

AMT-A0197 7 GHz to 8.5 GHz Low Noise Amplifier

Data Sheet



Features

- 7 GHz to 8.5 GHz Frequency Range
- Typical Noise Figure < 1 dB
- Typical Gain 32 dB
- Gain Flatness < ± 0.4 dB
- P1dB +15 dBm Typical
- Internally Regulated
- Operates from a Single Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0197 is a 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. The AMT-A0197 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 RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T_{MO}	$^{\circ}C$	-40	+85
Storage Temperature - Case	T_{MS}	$^{\circ}C$	-55	+150
RF Input power (CW)	P_{in}	dBm		+10
Die $T_{Junction}$	T_J	$^{\circ}C$		+150
Positive Supply Voltage	V_{+SS}	V		+12.5

Do NOT apply DC to RF Input

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	7		8.5
Gain	Small Signal	dB	30	32	
Gain Flatness		dB		±0.4	± 1
Input Power	CW, without damage	dBm	10		
Output Power (P1dB)	1 dB compression point @ 8 GHz	dBm	10	15	
OIP3	OIP3 measured @ 8 GHz Two tone F1-F2= 10MHz	dB		20	
Noise Figure		dB		1	1.4
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.0:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2.0:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		100	

Notes:

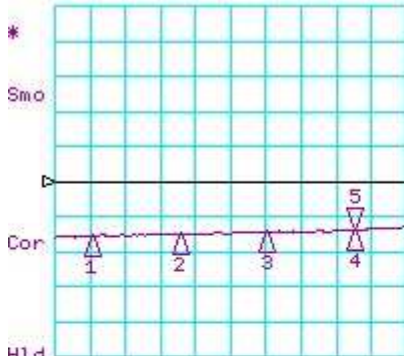
1/ Unconditional Stability

Customized configurations of the above specifications are available

Typical Performance

S-Parameters @ 23C

CH1 LOG 10 dB/ REF 0 dB
S11 5: -13.909 dB 8.499 800 000 GHz

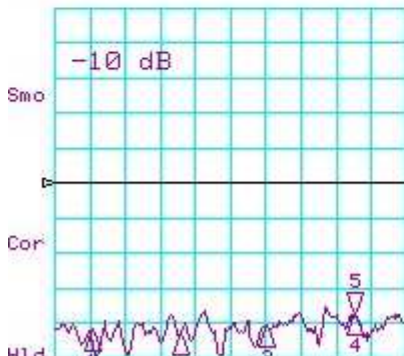


CH1 Markers

- 1: -15.690 dB
7.00000 GHz
- 2: -15.067 dB
7.50000 GHz
- 3: -14.428 dB
8.00000 GHz
- 4: -13.910 dB
8.50000 GHz
- 5: -13.909 dB
8.499 800 000 GHz

H1d
START 6800.000 MHz STOP 8800.000 MHz

CH3 LOG 10 dB/ REF -10 dB
S12 5: -47.502 dB 8.499 800 000 GHz

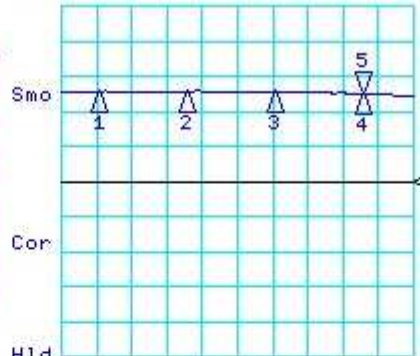


CH3 Markers

- 1: -52.083 dB
7.00000 GHz
- 2: -53.425 dB
7.50000 GHz
- 3: -51.082 dB
8.00000 GHz
- 4: -47.474 dB
8.50000 GHz
- 5: -47.502 dB
8.499 800 000 GHz

H1d
START 6800.000 MHz STOP 8800.000 MHz

CH2 LOG 5 dB/ REF 20 dB
S21 5: 32.517 dB 8.499 800 000 GHz

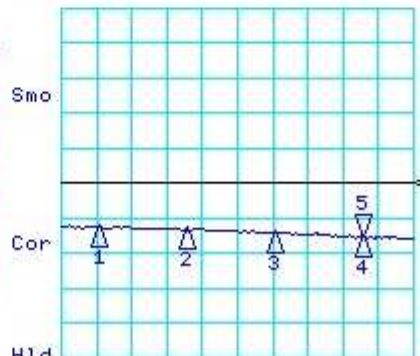


CH2 Markers

- 1: 32.748 dB
7.00000 GHz
- 2: 32.847 dB
7.50000 GHz
- 3: 32.740 dB
8.00000 GHz
- 4: 32.517 dB
8.50000 GHz
- 5: 32.517 dB
8.499 800 000 GHz

H1d
START 6800.000 MHz STOP 8800.000 MHz

CH4 LOG 10 dB/ REF 0 dB
S22 5: -15.159 dB 8.499 800 000 GHz



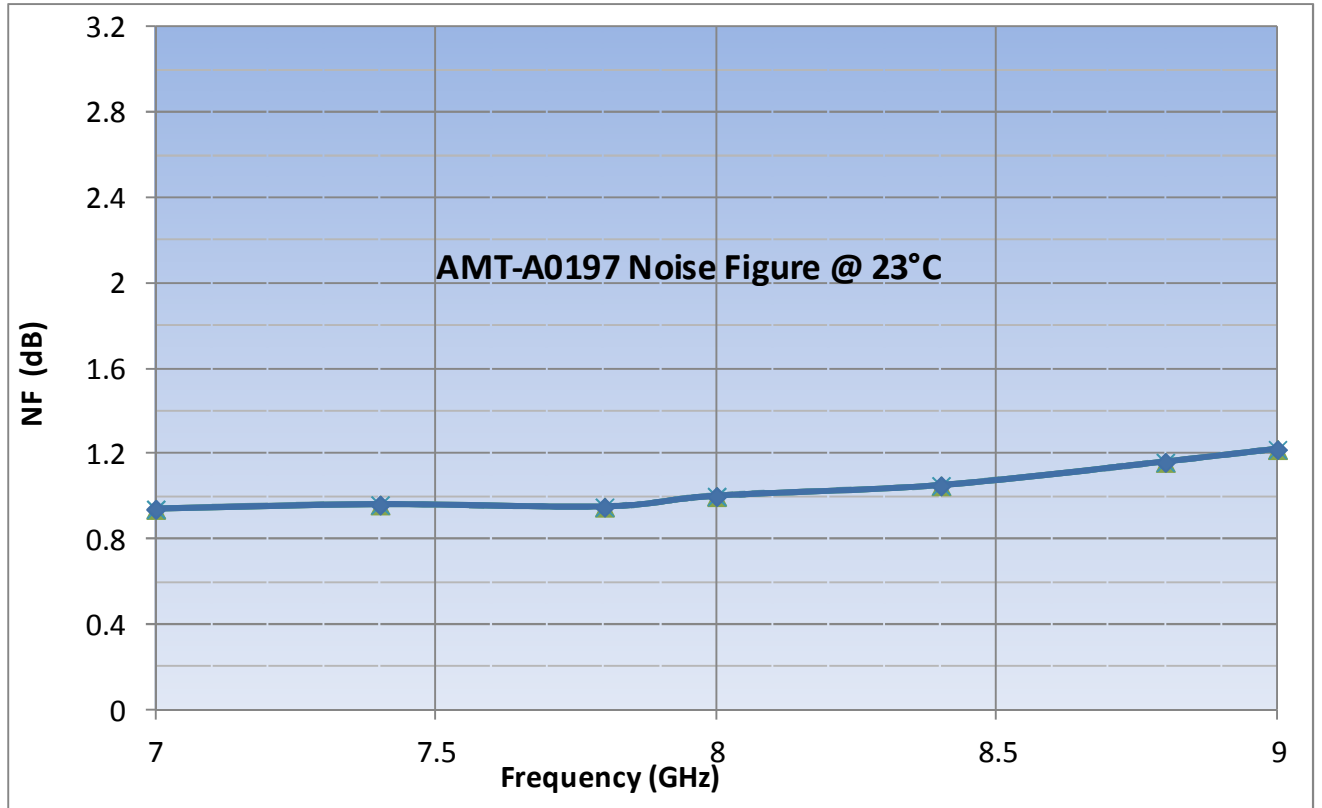
CH4 Markers

- 1: -12.531 dB
7.00000 GHz
- 2: -13.103 dB
7.50000 GHz
- 3: -14.054 dB
8.00000 GHz
- 4: -15.154 dB
8.50000 GHz
- 5: -15.159 dB
8.499 800 000 GHz

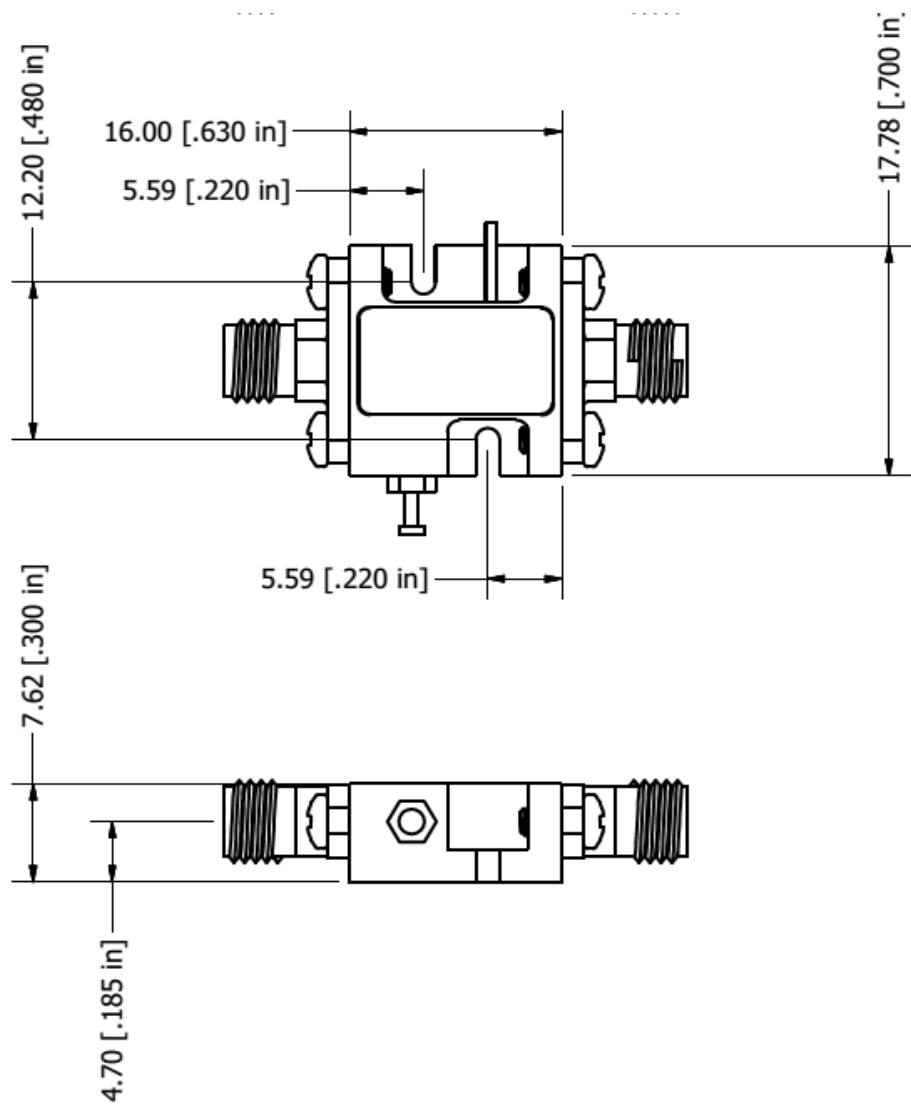
H1d
START 6800.000 MHz STOP 8800.000 MHz

Typical Performance

Noise Figure @ 23C



Package Outline: M088 SMA Connectorized (inches)



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

Model Number	Description	Hermeticity	Package
AMT-A0197	SMA Female	Non-Hermetic	Outline: M088

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.

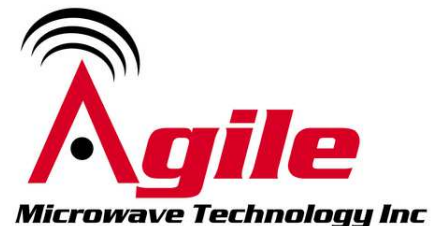
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital 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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**ISO 9001:2015
Certified Company**



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