

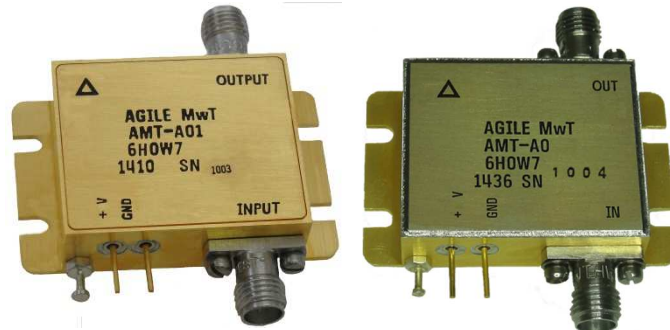
AMT-A0249 4 GHz to 8 GHz Medium Power LNA with 5 W Protection Limiter

Data Sheet



Features

- 4 GHz to 8 GHz Frequency Range
- +37 dBm (5W) CW Pin survival
- Gain 35 dB Typical
- Gain Flatness ± 0.6 dB Typical
- 2.2 dB Typical Noise Figure
- Typical P1dB power > +22 dBm
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable



Laser Sealed Hermetic

Description

The AMT-A0249 is a Low Noise Amplifier with Integrated 5W of Input power protection limiter. The performance is achieved through the use of AMTI's proprietary matching technology and latest in GaAs technology. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The AMT-A0249 is ideal for use as LNA with ability to survive RF input power condition up to 5W (+37 dBm) for test equipment, Communication systems or where broadband amplification without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

Applications

- Test Equipment
- LNA for Receiver
- EW Systems
- Lab Applications
- Radar

MAXIMUM RATINGS¹

EAR99 NLR

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T _{MO}	° C	-40	+85
Storage Temperature - Case	T _{MS}	° C	-40	+125
RF Input power (CW)	P _{in}	dBm		+37
Die T _{Junction}	T _J	° C		+150
Positive Supply Voltage	V _{+SS}	V		+15

Appropriate Heat sink must be used

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	4		8
Gain	Small Signal	dB	34	35	
Gain Flatness		dB		±0.6	±1
RF Input Power (Survival)	Input Power CW Survivability	dBm	+37		
Noise Figure		dB		2.2	2.9
Output Power (P1dB)	measured @10GHz	dBm	+21	+22	
OIP3	OPI3 @ 6 GHz Two tone F1-F2= 10MHz	dB		30	
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.0:1
RF Output Impedance	Reference to 50 ohms VSWR			1.8:1	2.0:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:	Small signal	mA		290	350

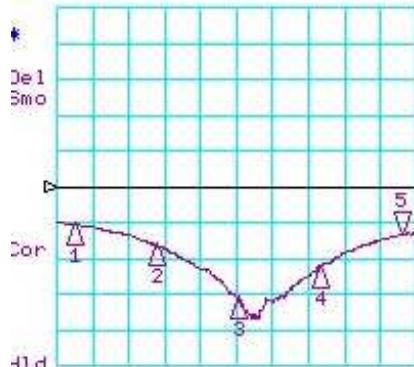
Notes:

1/ Unconditional Stability

Customized configurations of the above specifications are available

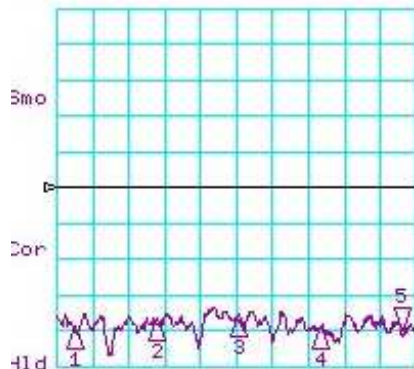
Typical S-Parameters @ 23°C

CH1 LOG 10 dB/ REF 0 dB
S11 5:-13.384 dB 8.000 000 000 GHz



CH1 Markers
1:-10.353 dB
4.00000 GHz
2:-16.175 dB
5.00000 GHz
3:-30.920 dB
6.00000 GHz
4:-22.327 dB
7.00000 GHz

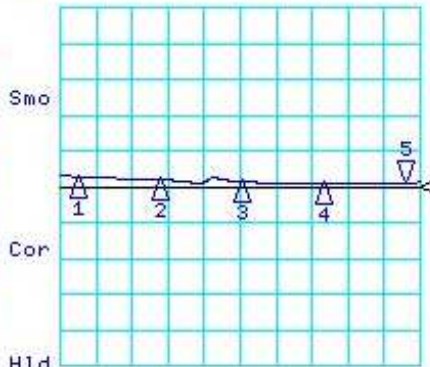
START 3800.000 MHz STOP 8200.000 MHz
CH3 LOG 10 dB/ REF -10 dB
S12 5:-49.795 dB 8.000 000 000 GHz



CH3 Markers
1:-49.146 dB
4.00000 GHz
2:-47.063 dB
5.00000 GHz
3:-46.094 dB
6.00000 GHz
4:-49.430 dB
7.00000 GHz

START 3800.000 MHz STOP 8200.000 MHz

CH2 LOG 5 dB/ REF 34 dB
S21 5: 34.552 dB 8.000 000 000 GHz



CH2 Markers
1: 35.420 dB
4.00000 GHz
2: 34.989 dB
5.00000 GHz
3: 34.737 dB
6.00000 GHz
4: 34.438 dB
7.00000 GHz

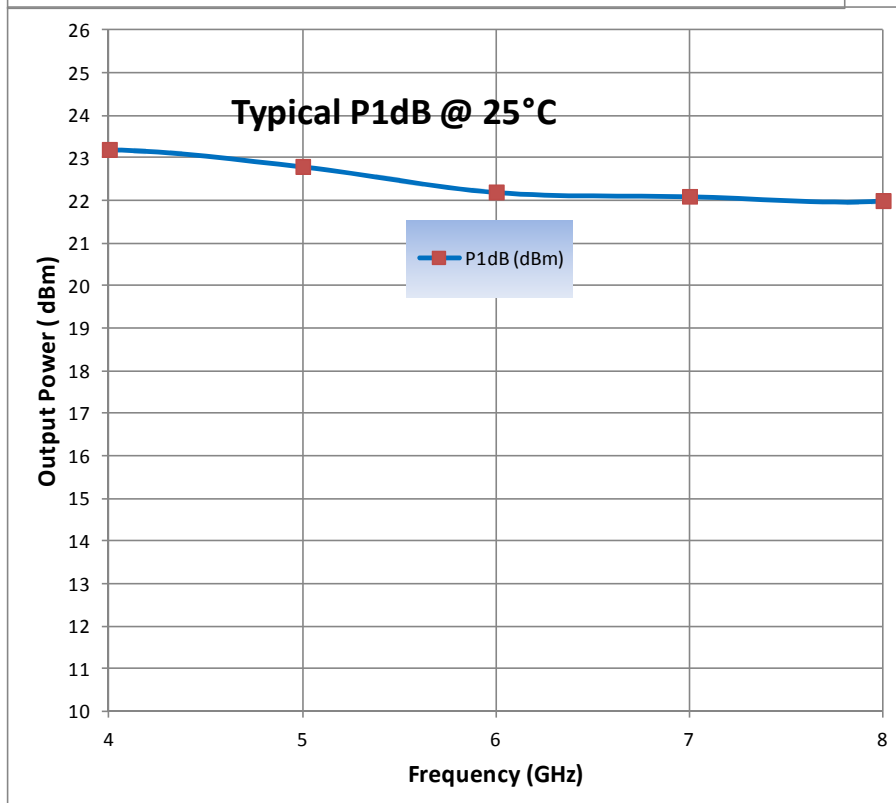
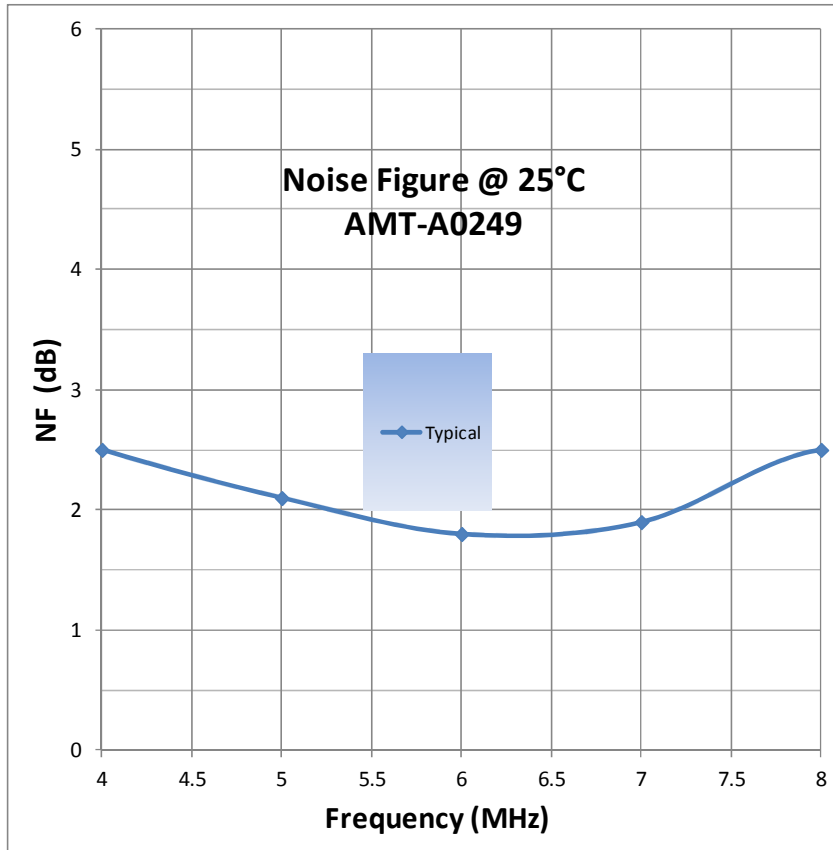
START 3800.000 MHz STOP 8200.000 MHz
CH4 LOG 10 dB/ REF 0 dB
S22 5:-14.642 dB 8.000 000 000 GHz



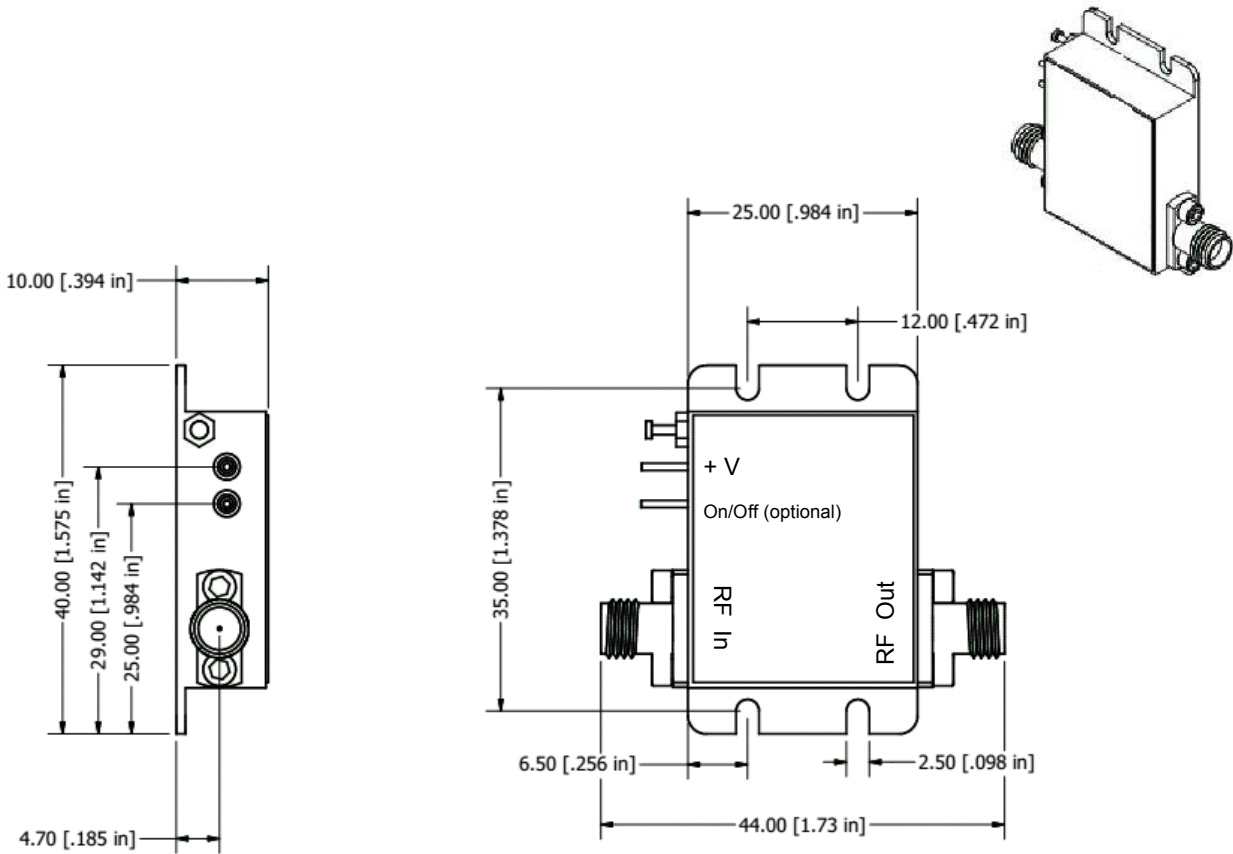
CH4 Markers
1:-12.111 dB
4.00000 GHz
2:-11.835 dB
5.00000 GHz
3:-13.027 dB
6.00000 GHz
4:-15.716 dB
7.00000 GHz

START 3800.000 MHz STOP 8200.000 MHz

Typical P1dB @ 23°C



Package Outline M020: SMA Connectorized mm(inches)



Field replaceable SMA Connectors, Removable Ground slug

Note: The unit must be attached to proper heat sink

Model Number	Description	Hermeticity	Package
AMT-A0249	SMA Female	Non-Hermetic	Outline: M020
AMT-A0249-H	SMA Female	Hermetic Laser Weld Tested to Leak Rate $<2.0 \times 10^{-8}$	Outline: M020

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.

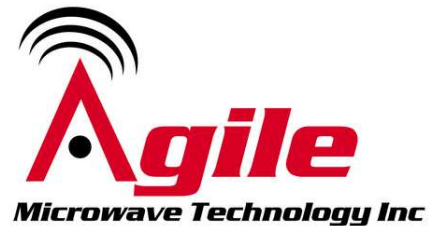
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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