

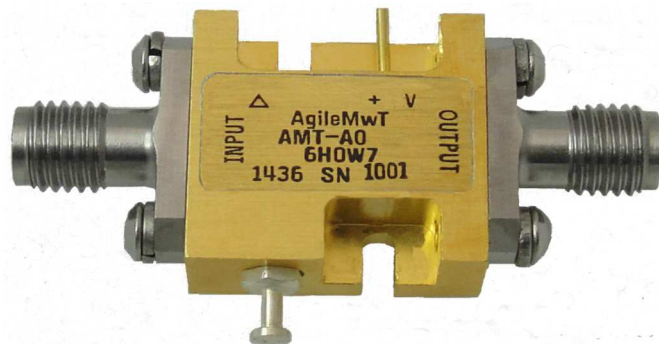
AMT-A0109 2 GHz to 8 GHz Broadband Low Noise Amplifier

Data Sheet



Features

- 2 GHz to 8 GHz Frequency Range
- Typical Noise Figure < 0.8 dB
- Typical Gain 40 dB
- Gain Flatness < ± 2 dB
- +11 dBm P1dB Typical
- Internally Regulated
- Operates from a +12V Single Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0109 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. The AMT-A0109 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}	$^{\circ}C$	-54	+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

Note: 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	2		8
Gain	Small Signal	dB	38	40	
Gain Flatness		dB		±2	
Input Power	CW, without damage	dBm	+10		
Output Power (P1dB)	1 dB compression point @ 4 GHz	dBm		11	
OIP3	OIP3 measured @ 8 GHz Two tone F1-F2= 10MHz	dBm		20	
Noise Figure		dB		0.8	1.2
RF Input Impedance	Reference to 50 ohms VSWR			2.0:1	2.4:1
RF Output Impedance	Reference to 50 ohms			1:8:1	2.3:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		100	130

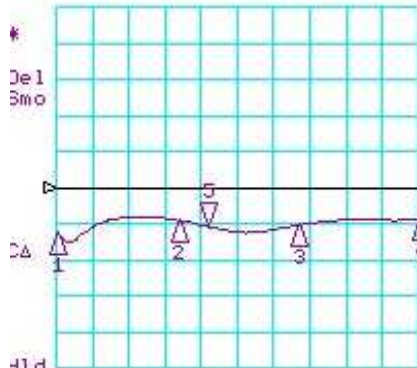
Notes:

1/ Unconditional Stability:

Customized configurations of the above specifications are available

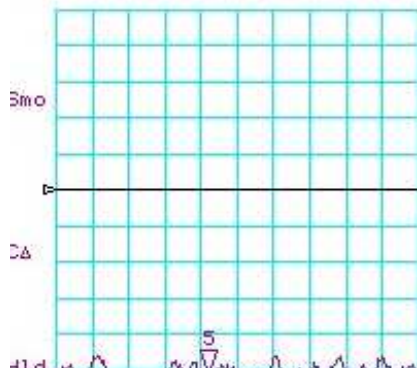
Typical S-Parameters @ 25°C

CH1 LOG 10 dB/ REF 0 dB
S11 5: -10.687 dB 4.500 000 000 GHz



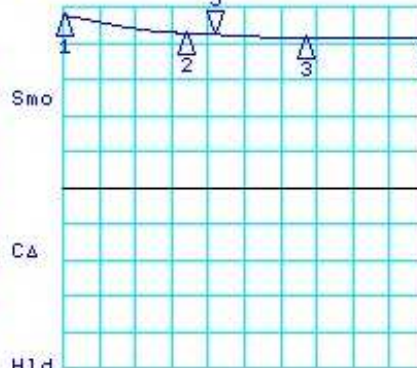
START 2000.000 MHz STOP 8000.000 MHz

CH3 LOG 10 dB/ REF 0 dB
S12 5: -52.570 dB 4.500 000 000 GHz



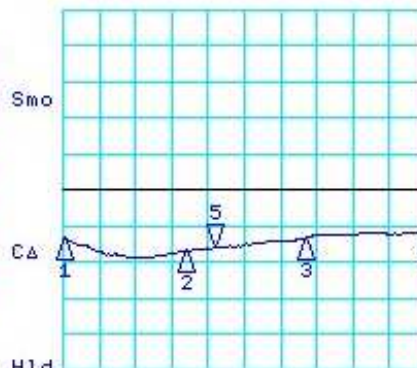
START 2000.000 MHz STOP 8000.000 MHz

CH2 LOG 10 dB/ REF 0 dB
S21 5: 42.415 dB 4.500 000 000 GHz



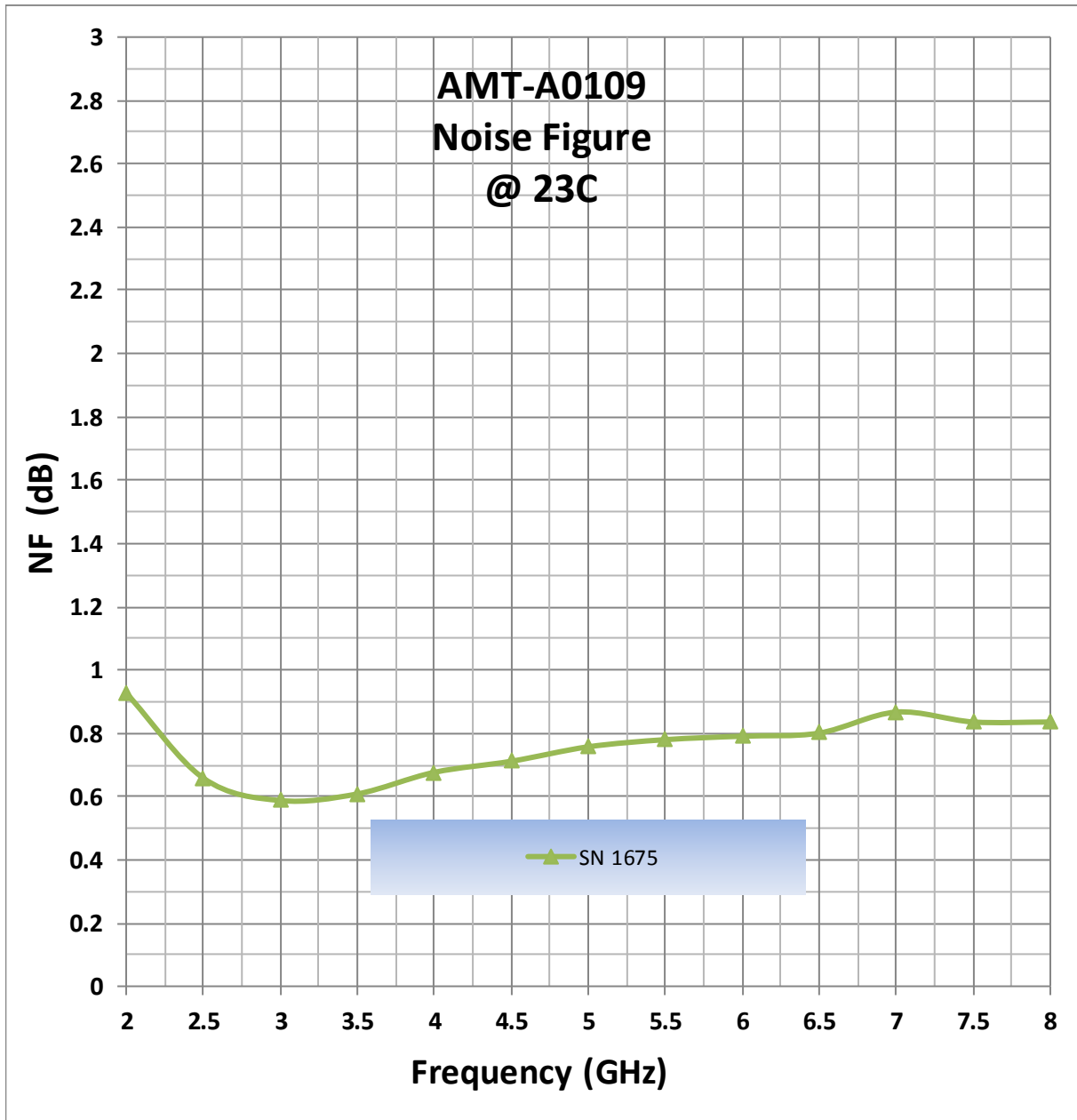
START 2000.000 MHz STOP 8000.000 MHz

CH4 LOG 10 dB/ REF 0 dB
S22 5: -16.065 dB 4.500 000 000 GHz

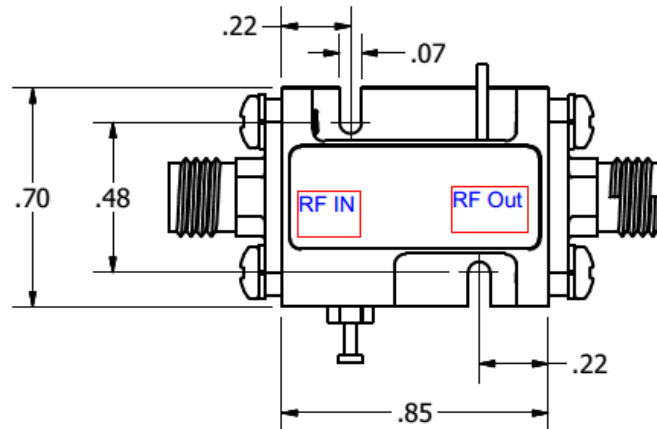
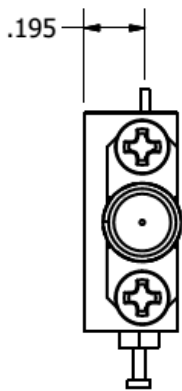
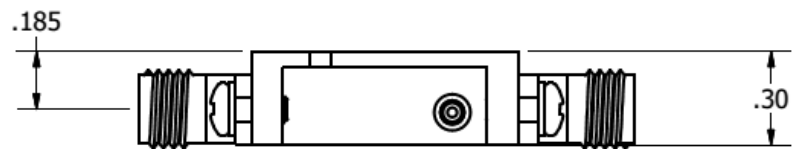
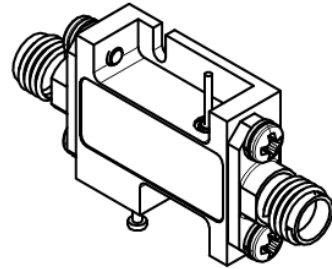


START 2000.000 MHz STOP 8000.000 MHz

Typical Noise Figure @ 25°C



Package Outline: M110 SMA Connectorized (inches)



Amplifier must be properly attached for heat dissipation
Removeable SMA and Ground slug

Model Number	Description	Hermeticity	Package
AMT-A0109	SMA Female	Non-Hermetic	Outline: M110

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.

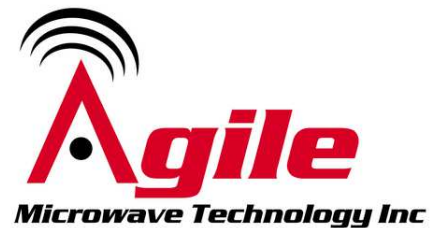
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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

**701 Cascade Pointe Lane
Cary, NC 27513**

**ISO 9001:2015
Certified Company**



Phone: (984) 228-8001 info@agilemwt.com www.agilemwt.com

AMTI reserves the right to change at any time without notice the design, specifications, function/form or availability of its products described herein. The buyer/customer has the responsibility to validate the performance for their applications. No liability is assumed as result of use of this product and no patent licenses are implied. AMTI reserves all rights.