHz	Ratio Ratio	— —	— —	2.5:1 2:1
Output IP ₂	Two-Tone inputs up to +10 dBm	5 - 500 MHz 10 - 300 MHz	dBm dBm	+33 +40	— —	— —
Output IP ₃	Two-Tone inputs up to +10 dBm	5 - 500 MHz 10 - 300 MHz	dBm dBm	+22 +32	— —	— —
V _{bias}	—	—	VDC	+14.5	+15.0	+15.5
I _{bias}	V _{bias} = +15.0 VDC	—	mA	—	62	75
Power Dissipation	@ +15 V Bias	—	mW	—	930	—

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 1 W must be provided in use.

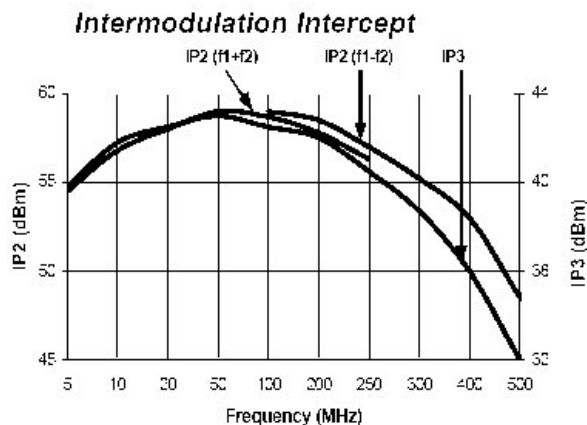
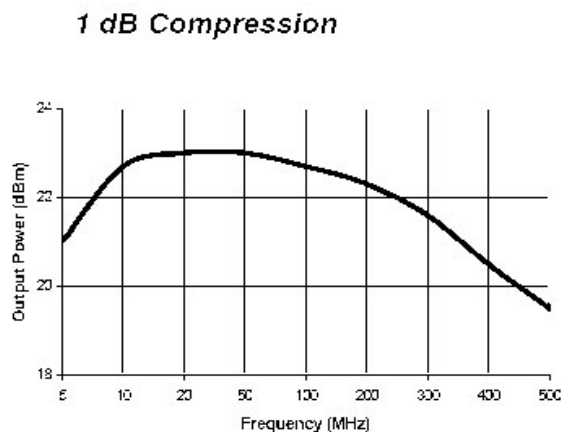
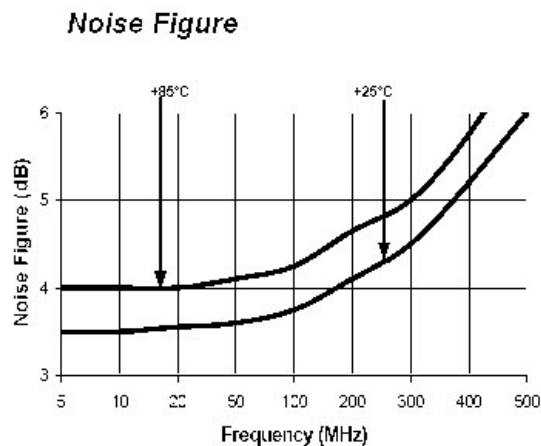
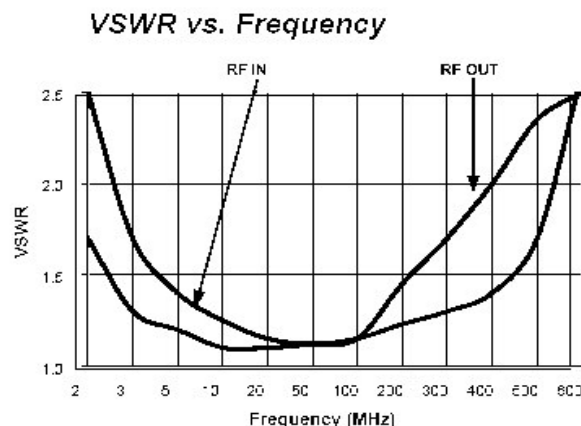
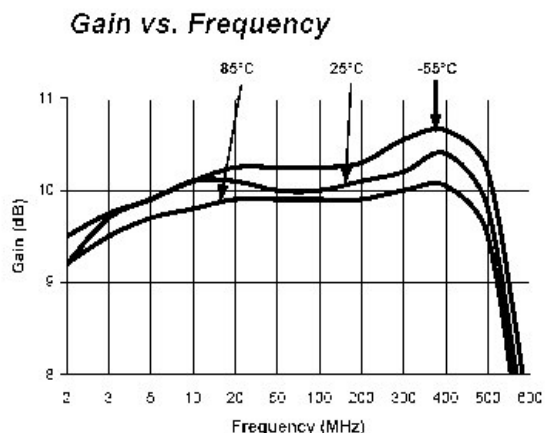
S-Parameter Data

Frequency (MHz)	S11 MAG/ANG	S21 MAG/ANG	S12 MAG/ANG	S22 MAG/ANG
5	0.23/-71.9	3.15/-157.9	0.11/173.2	0.15/90.6
10	0.12/-65.2	3.16/-171.9	0.12/175.7	0.07/105.5
20	0.08/-55.5	3.17/178.4	0.13/172.0	0.04/124.1
50	0.05/-61.3	3.17/162.9	0.13/160.8	0.02/-178.6
100	0.04/-78.3	3.15/143.5	0.13/143.9	0.03/-103.7
200	0.02/41.9	3.12/106.2	0.13/108.1	0.12/-83.4
300	0.10/5.0	3.10/68.8	0.13/75.7	0.20/-108.0
400	0.15/-28.7	3.09/29.8	0.14/42.3	0.24/-144.5
500	0.20/-18.6	3.07/-16.4	0.14/5.3	0.27/15.0

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Typical Performance Curves



Ordering Information

Part Number	Package
AM-131 PIN ⁴	TO-8-1

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