

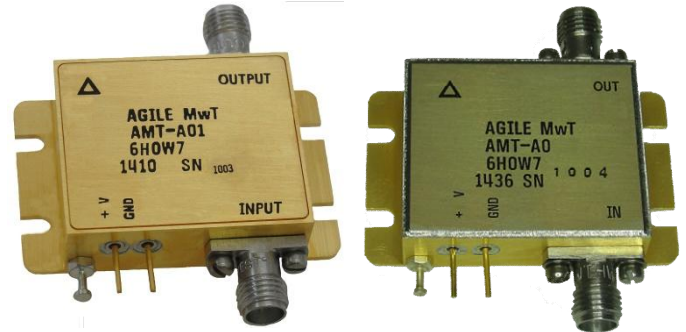
AMT-A0246 4 GHz to 8 GHz Broadband LNA with 5 W Protection Limiter

Data Sheet



Features

- 4 GHz to 8 GHz Frequency Range
- +37 dBm (5W) CW Pin survival
- Gain 28 dB Typical
- Gain Flatness ± 0.6 dB Typical
- 2.2 dB Typical Noise Figure
- Typical P1dB power > +17 dBm
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable



Laser Sealed Hermetic

Description

The AMT-A0246 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-A0246 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	26	28	
Gain Flatness		dB		±0.6	±1
RF Input Power (Survival)	Input Power CW Survivability	dBm	+37		
Noise Figure		dB		2.2	2.8
Output Power (P1dB)	measured @10GHz	dBm	+15	+18	
OIP3	OPI3 @ 6 GHz Two tone F1-F2= 10MHz	dB		25	
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		160	200

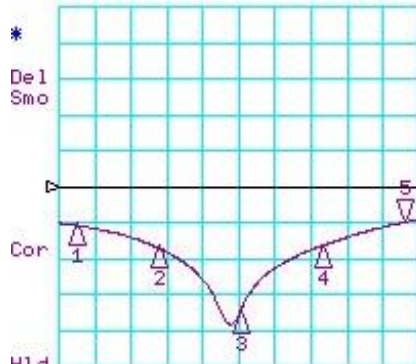
Notes:

1/ Unconditional Stability

Customized configurations of the above specifications are available

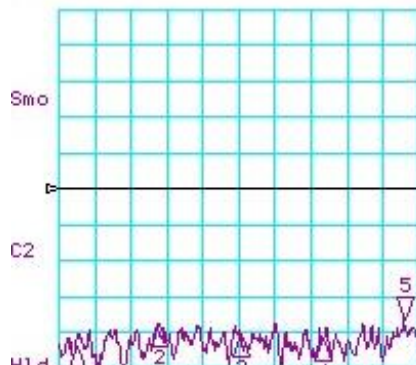
Typical S-Parameters @ 23°C

CH1 LOG 10 dB/ REF 0 dB
S11 5: -9.9548 dB 8.000 880 000 GHz



CH1 Markers
1: -10.685 dB
4.00000 GHz
2: -16.861 dB
5.00000 GHz
3: -35.179 dB
6.00000 GHz
4: -16.484 dB
7.00000 GHz

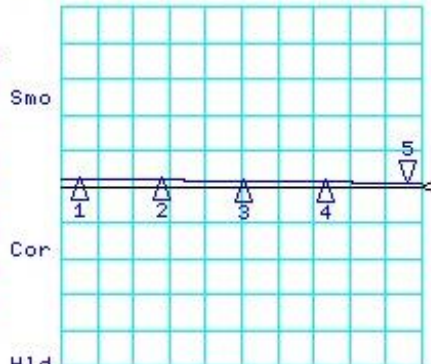
H1d
START 3800.000 MHz STOP 8200.000 MHz
CH3 LOG 10 dB/ REF -20 dB
S12 5: -56.188 dB 8.000 880 000 GHz



CH3 Markers
1: -64.643 dB
4.00000 GHz
2: -58.306 dB
5.00000 GHz
3: -60.779 dB
6.00000 GHz
4: -62.162 dB
7.00000 GHz

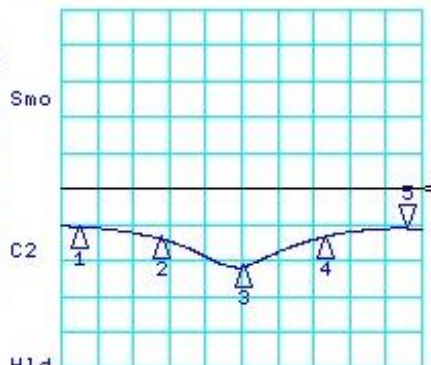
H1d
START 3800.000 MHz STOP 8200.000 MHz

CH2 LOG 10 dB/ REF 26 dB
S21 5: 26.966 dB 8.000 880 000 GHz



CH2 Markers
1: 28.229 dB
4.00000 GHz
2: 28.032 dB
5.00000 GHz
3: 27.543 dB
6.00000 GHz
4: 27.369 dB
7.00000 GHz

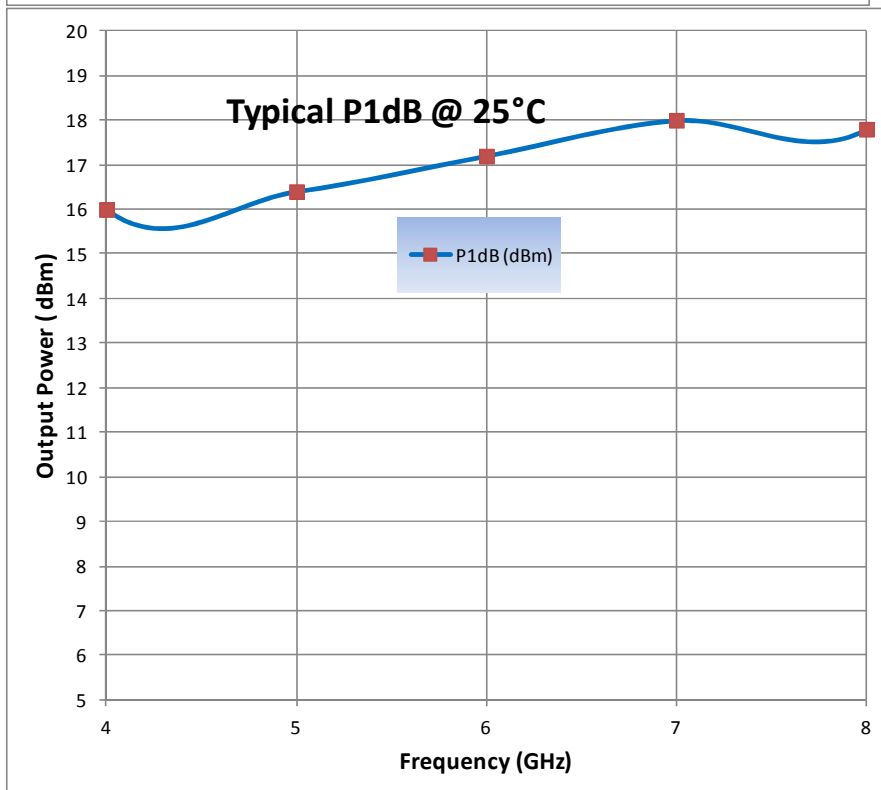
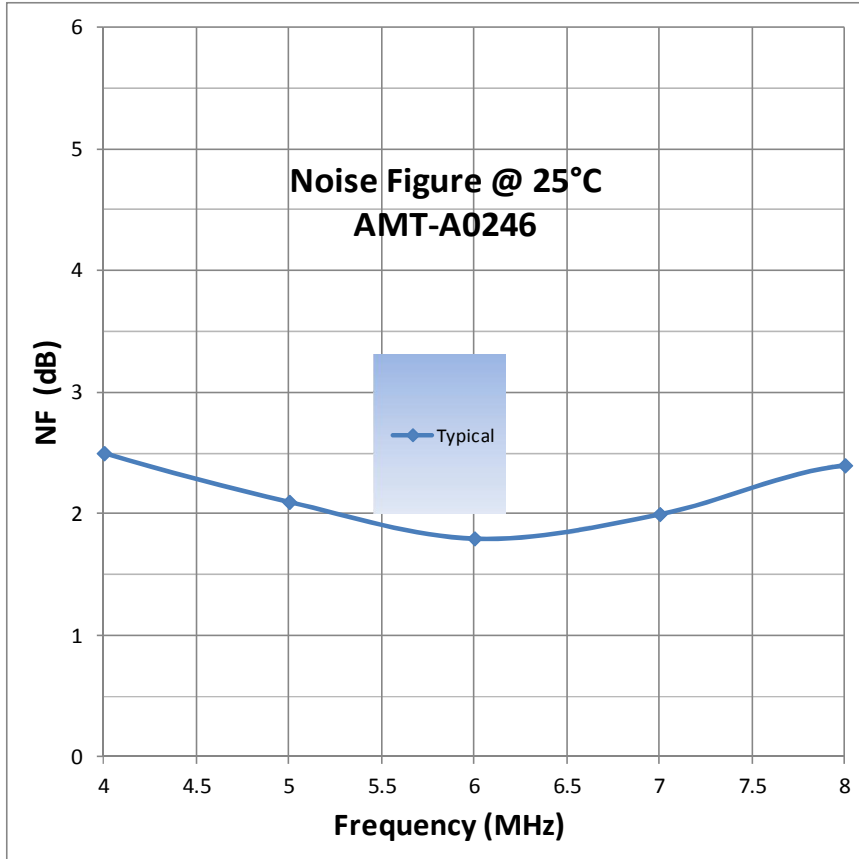
H1d
START 3800.000 MHz STOP 8200.000 MHz
CH4 LOG 10 dB/ REF 0 dB
S22 5: -11.019 dB 8.000 880 000 GHz



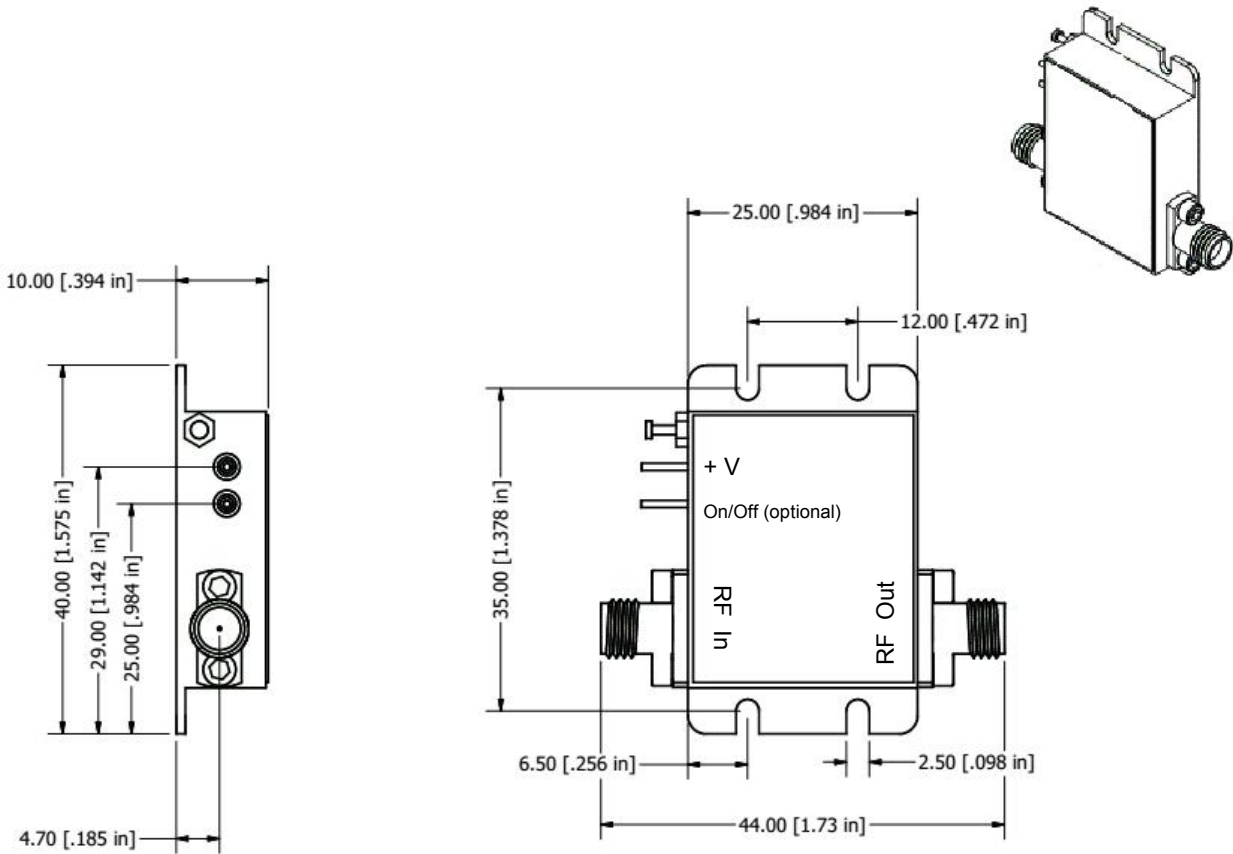
CH4 Markers
1: -10.512 dB
4.00000 GHz
2: -13.783 dB
5.00000 GHz
3: -21.715 dB
6.00000 GHz
4: -13.362 dB
7.00000 GHz

H1d
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-A0246	SMA Female	Non-Hermetic	Outline: M020
AMT-A0246-H	SMA Female	Hermetic Laser Weld Tested to Leak Rate 2.0×10^{-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.

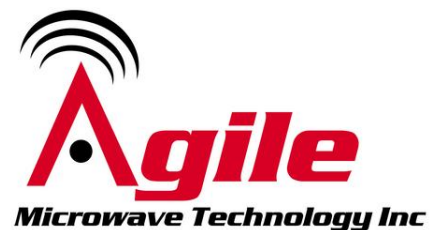
Contact Information:

**101 Bloomingdale Road
Hicksville, NY 11801**

Phone: (516) 931-1760

Fax: (212) 374-1153

info@agilemwt.com



www.agilemwt.com

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