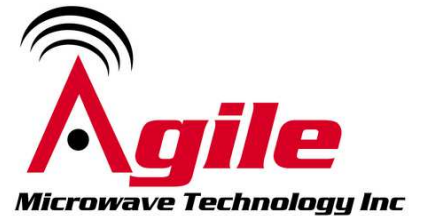


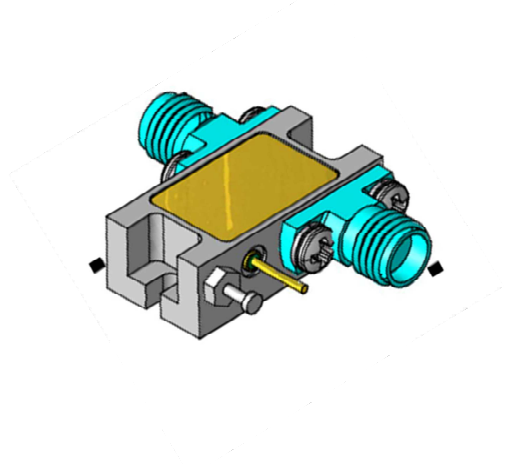
# AMT-A0434 12.2 GHz to 12.4 GHz Low Noise Amplifier

## Data Sheet



## Features

- 12.2 GHz to 12.4 GHz Frequency Range
- **Typical Noise Figure 1.8 dB 2.5 dB max**
- Gain 20dB typical
- Gain Flatness  $< \pm 0.5$  dB typical
- P1dB +10.2 dBm minimum
- VSWR 1.8:1 typical
- Internally Regulated
- Operates from a Single +12V Supply



## Description

The AMT-A0434 is a Low Noise amplifier with 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. The AMT-A0434 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,
- Radar
- Communication systems
- Microwave Radio systems
- Test Equipment

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

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	$T_{MO}$	° C	-10	+65
Storage Temperature - Case	$T_{MS}$	° C	-40	+125
RF Input power (CW)	Pin	dBm		+10
Die $T_{Junction}$	$T_J$	° C		+150
Positive Supply Voltage	$V_{+SS}$	V		+15

**Do NOT apply DC to RF Input**

**Must be attached to proper Heat Sink**

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	12.2		12.4
Gain	Small Signal	dB	19	20	
Gain Flatness		dB		±0.5	±1
Input Power	CW, without damage	dBm	+10		
Output Power (P1dB)	1 dB compression point @ 12.3 GHz	dBm	+10.2	+11	
OIP3	OIP3 @ 12.3 GHz Two tone F1-F2= 10MHz	dB		20	
Noise Figure		dB		1.8	2.5
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.0:1
RF Output Impedance	Reference to 50 ohms			1.8:1	2.0:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		90	100

Notes:

1/ Unconditional Stability

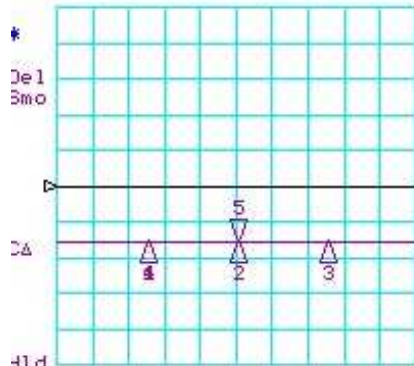
Note: Electrical Specifications Guaranteed only at +23 ° C

Test data provided by SN @ room S-Parameter over Frequency Range, P1dB @ 12.3 GHz, NF at every 50 MHz using Low ENR HP346A noise source

Customized configurations of the above specifications are available

# Typical S-Parameters @ 25°C

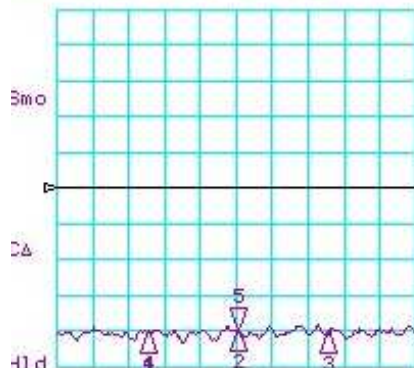
CH1 LOG 10 dB/ REF 0 dB  
S11 5: -15.750 dB 12.300 000 000 GHz



CH1 Markers  
1: -15.661 dB  
12.2000 GHz  
2: -15.750 dB  
12.3000 GHz  
3: -15.684 dB  
12.4000 GHz  
4: -15.661 dB  
12.2000 GHz

START12100.000 MHz STOP12500.000 MHz

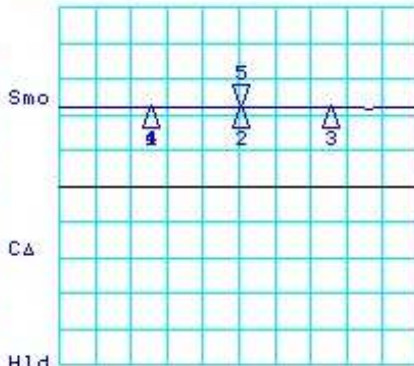
CH3 LOG 10 dB/ REF 0 dB  
S12 5: -39.682 dB 12.300 000 000 GHz



CH3 Markers  
1: -40.299 dB  
12.2000 GHz  
2: -39.682 dB  
12.3000 GHz  
3: -40.628 dB  
12.4000 GHz  
4: -40.299 dB  
12.2000 GHz

START12100.000 MHz STOP12500.000 MHz

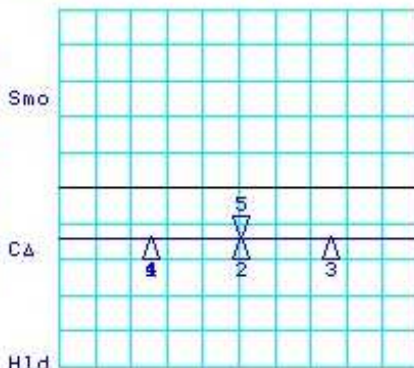
CH2 LOG 10 dB/ REF 0 dB  
S21 5: 21.945 dB 12.300 000 000 GHz



CH2 Markers  
1: 22.059 dB  
12.2000 GHz  
2: 21.945 dB  
12.3000 GHz  
3: 22.021 dB  
12.4000 GHz  
4: 22.059 dB  
12.2000 GHz

START12100.000 MHz STOP12500.000 MHz

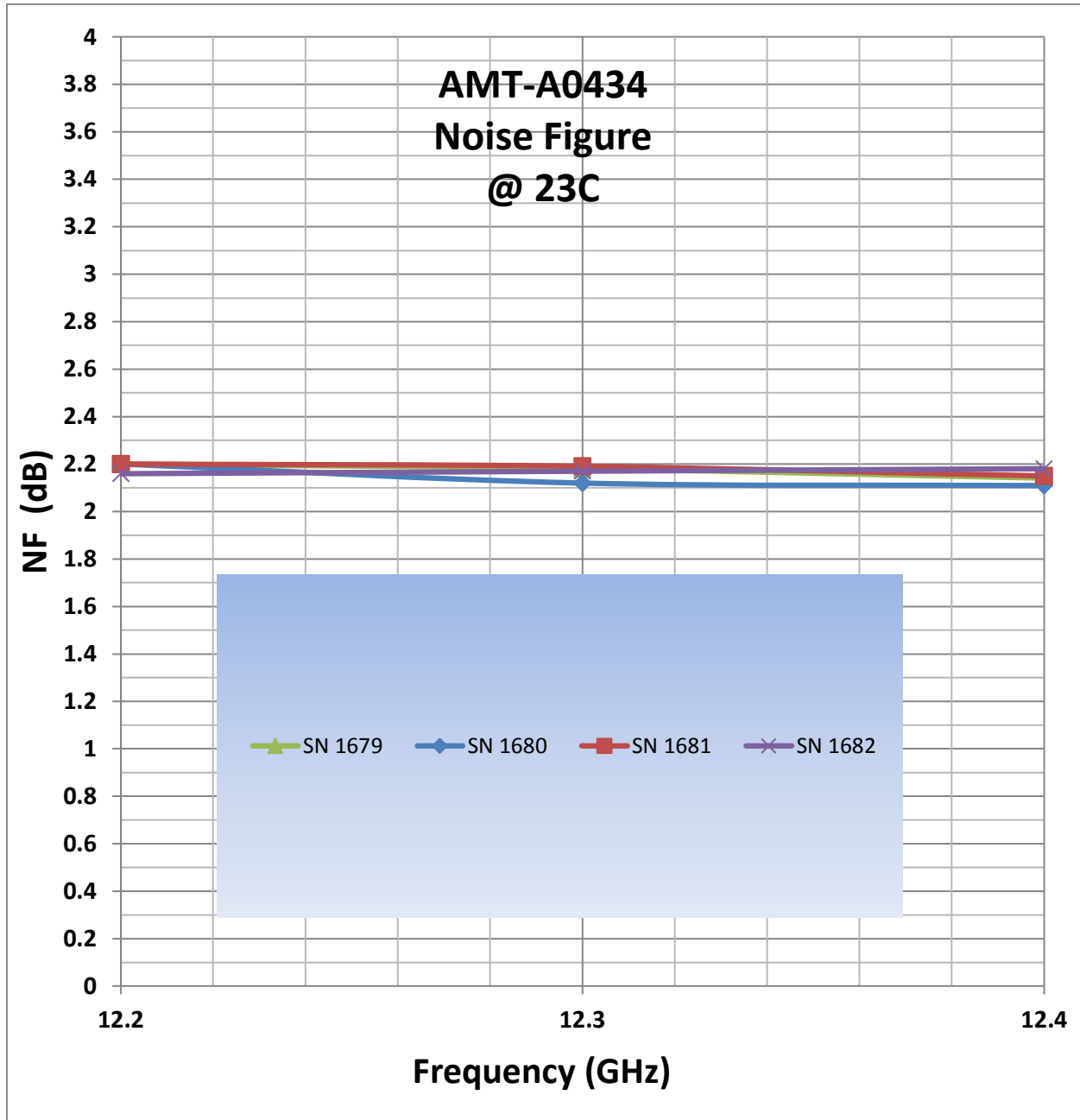
CH4 LOG 10 dB/ REF 0 dB  
S22 5: -14.007 dB 12.300 000 000 GHz



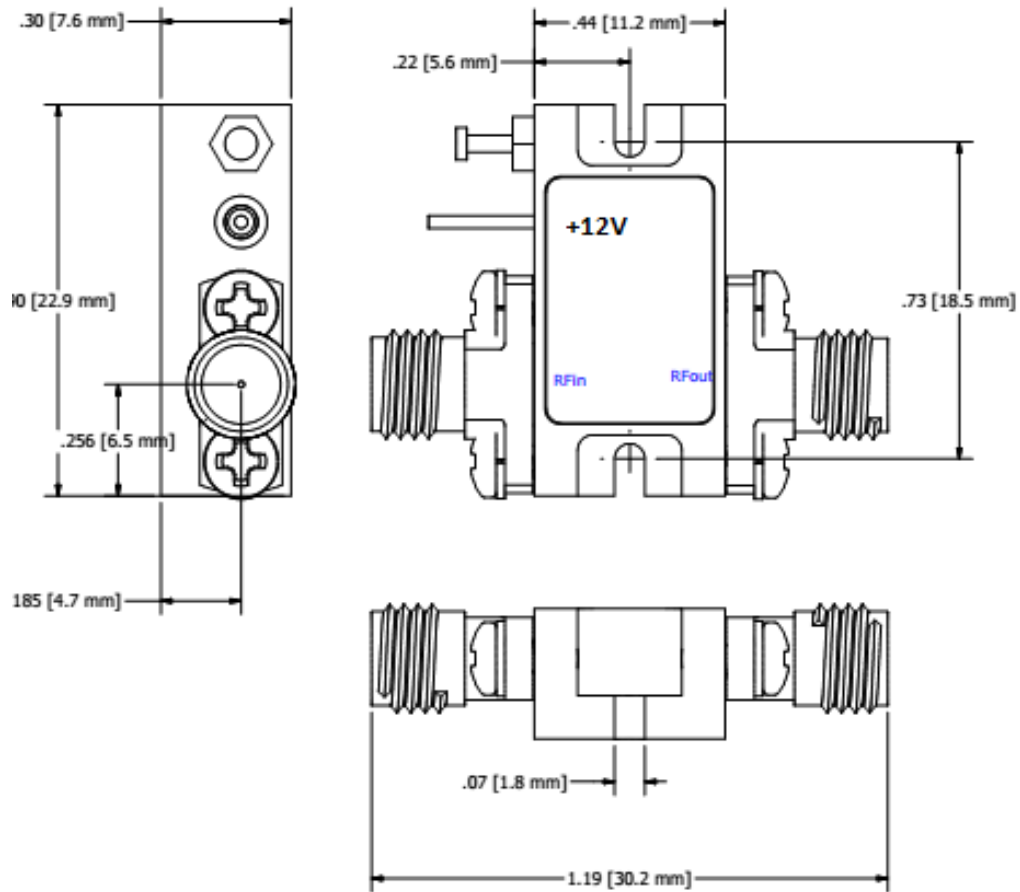
CH4 Markers  
1: -14.047 dB  
12.2000 GHz  
2: -14.007 dB  
12.3000 GHz  
3: -13.947 dB  
12.4000 GHz  
4: -14.047 dB  
12.2000 GHz

START12100.000 MHz STOP12500.000 MHz

# Typical Noise Figure @ 23°C



## Package Outline: M120 SMA Connectorized (inches)



**Housing: Aluminum Gold over Nickel plated  
Removable SMA and Ground Slug**

<b>Model Number</b>	<b>Description</b>	<b>Hermeticity</b>	<b>Package</b>
AMT-A0434	SMA Female	Non-Hermetic	Outline: M120

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:

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Phone: (984) 228-8001**

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Certified Company**



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