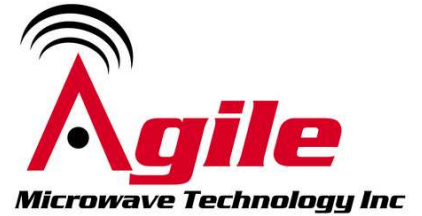


# AMT-A0394 8 GHz to 18 GHz Low Noise Amplifier

## Data Sheet



## Features

- 8 GHz to 18 GHz Frequency Range
- Typical Gain 18 dB,
- Gain Flatness  $< \pm 0.8$  dB Typical
- Typical Noise Figure  $< 1.9$  dB
- Typical P1dB  $> +12$  dBm
- Internally Regulated
- Operates from a Single +8V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



## Description

The AMT-A0394 is a Broadband Low Noise amplifier with Low noise 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 DC blocked. The AMT-A0394 is ideal for use as gain block of receiver system, or where broadband amplification is required without adding lot of noise in a Hi-Rel communications system for Commercial or Military applications

## Applications

- Receiver Input
- Radar
- Communication systems
- Microwave Radio systems
- Test Equipment

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

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		+10
Die T <sub>Junction</sub>	T <sub>J</sub>	° C		+150
Positive Supply Voltage	V <sub>+SS</sub>	V		+15

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	8		18
Gain	Small Signal	dB	16	18	
Gain Flatness <sup>2</sup>		dB		±0.7	±1.2
Output Power (P1dB)	1 dB compression point @ 14 GHz	dBm	+12	+14	
OIP3	OIP3 measured@ 14 GHz Two tone F1-F2= 10MHz	dB		22	
Noise Figure <sup>2</sup>		dB		1.8	2.1
RF Input Impedance <sup>2</sup>	Reference to 50 ohms VSWR			1.8:1	2.3:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2.3:1
Supply Voltage Positive:		V		+8	
Supply Current Positive:	Small signal current	mA		80	100

Notes:

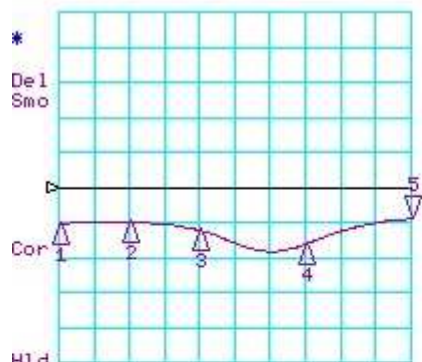
1/ Unconditional Stability:

2/ Measured with Agilent/HP Equipment, manufacturers uncertainty apply

Customized configurations of the above specifications are available

# Typical S-Parameters 25C

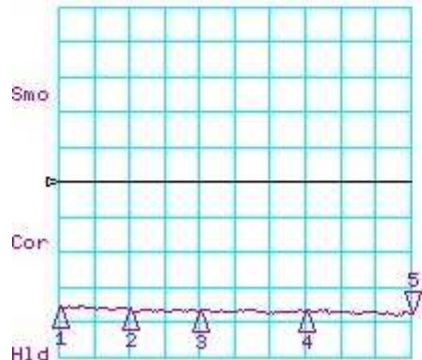
CH1 LOG 10 dB/ REF 0 dB  
S11 5:-8.9370 dB 18.000 000 000 GHz



CH1 Markers  
1:-10.198 dB  
8.00000 GHz  
2:-9.9950 dB  
10.0000 GHz  
3:-12.220 dB  
12.0000 GHz  
4:-16.209 dB  
15.0000 GHz

START 8000.000 MHz STOP18000.000 MHz

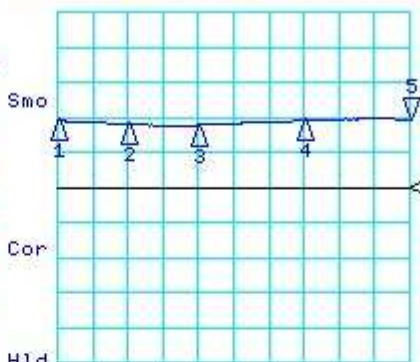
CH3 LOG 10 dB/ REF 0 dB  
S12 5:-37.575 dB 18.000 000 000 GHz



CH3 Markers  
1:-35.701 dB  
8.00000 GHz  
2:-36.247 dB  
10.0000 GHz  
3:-36.718 dB  
12.0000 GHz  
4:-36.838 dB  
15.0000 GHz

START 8000.000 MHz STOP18000.000 MHz

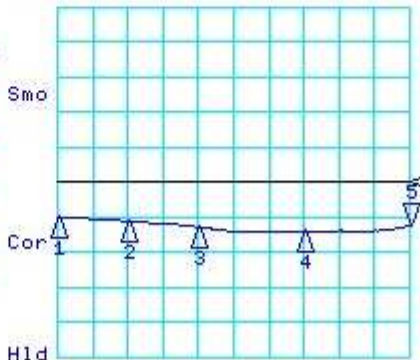
CH2 LOG 10 dB/ REF 0 dB  
S21 5:19.323 dB 18.000 000 000 GHz



CH2 Markers  
1:19.095 dB  
8.00000 GHz  
2:18.062 dB  
10.0000 GHz  
3:17.806 dB  
12.0000 GHz  
4:19.100 dB  
15.0000 GHz

START 8000.000 MHz STOP18000.000 MHz

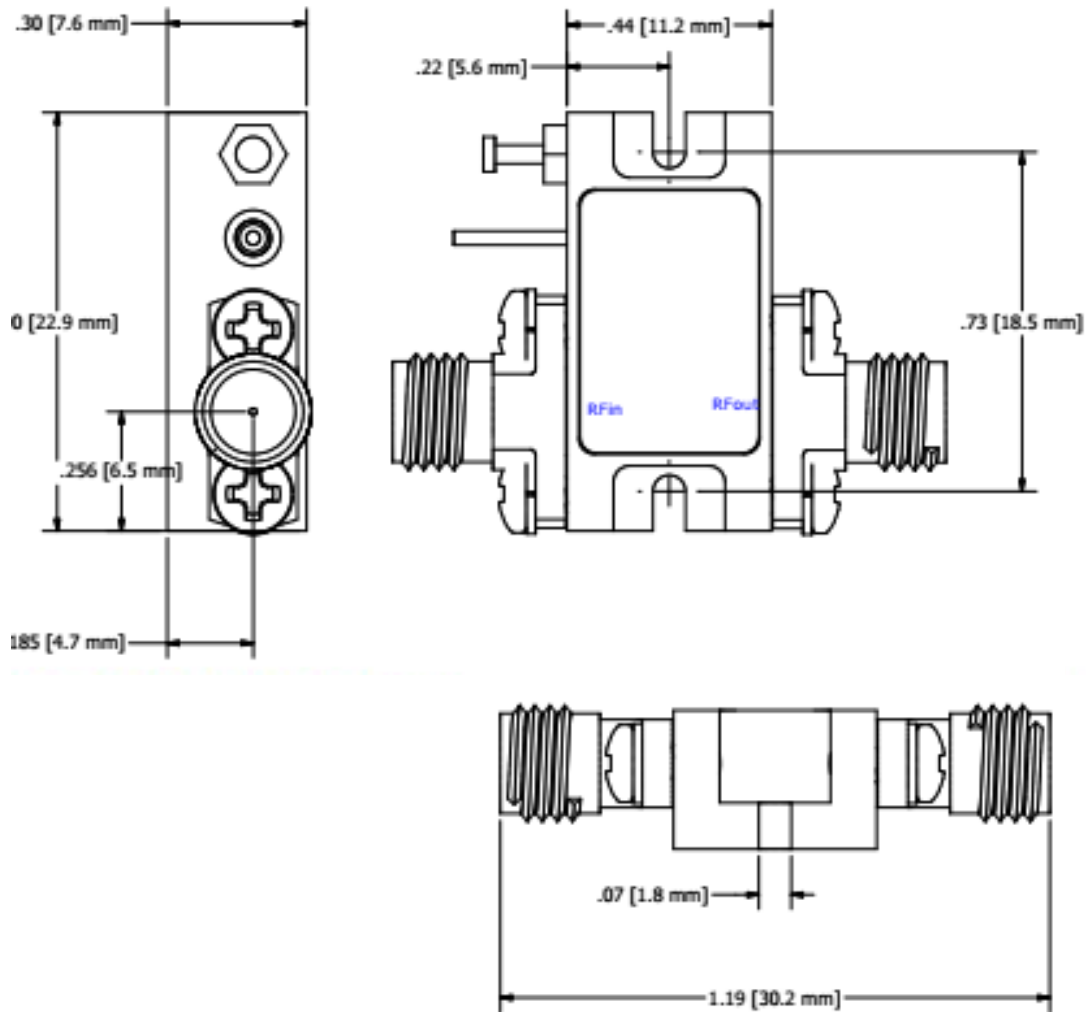
CH4 LOG 10 dB/ REF 0 dB  
S22 5:-12.444 dB 18.000 000 000 GHz



CH4 Markers  
1:-9.8760 dB  
8.00000 GHz  
2:-11.207 dB  
10.0000 GHz  
3:-12.806 dB  
12.0000 GHz  
4:-14.064 dB  
15.0000 GHz

START 8000.000 MHz STOP18000.000 MHz

## Package Outline: M120 SMA Connectorized (inches)



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

Model Number	Description	Hermeticity	Package
AMT-A0394	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.

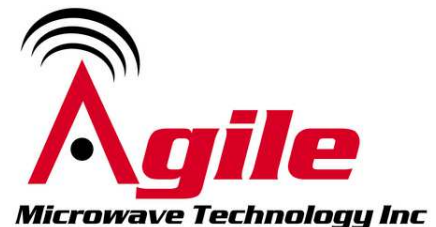
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital 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.

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Certified Company**



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