

# AMT-A0232 10 GHz to 18 GHz Broadband Low Noise Amplifier

## Data Sheet



## Features

- 10 GHz to 18 GHz Frequency Range
- Typical Noise Figure < 1.2 dB
- Gain 30 dB minimum, 35 dB typical
- Gain Flatness <  $\pm 1$  dB
- +10 dBm P1dB minimum, +13 dBm typ
- Internally Regulated
- Operates from a +12V Single Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



## Description

The AMT-A0232 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-A0232 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 RATINGS<sup>1</sup>

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		+15.5

### 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

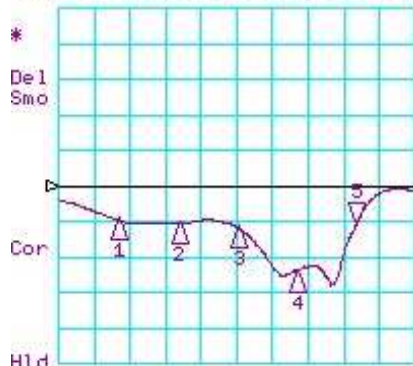
Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	10		18
Gain	Small Signal	dB	30	35	
Gain Flatness		dB		±1	±1.8
Input Power	CW, without damage	dBm	+10		
Output Power (P1dB)	1 dB compression point @ 15 GHz	dBm	10	13	
OIP3	OPI3 measured @ 15 GHz Two tone F1-F2= 10MHz	dBm		20	
Noise Figure		dB		1.2	1.8
RF Input Impedance	Reference to 50 ohms VSWR			2.0:1	2.5:1
RF Output Impedance	Reference to 50 ohms			1:8:1	2.2:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		70	130

Notes:

Customized configurations of the above specifications are available

# Typical S-Parameters @ 23°C

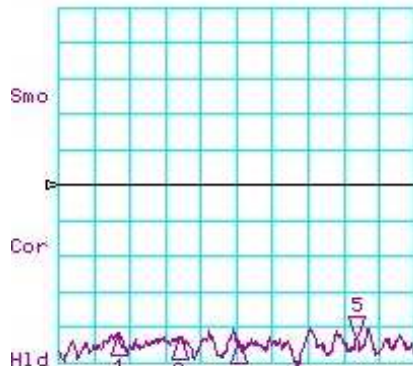
CH1 LOG 10 dB/ REF 0 dB  
S11 5:-10.758 dB 18.000 000 000 GHz



CH1 Markers  
1:-9.5530 dB  
10.0000 GHz  
2:-10.639 dB  
12.0000 GHz  
3:-11.731 dB  
14.0000 GHz  
4:-23.912 dB  
16.0000 GHz  
5:-10.758 dB  
18.0000 GHz

H1d  
START 8000.000 MHz STOP 20000.000 MHz

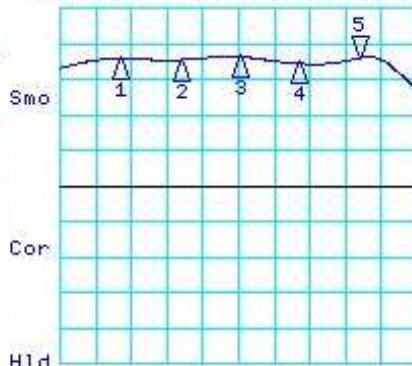
CH3 LOG 10 dB/ REF -10 dB  
S12 5:-53.028 dB 18.000 000 000 GHz



CH3 Markers  
1:-52.281 dB  
10.0000 GHz  
2:-53.073 dB  
12.0000 GHz  
3:-54.235 dB  
14.0000 GHz  
4:-60.786 dB  
16.0000 GHz  
5:-53.028 dB  
18.0000 GHz

H1d  
START 8000.000 MHz STOP 20000.000 MHz

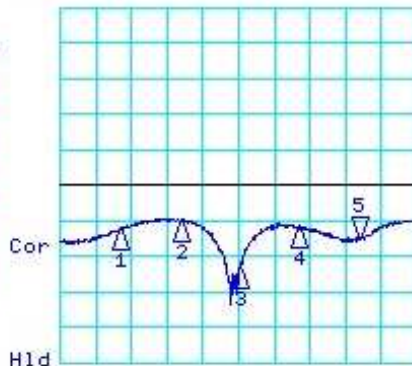
CH2 LOG 10 dB/ REF 0 dB  
S21 5: 35.965 dB 18.000 000 000 GHz



CH2 Markers  
1: 35.944 dB  
10.0000 GHz  
2: 35.552 dB  
12.0000 GHz  
3: 36.352 dB  
14.0000 GHz  
4: 34.453 dB  
16.0000 GHz  
5: 35.965 dB  
18.0000 GHz

H1d  
START 8000.000 MHz STOP 20000.000 MHz

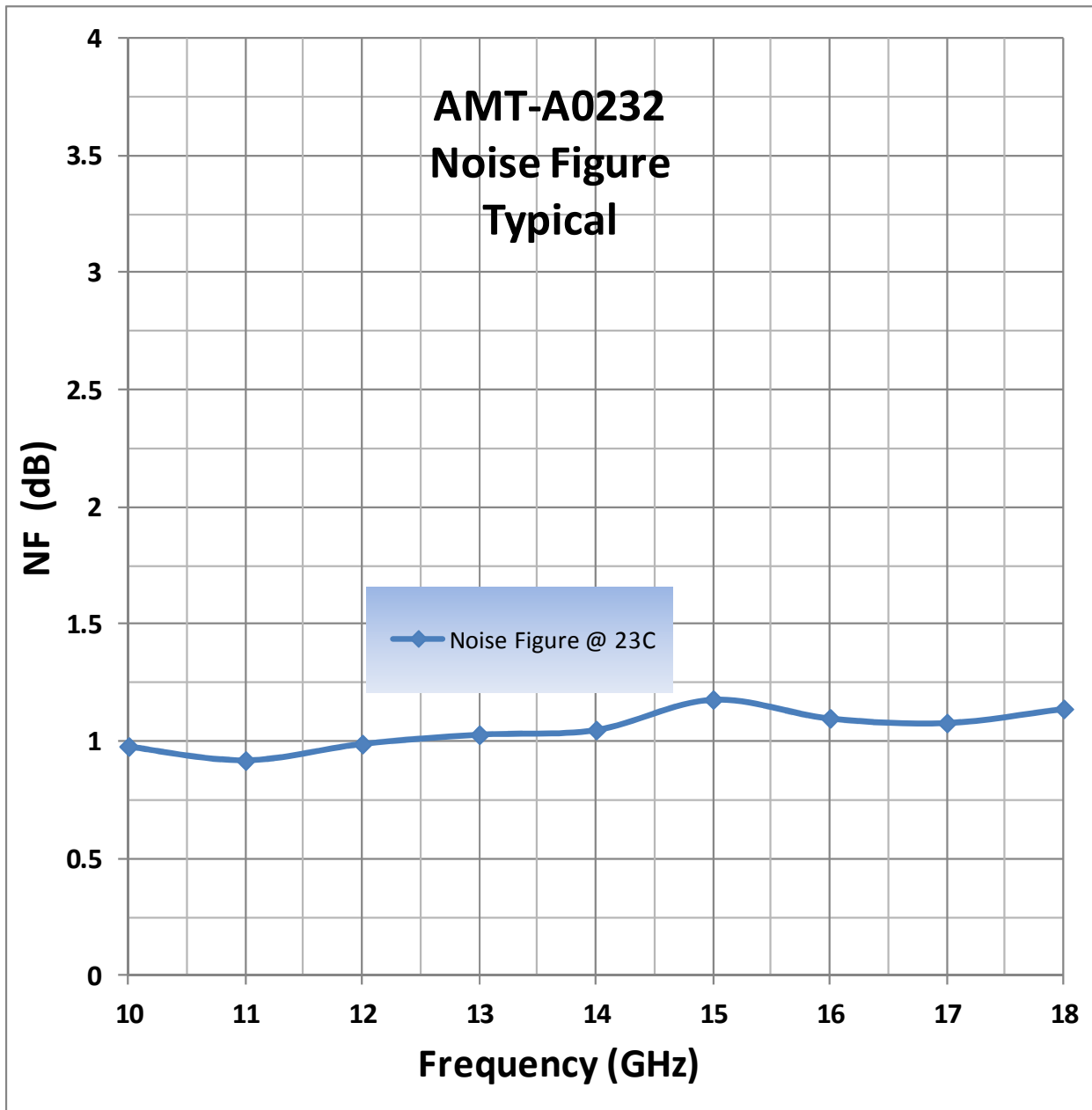
CH4 LOG 10 dB/ REF 0 dB  
S22 5:-15.040 dB 18.000 000 000 GHz



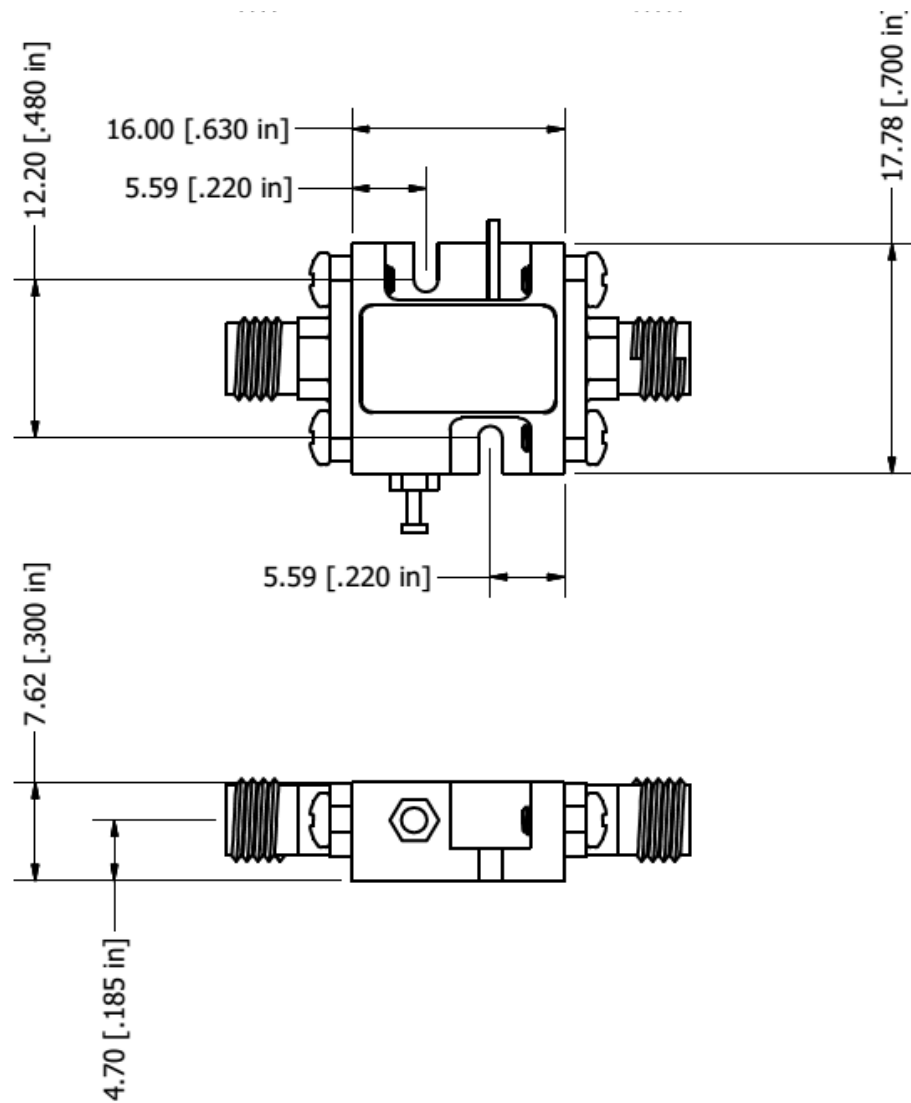
CH4 Markers  
1:-12.308 dB  
10.0000 GHz  
2:-9.8770 dB  
12.0000 GHz  
3:-23.078 dB  
14.0000 GHz  
4:-11.762 dB  
16.0000 GHz  
5:-15.040 dB  
18.0000 GHz

H1d  
START 8000.000 MHz STOP 20000.000 MHz

Typical Noise Figure @ 23°C



## Package Outline: M088 SMA Connectorized (inches)



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

Model Number	Description	Hermeticity	Package
AMT-A0232	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.

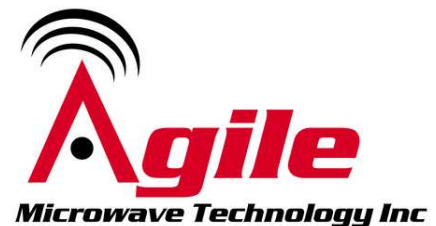
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital 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 9001:2015  
Certified Company**



**Phone: (984) 228-8001**

**[info@agilemwt.com](mailto:info@agilemwt.com)**

**[www.agilemwt.com](http://www.agilemwt.com)**

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