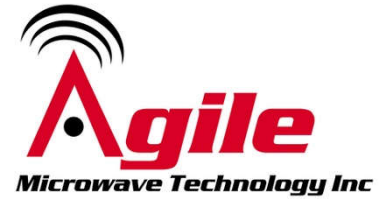


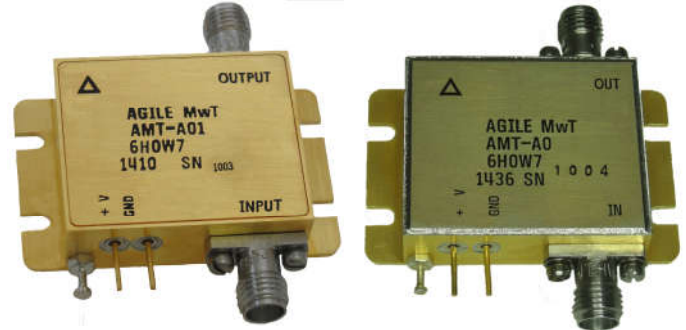
# AMT-A0256 4 GHz to 20 GHz Broadband Low Noise, Flat Gain w 5W Protection Limiter

Data Sheet



## Features

- 4 GHz to 20 GHz Frequency Range
- CW 5 W / +37 dBm RF Input Protection
- Gain 36 dB Typical
- Gain Flatness  $\pm 1$  dB Typical
- 3 dB Typical Noise Figure
- Typical P1dB power > +21 dBm
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable
- Available in Hermetic Laser sealed version



Laser Sealed Hermetic

## Description

The AMT-A0256 is a Broadband Low Noise amplifier with flat gain and 5W CW protection limiter at input in a compact size. The performance is achieved through the use of AMTI's proprietary matching technology and latest in GaAs technology. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The AMT-A0256 is ideal for use as low noise amplifier for test equipment, Communication systems or where broadband amplification and power are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

## Applications

- Test Equipment
- Communication Systems
- EW Systems
- Lab Applications
- Radar

## MAXIMUM RATINGS<sup>1</sup>

## EAR99 NLR

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T <sub>MO</sub>	° C	-40	+85
Storage Temperature - Case	T <sub>MS</sub>	° C	-40	+125
RF Input power (CW)	P <sub>in</sub>	dBm		+37
Die T <sub>Junction</sub>	T <sub>J</sub>	° C		+150
Positive Supply Voltage	V <sub>+SS</sub>	V		+15

### Appropriate Heat sink must be used,

1.Stresses above those listed under "Absolute Maximum Rating" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL SPECIFICATIONS @ 23°C

Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	4		20
Gain <sup>2</sup>	Small Signal	dB	34	36	
Gain Flatness <sup>2</sup>		dB		±1	±2
Input Power Survival (CW)	CW	dBm	+37		
Noise Figure	4 to 18 GHz Higher above 18 GHz	dB		3	4.2
Output Power (P1dB)	4 to 18 GHz, measured @13 GHz	dBm	+18	+21	
OIP3	OIP3 @ 13 GHz Two tone F1-F2= 10MHz	dB		26	
RF Input Impedance <sup>2</sup>	Reference to 50 ohms VSWR			1.8:1	2.2:1
RF Output Impedance <sup>2</sup>	Reference to 50 ohms VSWR			1.8:1	2.2:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:	Small signal	mA		295	320

Notes:

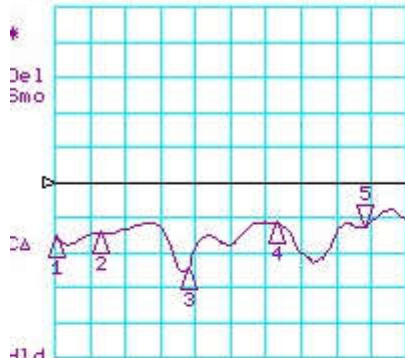
1/ Unconditional Stability

2/ Guaranteed up to 18 GHz

Customized configurations of the above specifications are available

# Typical S-Parameters @ 23°C

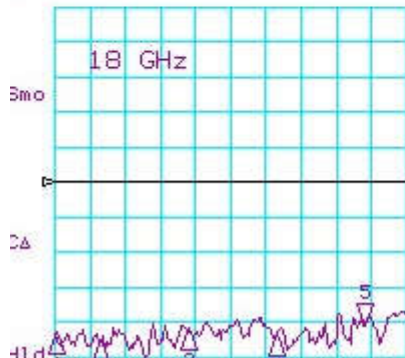
CH1 LOG 10 dB/ REF 0 dB  
S11 5: -12.932 dB 18.000 000 000 GHz



CH1 Markers  
1: -15.636 dB  
4.00000 GHz  
2: -14.205 dB  
6.00000 GHz  
3: -24.777 dB  
10.00000 GHz  
4: -11.671 dB  
14.00000 GHz

START 4000.000 MHz STOP 20000.000 MHz

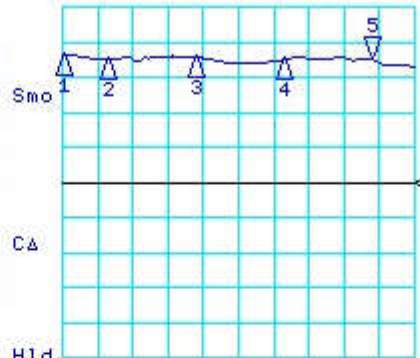
CH3 LOG 10 dB/ REF -10 dB  
S12 5: -51.263 dB 18.000 000 000 GHz



CH3 Markers  
1: -53.439 dB  
4.00000 GHz  
2: -55.503 dB  
6.00000 GHz  
3: -52.291 dB  
10.00000 GHz  
4: -54.127 dB  
14.00000 GHz

START 4000.000 MHz STOP 20000.000 MHz

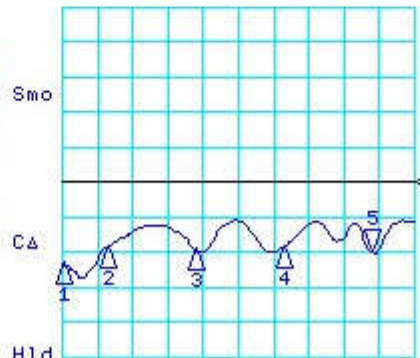
CH2 LOG 10 dB/ REF 0 dB  
S21 5: 35.252 dB 18.000 000 000 GHz



CH2 Markers  
1: 36.403 dB  
4.00000 GHz  
2: 35.304 dB  
6.00000 GHz  
3: 35.910 dB  
10.00000 GHz  
4: 35.014 dB  
14.00000 GHz

START 4000.000 MHz STOP 20000.000 MHz

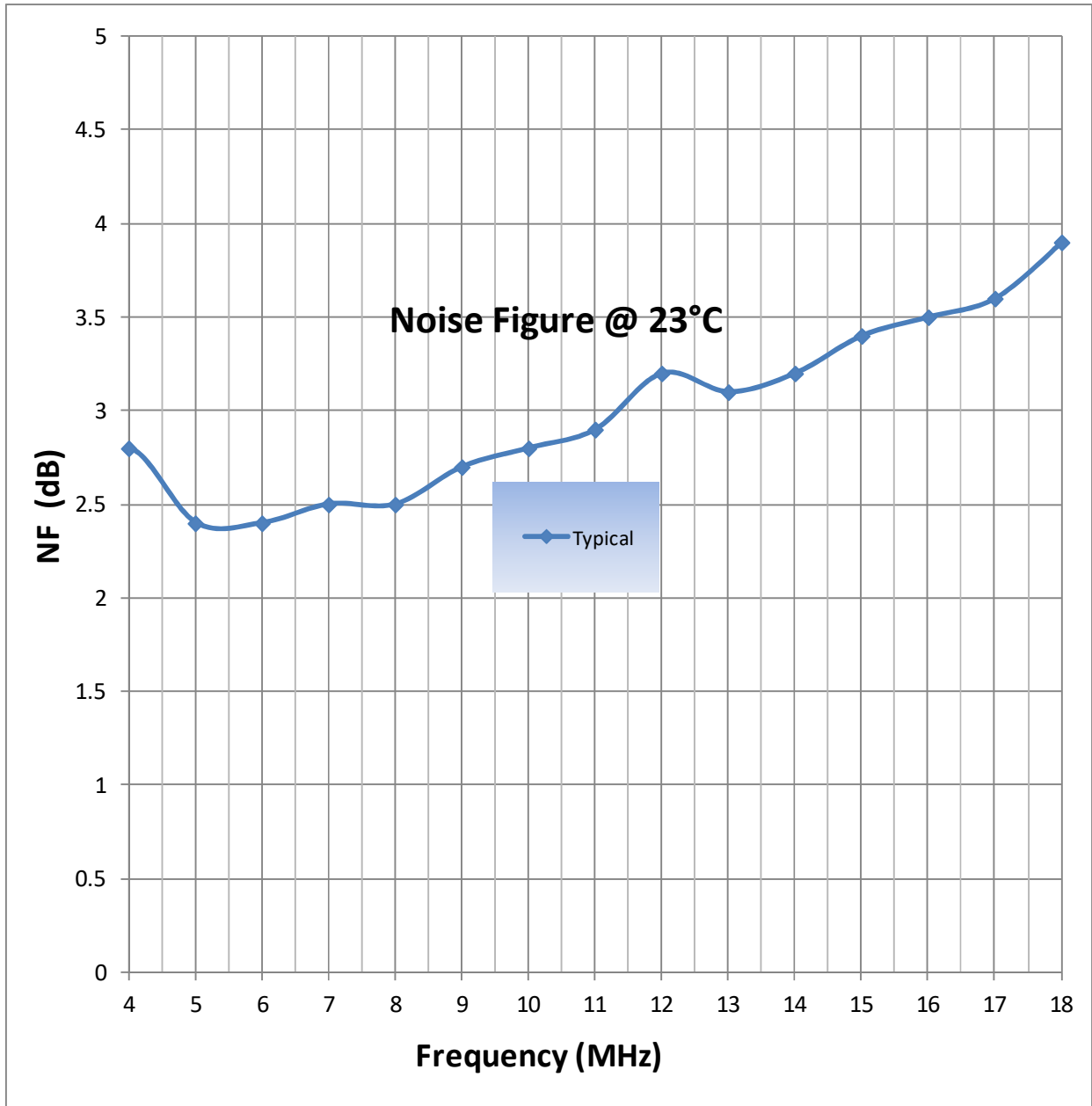
CH4 LOG 10 dB/ REF 0 dB  
S22 5: -19.712 dB 18.000 000 000 GHz



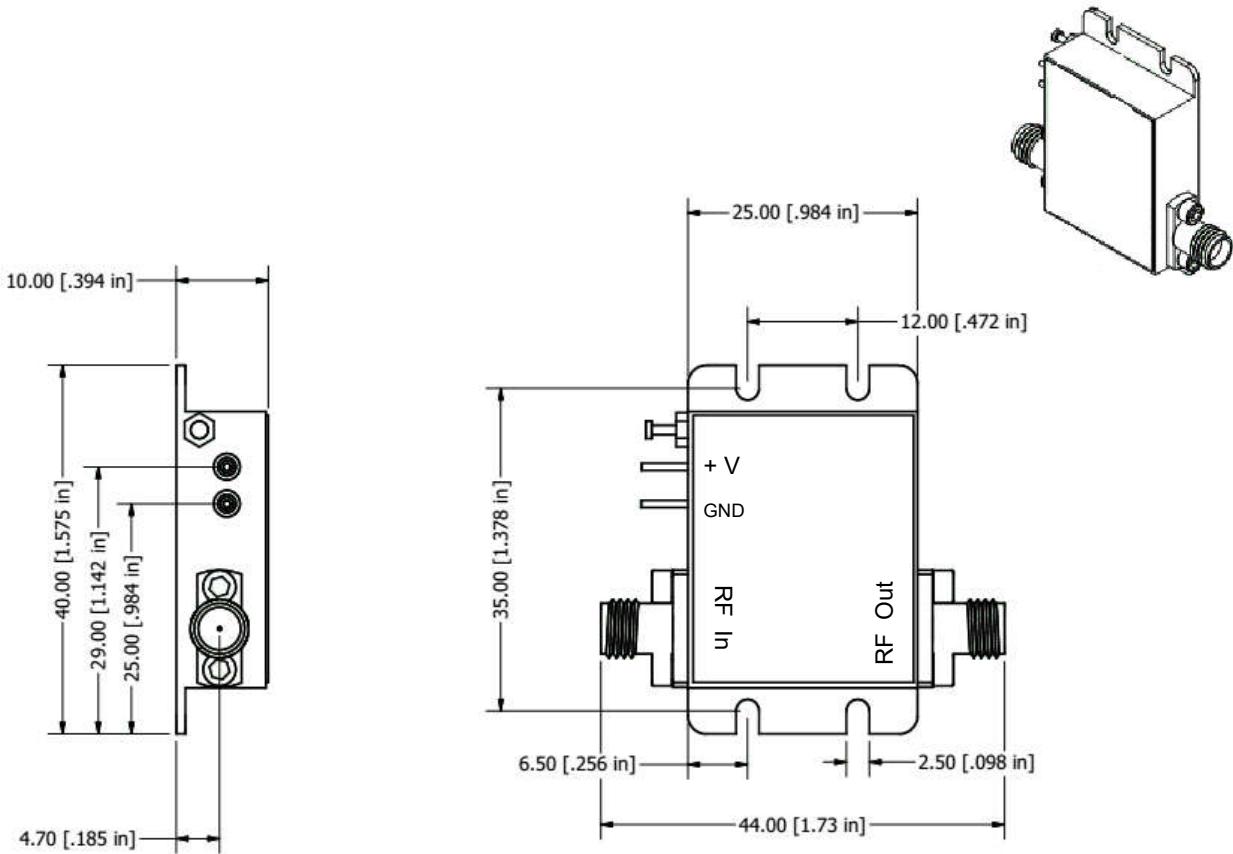
CH4 Markers  
1: -23.257 dB  
4.00000 GHz  
2: -18.676 dB  
6.00000 GHz  
3: -19.305 dB  
10.00000 GHz  
4: -18.566 dB  
14.00000 GHz

START 4000.000 MHz STOP 20000.000 MHz

# Typical NF @ 23°C



## Package Outline M020: SMA Connectorized mm(inches)



**Field replaceable SMA Connectors, Removable Ground slug**

**Note: The unit must be attached to proper heat sink**

<b>Model Number</b>	<b>Description</b>	<b>Hermeticity</b>	<b>Package</b>
AMT-A0256	SMA Female	Non-Hermetic	Outline: M020
AMT-A0256-H	SMA Female	Hermetic Laser Weld Tested to Leak Rate $<2.0 \times 10^{-8}$	Outline: M020

Contact us for custom configurations and special requirements.

Our highly experienced team of engineers can quickly identify and implement innovative solutions using latest technology to improve performance and reduce cost.

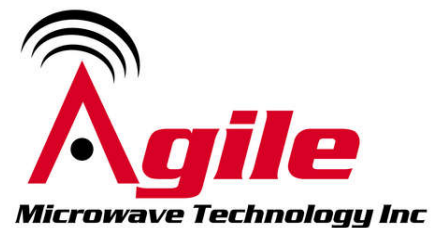
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital attenuator, Phase shifter, Microcontroller, Multiple amplifiers, Switch matrix, Comb generators and others
- Mechanical: Custom packages - Surface Mount, Connectorized, Waveguide, Carrier, Drop-in, Hermetic and others

Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

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Certified Company**



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