

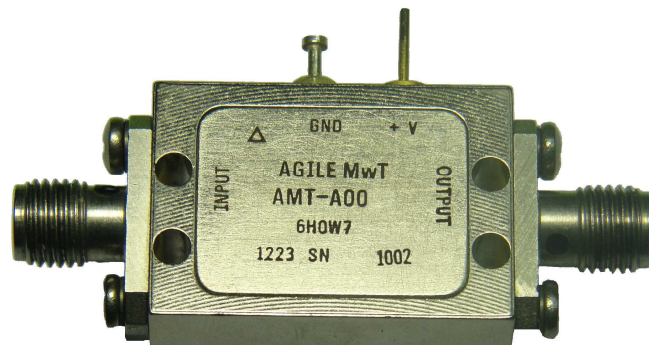
# AMT-A0033 2 to 8 GHz LNA Broadband Low Noise Amplifier

## Data Sheet



## Features

- 2 GHz to 8 GHz Frequency Range
- Typical Noise Figure < 1.2 dB
- Gain 28 dB
- Gain Flatness <  $\pm 1.5$  dB
- Internally matched
- Internal DC Regulator
- Operates from a Single +8V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology
- Excellent Value



## Description

The AMT-A0033 is a Broadband Low Noise amplifier with very low noise figure over the full frequency range. The performance is achieved through the use of AMTI's proprietary technology. The amplifier I/Os are Internally matched to 50 Ohms and are DC blocked. The AMT-A0033 is ideal for use as Front End of receiver system, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications

## Applications

- Receiver front end,
- Communication systems
- Microwave Radio systems
- Test Equipment

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

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	$T_{MO}$	$^{\circ}C$	-40	+85
Storage Temperature - Case	$T_{MS}$	$^{\circ}C$	-40	+125
RF Input power (CW)	Pin	dBm		+8
Die $T_{Junction}$	$T_J$	$^{\circ}C$		+150
Positive Supply Voltage	$V_{+SS}$	V		+8.5

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		MHz	2000		8000
Gain	Small Signal	dB	25	28	
Gain Flatness		dB		±1.5	±1.9
Output Power (P1dB)	1 dB compression point @4 GHz	dBm	+7	+8	
OIP3	OIP3 measured @4 GHz Two tone F1-F2= 10MHz	dB		+18	
Noise Figure		dB		1.1	1.5
RF Input Impedance	Reference to 50 ohms VSWR			1.9:1	2.3:1
RF Output Impedance	Reference to 50 ohms			1:8:1	2.0:1
Stability Factor K	Unconditionally Stable		>1		
Stability Factor B1	Unconditionally Stable		>0		
Supply Voltage Positive:		V		+8	
Supply Current Positive:	Psat	mA		57	75

Notes:

1/ Unconditional Stability: ( $K > 1$ ) and ( $B1 > 0$ )

Customized configurations of the above specifications are available

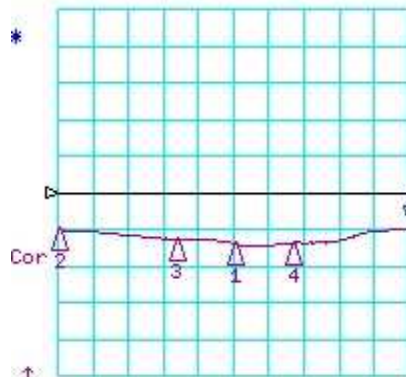
# Typical Performance @ 23°C

## S- Parameters

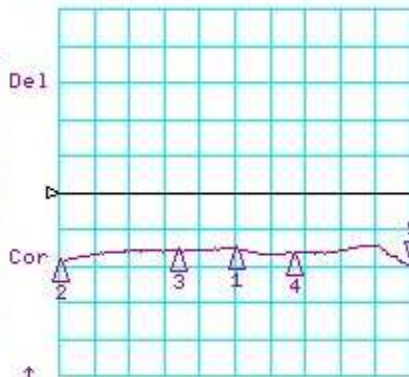
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CH1 LOG 10 dB/ REF 0 dB  
S11 5:-9.7740 dB 8.000 000 000 GHz

CH3 LOG 10 dB/ REF 0 dB  
S22 5:-19.776 dB 8.000 000 000 GHz



CH1 Markers  
1:-13.797 dB  
5.00000 GHz  
2:-10.017 dB  
2.00000 GHz  
3:-12.653 dB  
4.00000 GHz  
4:-13.758 dB  
6.00000 GHz



CH3 Markers  
1:-15.121 dB  
5.00000 GHz  
2:-18.763 dB  
2.00000 GHz  
3:-15.823 dB  
4.00000 GHz  
4:-16.478 dB  
6.00000 GHz

START 2000.000 MHz STOP 8000.000 MHz

START 2000.000 MHz STOP 8000.000 MHz

CH2 S21 LOG 10 dB/ REF 25 dB 5: 28.430 dB 8.000 000 000 GHz



CH2 Markers  
1: 27.562 dB  
5.00000 GHz  
2: 29.349 dB  
2.00000 GHz  
3: 28.436 dB  
4.00000 GHz  
4: 27.234 dB  
6.00000 GHz

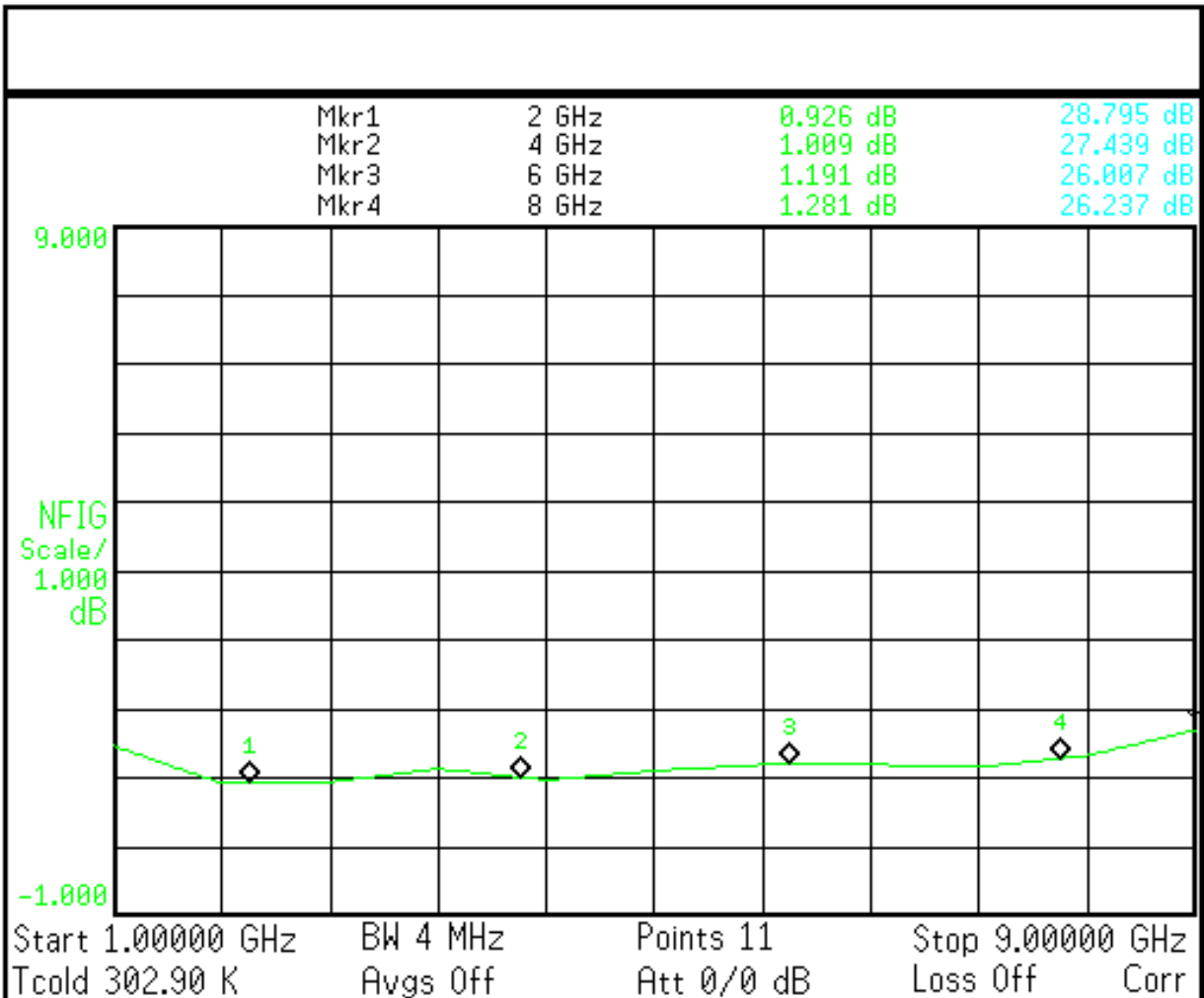
START 2.000 000 000 GHz

STOP 8.000 000 000 GHz

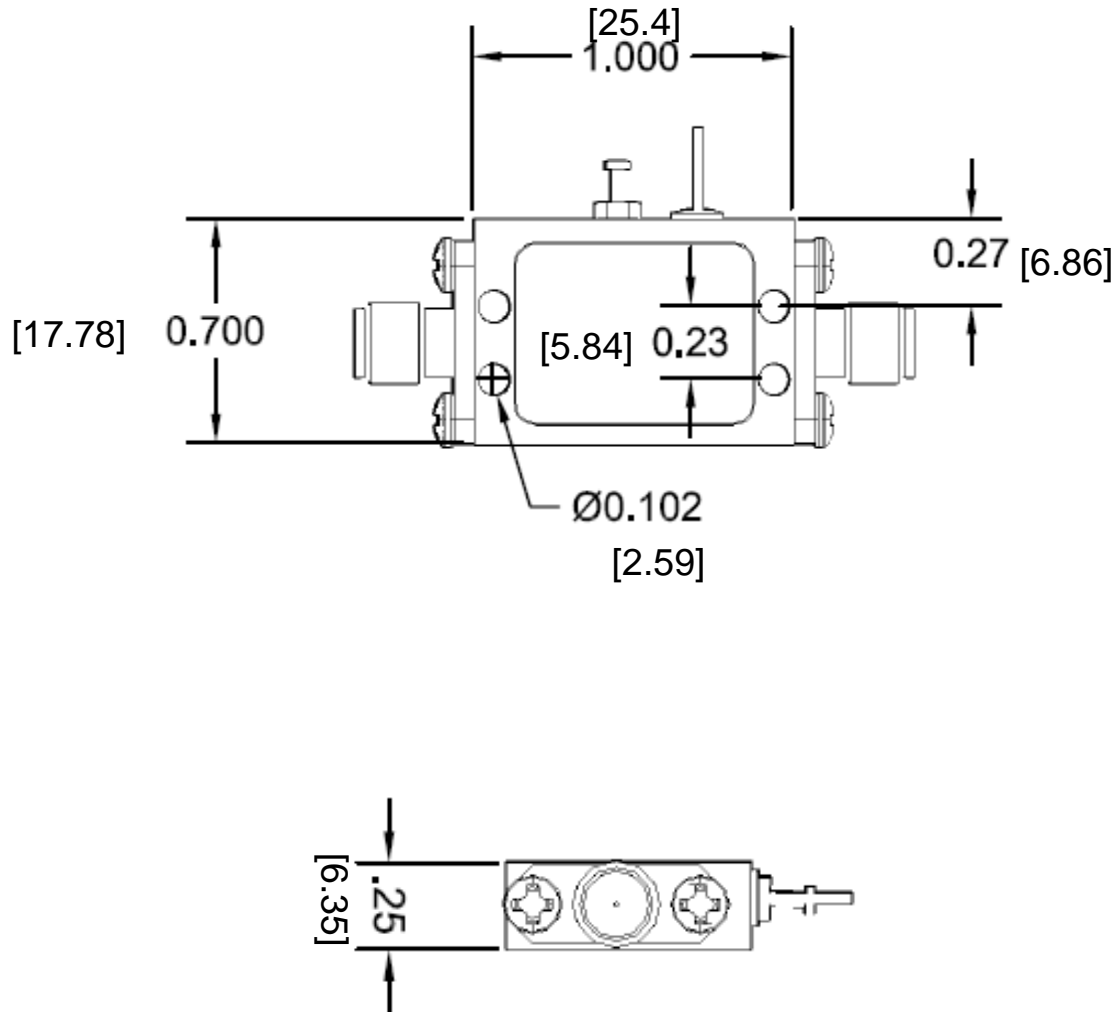
# Typical Performance

## Noise Figure @ 23C

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**Package Outline: SMA Connectorized (inches)**



<b>Model Number</b>	<b>Description</b>	<b>Hermeticity</b>	<b>Package</b>
AMT-A0033	SMA Female	Non-Hermetic	Outline: M007

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.

### Contact Information:

**101 Bloomingdale Road  
Hicksville, NY 11801  
Phone: (516) 931-1760  
Fax: (212) 374-1153**



**[info@agilemwt.com](mailto:info@agilemwt.com)    [www.agilemwt.com](http://www.agilemwt.com)**

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