AM-160

Low Noise Amplifier, 28 dB Gain, 100 - 600 MHz

Rev. V3

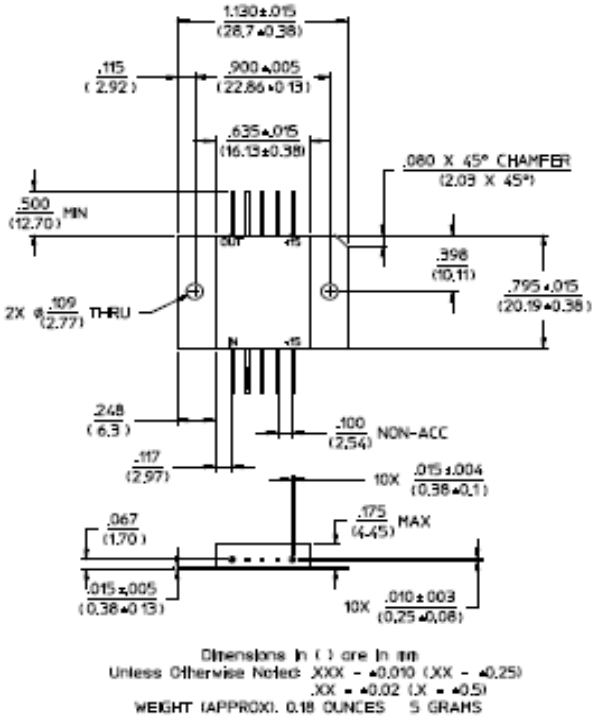
Features

- 1.6 dB Typical Midband Noise Figure
- +19 dBm Typical 1 dB Compression Point
- +30 dBm Typical Third Order Intercept

Description

M/A-COM's AM-160 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 metal flatpack the thermal rise is minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM-160 is ideally suited for use where a high intercept, high reliability amplifier is required.

FP-9



Absolute Maximum Ratings [1]

Parameter	Absolute Maximum
Max. Input Power	+10 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.

Pin Configuration

Pin No.	Function	Pin No.	Function
1	RF OUT	6	RF IN
2	GND	7	GND
3	GND	8	GND
4	GND	9	GND
5	VDC	10	VDC

Ordering Information

Part Number	Package
AM-160 PIN	Flatpack

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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	250 MHz	dB	27.2	28.2	29.2
Frequency Response	—	100 - 600 MHz	dB	—	—	±1.25
Gain Variation with Temperature	—	100 - 600 MHz	dB	—	—	±1.0
1 dB Compression	Output Power	100 - 600 MHz	dBm	+16	—	—
Noise Figure	—	100 - 600 MHz	dB	—	—	3.0
Reverse Transmission	—	100 - 600 MHz	dB	—	-38	-32
VSWR	—	100 - 600 MHz 100 - 400 MHz	Ratio Ratio	— —	— —	2.5:1 2:1
Output IP_2	Two-Tone inputs up to +5 dBm	100 - 600 MHz	dBm	+36	—	—
Output IP_3	Two-Tone inputs up to +5 dBm	100 - 600 MHz	dBm	+27	—	—
Vbias	—	—	VDC	+14.5	+15.0	+15.5
Ibias	Vbias = +15.0 VDC	—	mA	—	70	75
Power Dissipation	@ +15 V Bias	—	mW	—	1050	—

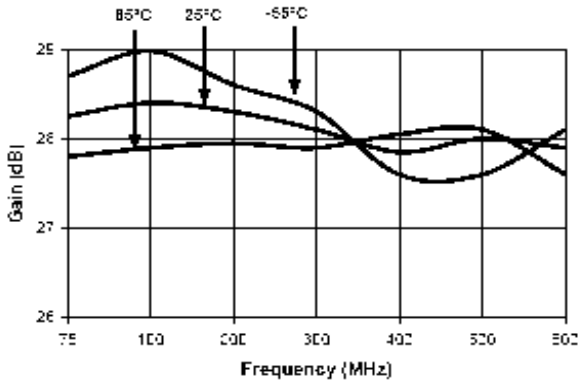
2. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.
3. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 1.2 W must be provided in use.

S-Parameter Data

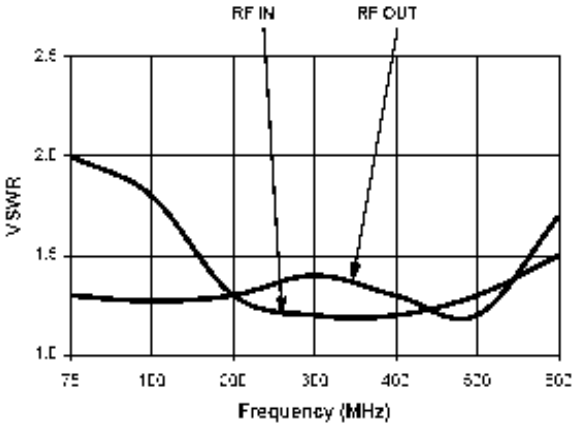
Frequency (MHz)	S11 MAG/ANG	S21 MAG/ANG	S12 MAG/ANG	S22 MAG/ANG
100	0.14/126.3	28.21/-5.6	0.01/-18.0	0.07/-73.4
150	0.12/56.7	28.30/-53.5	0.01/-68.5	0.08/-144.7
200	0.08/-15.5	27.45/-93.3	0.01/-108.2	0.09/150.5
250	0.17/-67.8	26.79/-126.3	0.01/-143.8	0.10/101.3
300	0.18/-87.7	25.37/-155.5	0.01/-178.1	0.12/64.4
350	0.18/-96.1	25.42/172.0	0.01/149.5	0.14/34.6
400	0.23/-115.4	24.92/141.7	0.02/120.6	0.11/4.7
500	0.27/175.5	25.67/78.7	0.02/59.1	0.10/-101.1
600	0.32/19.1	25.58/0.7	0.02/-14.6	0.24/143.7

Typical Performance Curves

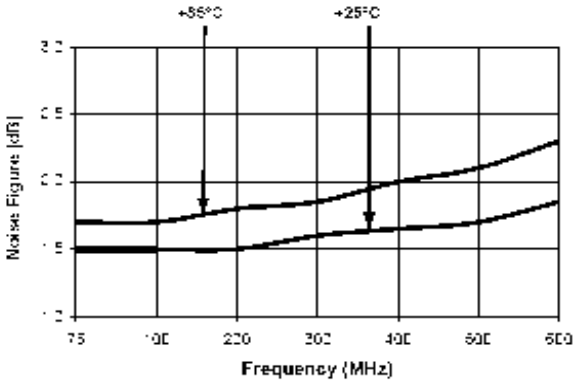
Gain vs. Frequency



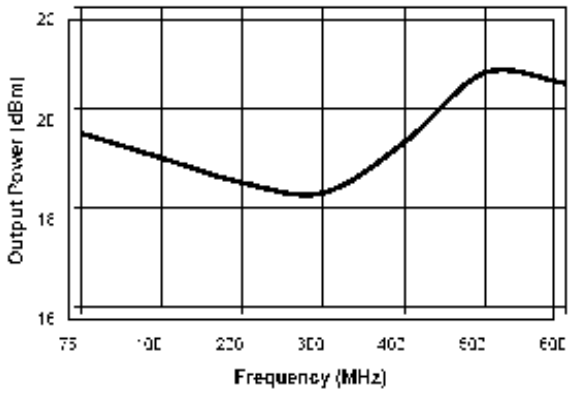
VSWR vs. Frequency



Noise Figure



1 dB Compression



Intermodulation Intercept