

AMT-A0058 8 GHz to 10 GHz Broadband Ultra Low Noise Amplifier

Data Sheet



Features

- 8 GHz to 10 GHz Frequency Range
- Typical Noise Figure < 0.9 dB
- Typical Gain 35 dB
- Gain Flatness < ± 1.5 dB
- +10 dBm P1dB
- Internally Regulated
- Operates from a Single Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0058 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-A0058 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,
- Communication systems
- Microwave Radio systems
- Test Equipment

MAXIMUM RATINGS¹

EAR99 NLR

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T _{MO}	° C	-40	+85
Storage Temperature - Case	T _{MS}	° C	-55	+150
RF Input power (CW)	P _{in}	dBm		+10
Die T _{Junction}	T _J	° C		+150
Positive Supply Voltage	V _{+SS}	V		+8.5

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	8		10
Gain	Small Signal	dB	32	35	
Gain Flatness		dB		±1.5	±1.9
Input Power	CW, without damage	dBm	+10		
Output Power (P1dB)	1 dB compression point @ 9.6 GHz	dBm		10	
OIP3	OIP3 measured @ 9 GHz Two tone F1-F2= 10MHz	dB		20	
Noise Figure		dB		0.9	1.1
RF Input Impedance	Reference to 50 ohms VSWR			2.0:1	2.4:1
RF Output Impedance	Reference to 50 ohms			1:6:1	2.0:1
Supply Voltage Positive:		V		+8	
Supply Current Positive:		mA		75	120

Notes:

1/ Unconditionally Stable

Customized configurations of the above specifications are available

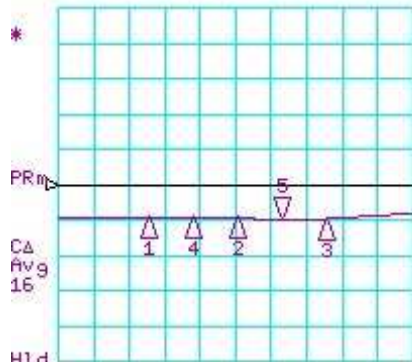
Typical Performance @ 23°C

S- Parameters

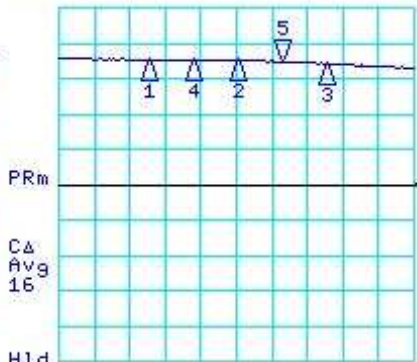
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CH1 LOG 10 dB/ REF 0 dB
S11 5: -9.9450 dB 9.499 600 000 GHz

CH2 LOG 10 dB/ REF 0 dB
S21 5: 34.812 dB 9.499 600 000 GHz



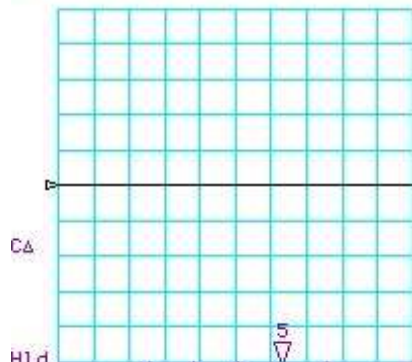
CH1 Markers
1: -9.1920 dB
8.00000 GHz
2: -9.4630 dB
9.00000 GHz
3: -9.6580 dB
10.00000 GHz
4: -9.2790 dB
8.50000 GHz



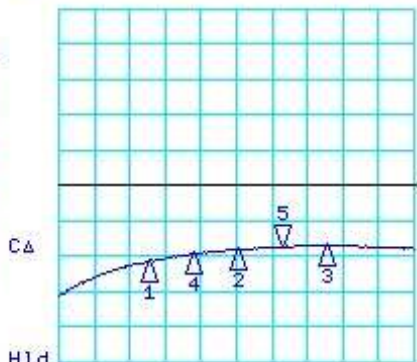
CH2 Markers
1: 35.451 dB
8.00000 GHz
2: 35.318 dB
9.00000 GHz
3: 34.100 dB
10.00000 GHz
4: 35.506 dB
8.50000 GHz

CH3 LOG 10 dB/ REF 0 dB
S12 5: -63.357 dB 9.499 600 000 GHz

CH4 LOG 10 dB/ REF 0 dB
S22 5: -17.396 dB 9.499 600 000 GHz



CH3 Markers
1: -70.581 dB
8.00000 GHz
2: -65.331 dB
9.00000 GHz
3: -63.002 dB
10.00000 GHz
4: -63.209 dB
8.50000 GHz

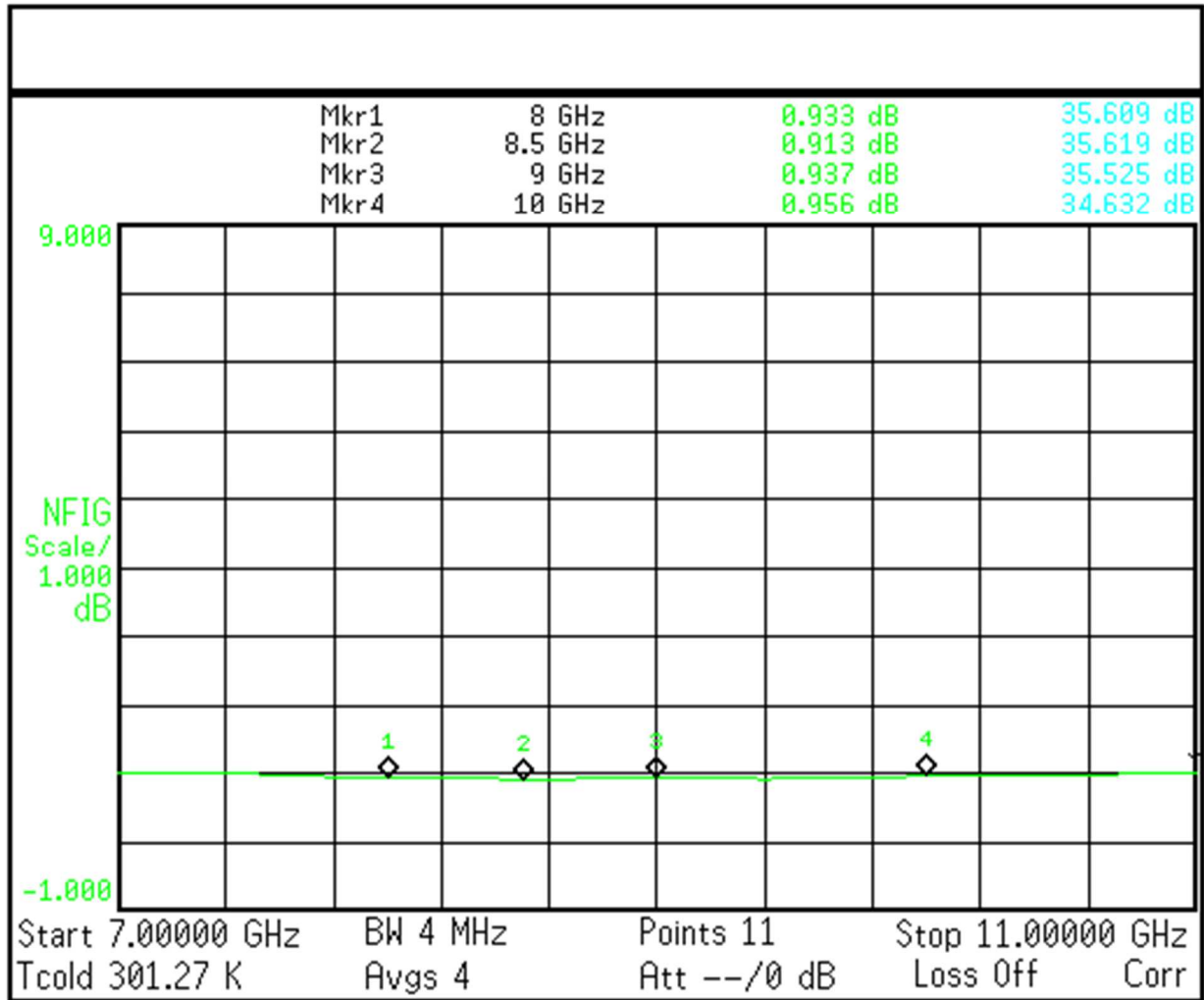


CH4 Markers
1: -21.575 dB
8.00000 GHz
2: -18.162 dB
9.00000 GHz
3: -17.242 dB
10.00000 GHz
4: -19.457 dB
8.50000 GHz

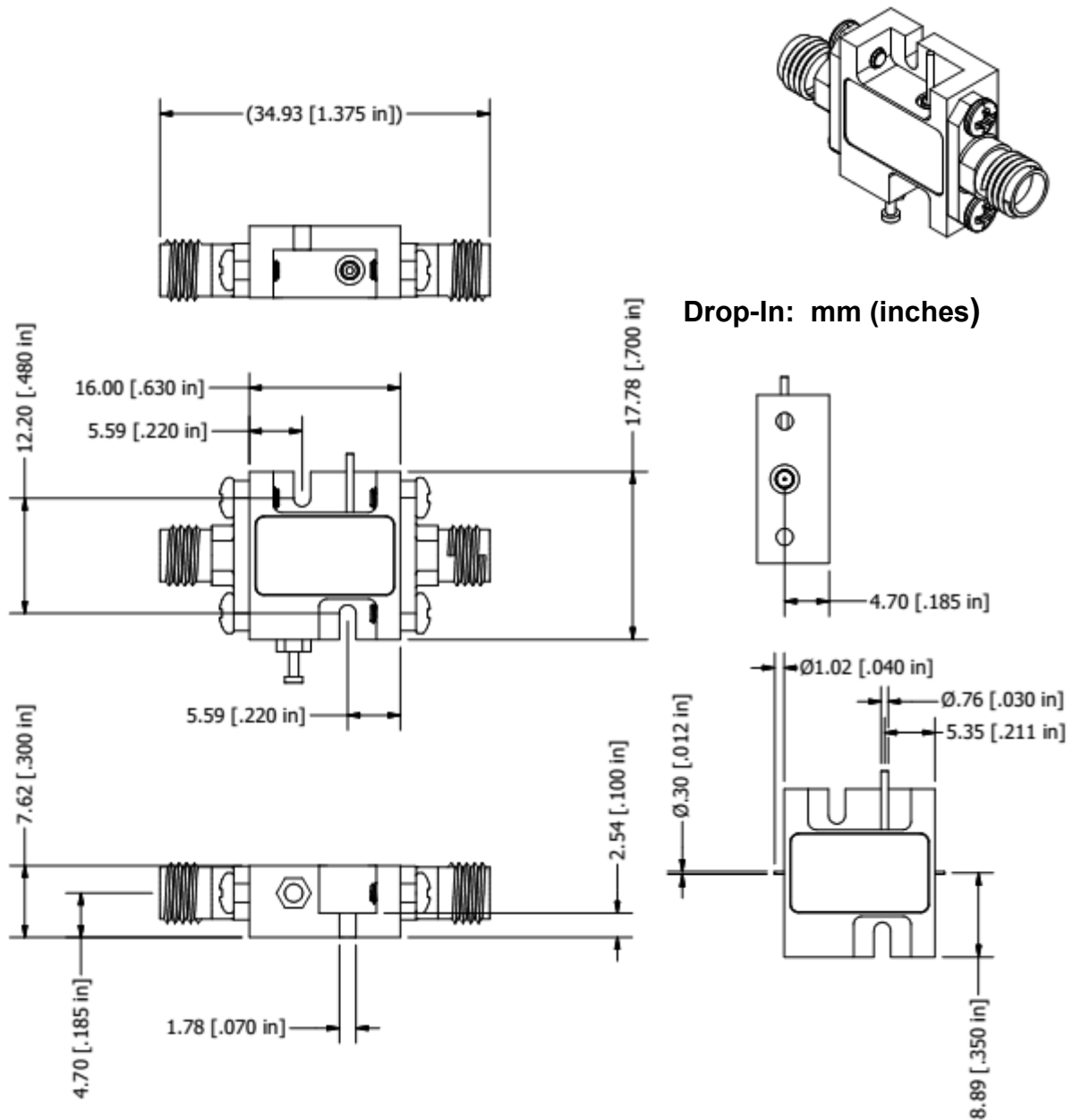
Typical Performance

Noise Figure @ 23C

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Package Outline: M088 SMA Connectorized mm (inches)



Model Number	Description	Hermeticity	Package
AMT-A0058	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:

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**ISO 9001:2015
Certified Company**



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