

AMT-A0250 12 GHz to 18 GHz Ultra Low Noise Amplifier

Data Sheet



Features

- 12 GHz to 18 GHz Frequency Range
- **Typical Noise Figure 1 dB**
- Typical Gain 35 dB
- Gain Flatness $< \pm 1.4$ dB
- P1dB +15 dBm Typical
- Internally Regulated
- Operates from a Single +12V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0250 is a Ultra 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-A0250 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}	° C	-40	+85
Storage Temperature - Case	T_{MS}	° C	-55	+125
RF Input power (CW)	P_{in}	dBm		+10
Die $T_{Junction}$	T_J	° 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	12		18
Gain	Small Signal	dB	30	35	
Gain Flatness		dB		±1.4	± 2
Input Power	CW, without damage	dBm	10		
Output Power (P1dB)	1 dB compression point @ 15GHz	dBm	10	15	
OIP3	OIP3 measured @ 15 GHz Two tone F1-F2=10MHz	dB		20	
Noise Figure		dB		1	1.3
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2.2:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		75	100

Notes:

1/ Unconditional Stability

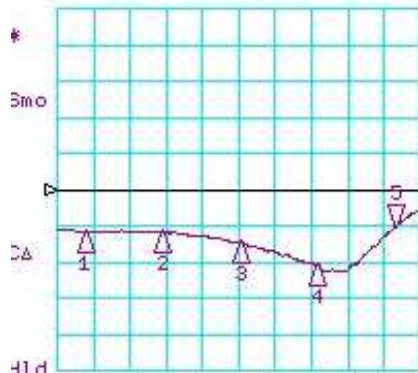
2/ Noise Figure measurement uncertainty of 0.1 dB per Agilent/HP

Customized configurations of the above specifications are available

Typical Performance

S-Parameters @ 23C

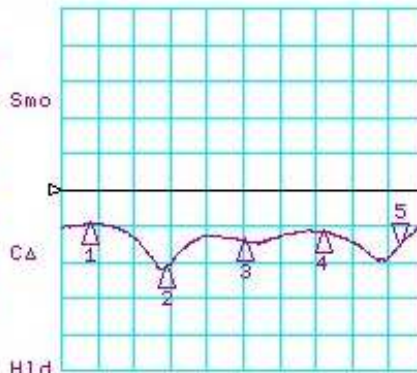
CH1 LOG 10 dB/ REF 0 dB
 S11 5: -10.239 dB 18.000 000 000 GHz



CH1 Markers
 1: -11.724 dB
 12.0000 GHz
 2: -11.727 dB
 13.5000 GHz
 3: -14.695 dB
 15.0000 GHz
 4: -20.832 dB
 16.5000 GHz

START 11500.000 MHz STOP 18500.000 MHz

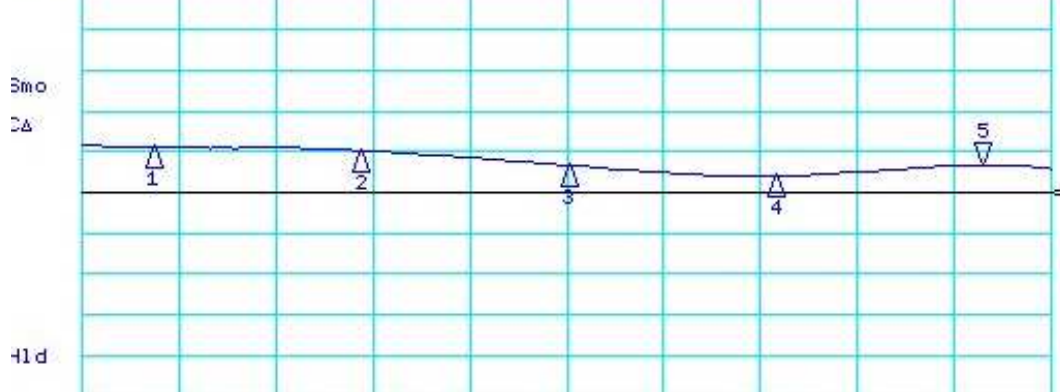
CH3 LOG 10 dB/ REF 0 dB
 S22 5: -15.510 dB 18.000 000 000 GHz



CH3 Markers
 1: -9.5720 dB
 12.0000 GHz
 2: -21.334 dB
 13.5000 GHz
 3: -13.981 dB
 15.0000 GHz
 4: -11.405 dB
 16.5000 GHz

START 11500.000 MHz STOP 18500.000 MHz

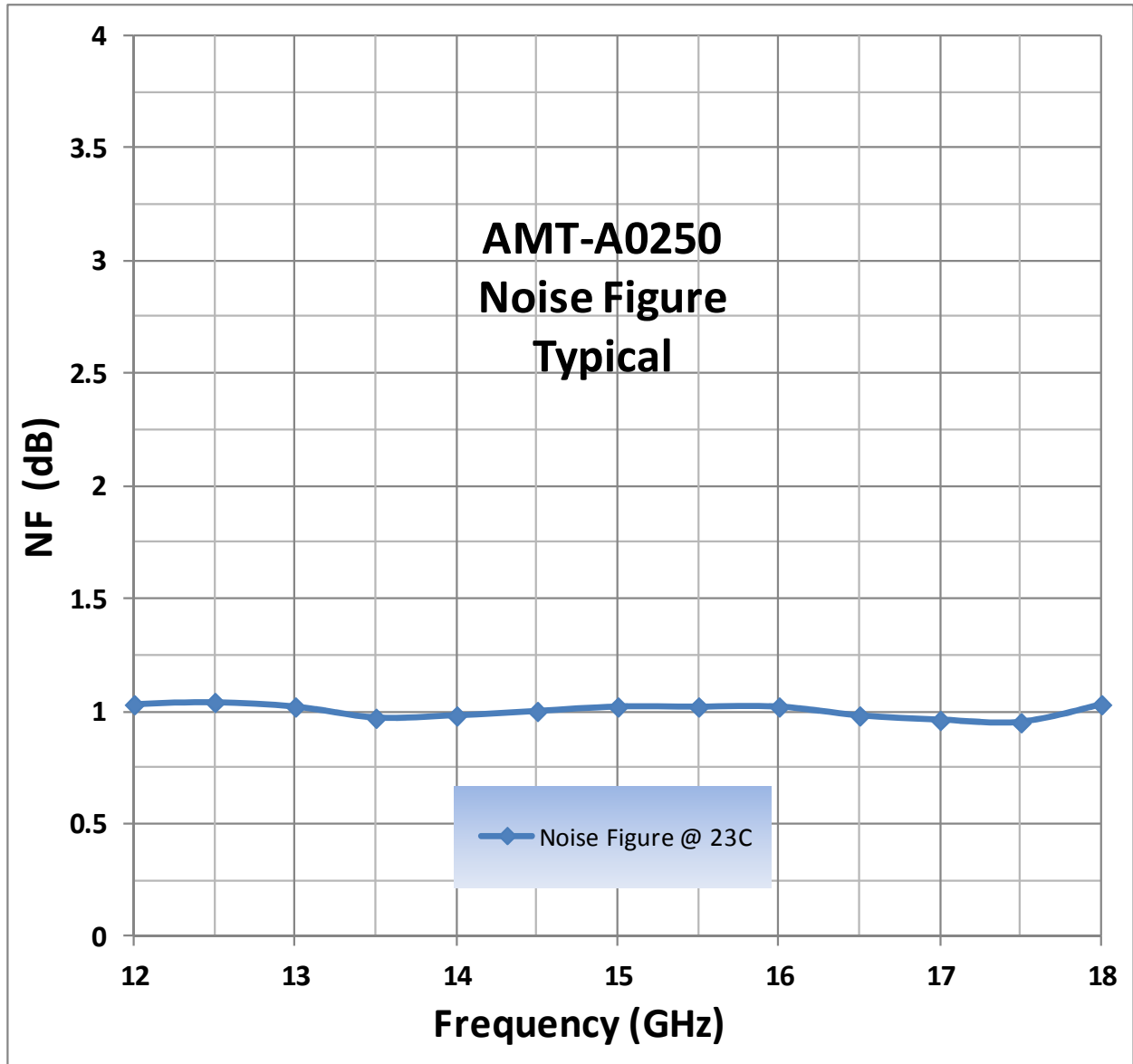
CH2 S21 LOG 4 dB/ REF 31 dB 5: 33.730 dB 18.000 000 000 GHz



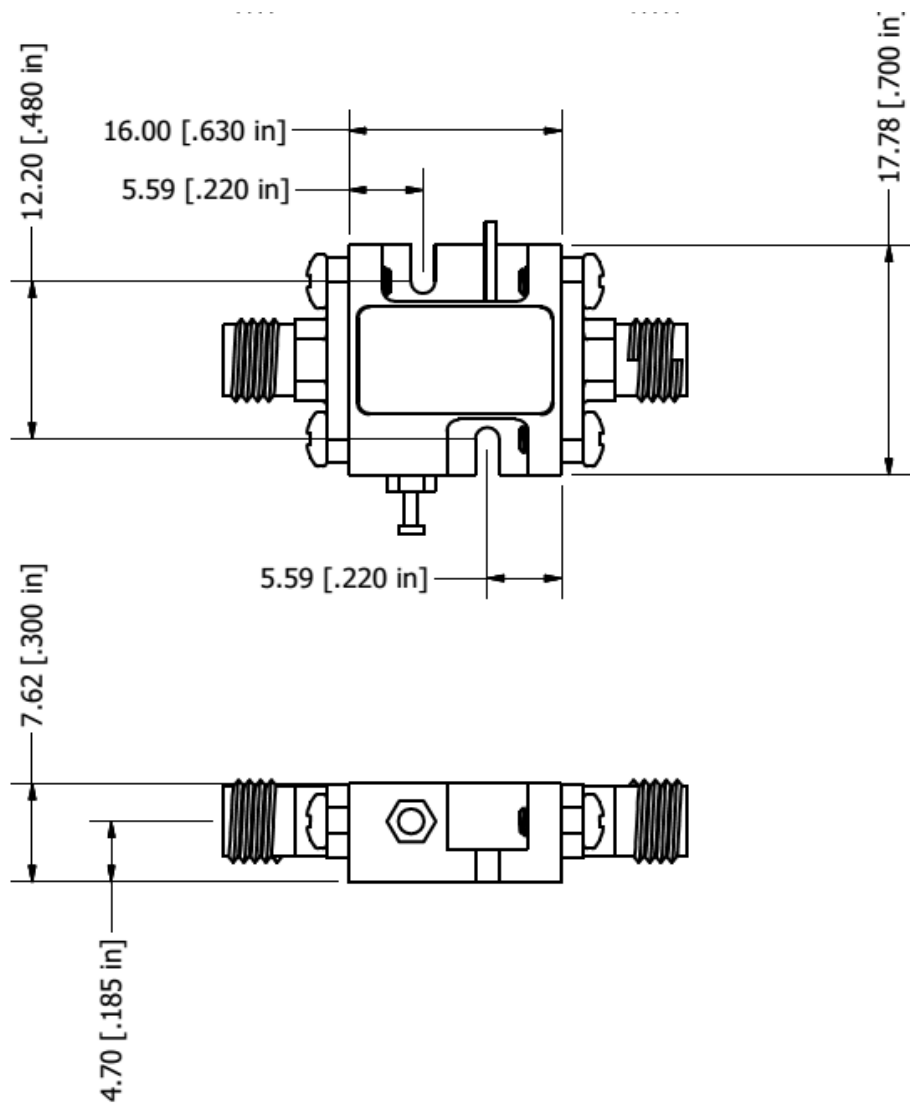
CH2 Markers
 1: 35.441 dB
 12.0000 GHz
 2: 35.155 dB
 13.5000 GHz
 3: 33.687 dB
 15.0000 GHz
 4: 32.648 dB
 16.5000 GHz

START 11.500 000 000 GHz

STOP 18.500 000 000 GHz



Package Outline: M088 SMA Connectorized (inches)



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

Model Number	Description	Hermeticity	Package
AMT-A0250	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.

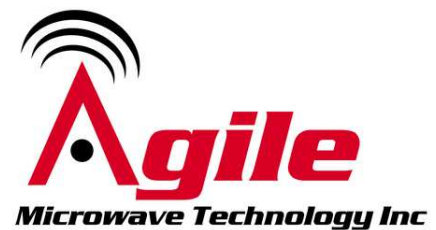
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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

Contact Information:

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

**ISO 9001:2008
Certified Company**



Phone: (984) 228-8001

info@agilemwt.com

www.agilemwt.com

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