

# AMT-A0703 0.1 GHz to 18 GHz Broadband LNA with Medium Power & Flat Gain

## Data Sheet



## Features

- 0.1 GHz to 18 GHz Frequency Range
- Typical P1dB power > +23 dBm
- Gain 33 dB Typical
- Gain Flatness  $\pm 1$  dB Typical
- 2.5 dB Typical Noise Figure
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable



Photo for Reference only

## Typical Applications

- Test Equipment
- Communication Systems
- EW Systems
- Lab Applications
- Radar

## Absolute Maximum Ratings<sup>1</sup>

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	$T_{MO}$	$^{\circ}C$	-40	+85
Storage Temperature - Case	$T_{MS}$	$^{\circ}C$	-40	+125
RF Input power (CW)	$P_{in}$	dBm		+15
Die $T_{Junction}$	$T_J$	$^{\circ}C$		+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.

## A0703 ELECTRICAL SPECIFICATIONS @ 23°C

Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	0.1		18
Gain <sup>2</sup>	Small Signal	dB	30	33	
Gain Flatness <sup>2</sup>	From 0.3 to 18 GHz	dB		±1	±3
Noise Figure <sup>2</sup>	0.3 to 18 GHz	dB		2.5	3.2
Output Power (P1dB)	0.1 to 16 GHz, measured @10GHz	dBm	+20	+23	
Output Power (P1dB)	16 to 18 GHz	dBm	+19	+21	
OIP3	OPI3 @ 10 GHz Two tone F1-F2= 10MHz	dB		30	
RF Input Impedance <sup>2</sup>	Reference to 50 ohms VSWR			1.8:1	2.3:1
RF Output Impedance <sup>2</sup>	Reference to 50 ohms VSWR			1.8:1	2.3:1
Supply Voltage Positive:		V	+9	+12	+15
Supply Current Positive:	Small signal	mA		275	320

Notes:

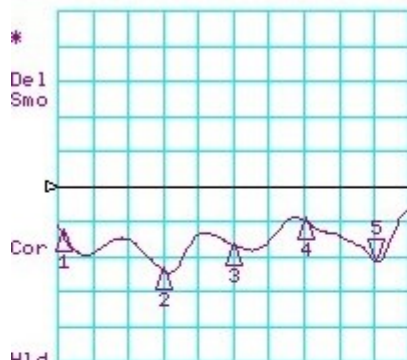
1/ Unconditional Stability

2/ Maybe higher below 300 MHz and above 18 GHz

NF using Low ENR Source and Test equipment Manufactures uncertainty applies

# Typical S-Parameters @ 23°C (SN 1909)

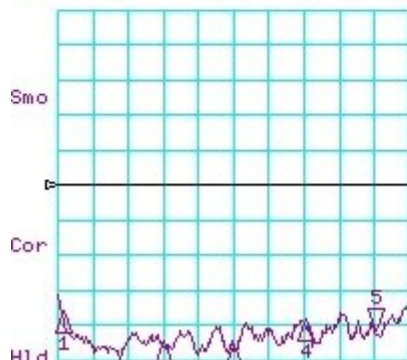
CH1 LOG 10 dB/ REF 0 dB  
S11 5: -21.229 dB 18.000 000 000 GHz



CH1 Markers  
1: -12.752 dB  
300.000 MHz  
2: -23.734 dB  
6.00000 GHz  
3: -16.535 dB  
10.0000 GHz  
4: -9.5660 dB  
14.0000 GHz

H1d  
START 100.000 MHz STOP 20000.000 MHz

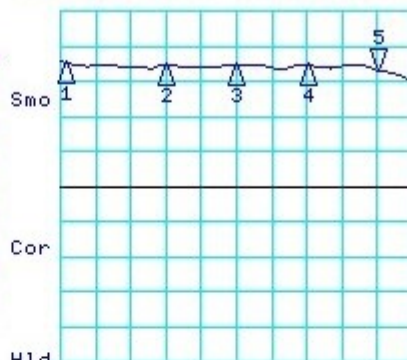
CH3 LOG 10 dB/ REF -10 dB  
S12 5: -51.497 dB 18.000 000 000 GHz



CH3 Markers  
1: -46.314 dB  
300.000 MHz  
2: -55.063 dB  
6.00000 GHz  
3: -55.978 dB  
10.0000 GHz  
4: -48.989 dB  
14.0000 GHz

H1d  
START 100.000 MHz STOP 20000.000 MHz

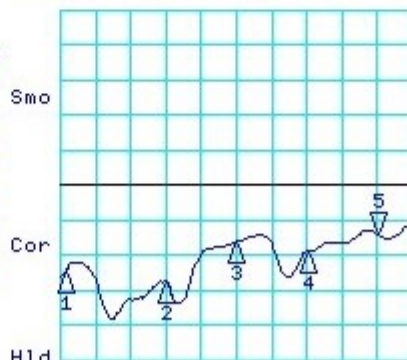
CH2 LOG 10 dB/ REF 0 dB  
S21 5: 33.206 dB 18.000 000 000 GHz



CH2 Markers  
1: 35.505 dB  
300.000 MHz  
2: 34.466 dB  
6.00000 GHz  
3: 34.687 dB  
10.0000 GHz  
4: 34.698 dB  
14.0000 GHz

H1d  
START 100.000 MHz STOP 20000.000 MHz

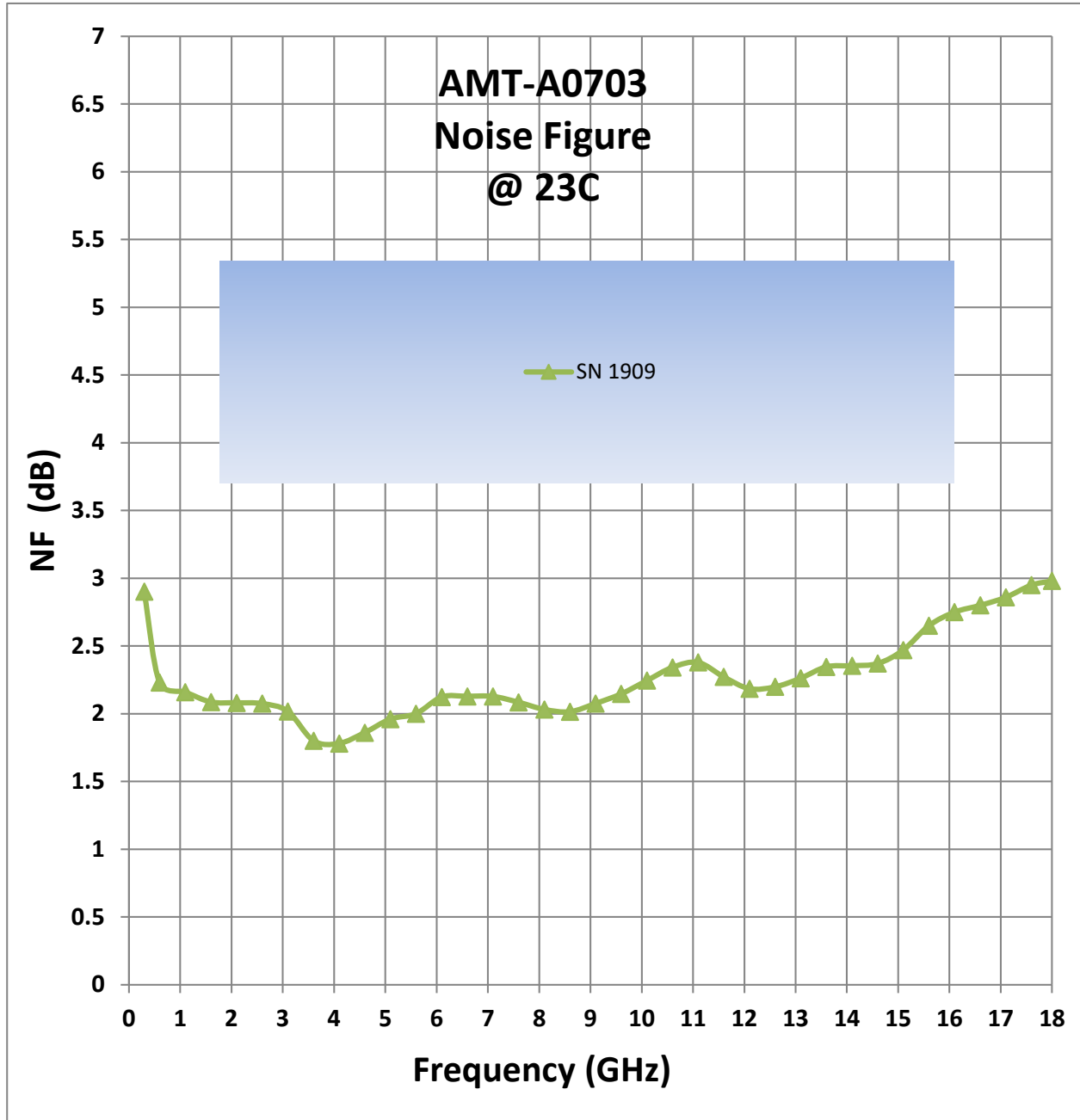
CH4 LOG 10 dB/ REF 0 dB  
S22 5: -13.965 dB 18.000 000 000 GHz



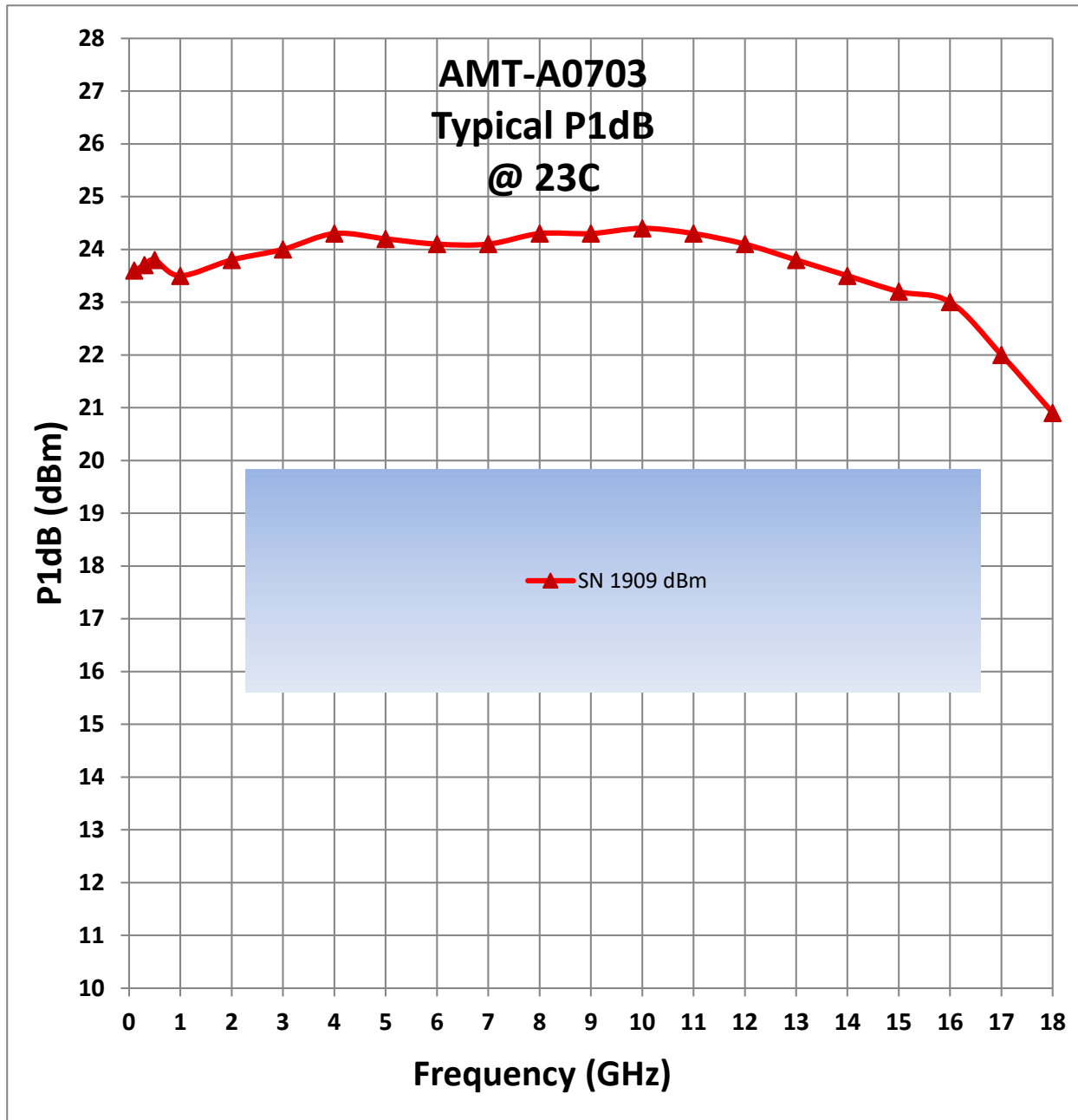
CH4 Markers  
1: -24.657 dB  
300.000 MHz  
2: -27.526 dB  
6.00000 GHz  
3: -16.331 dB  
10.0000 GHz  
4: -19.077 dB  
14.0000 GHz

H1d  
START 100.000 MHz STOP 20000.000 MHz

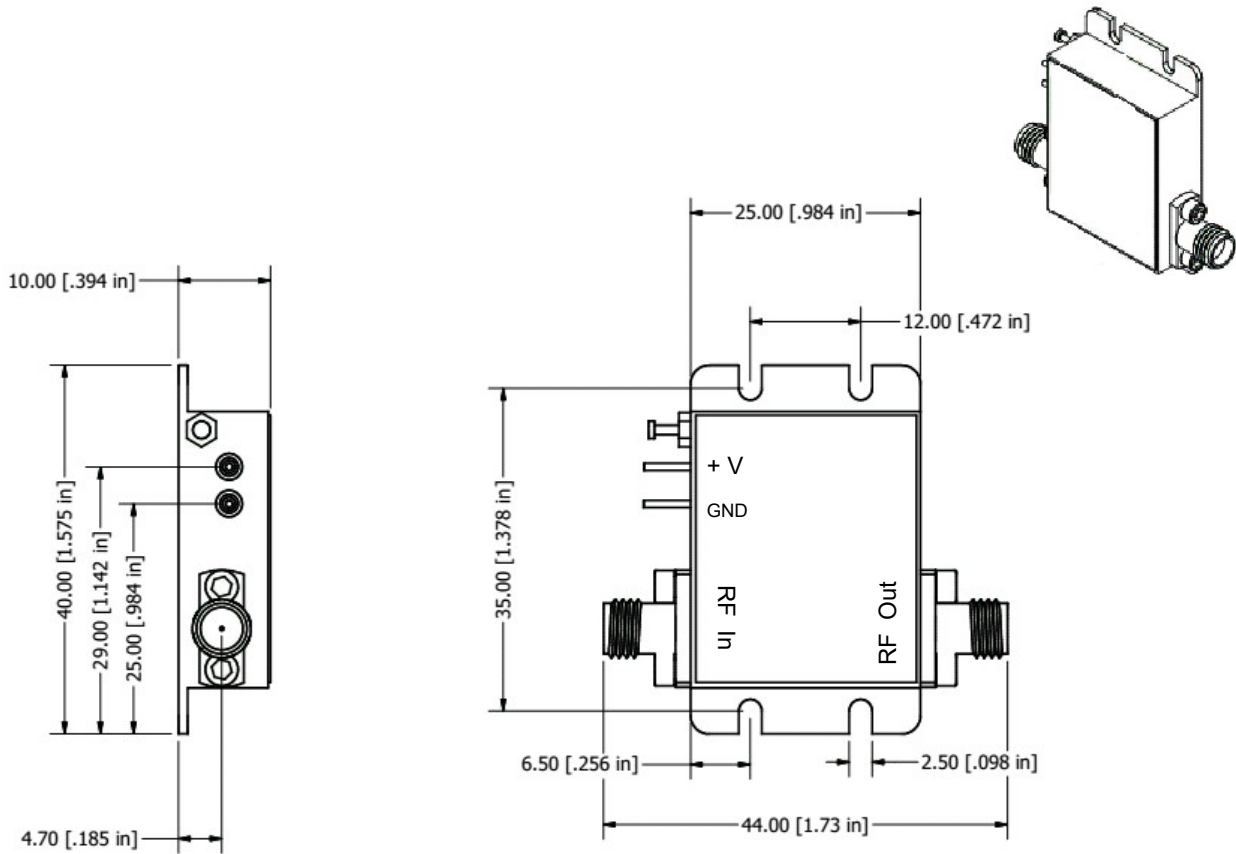
Typical Noise Figure @ 23°C (SN 1909)



Typical P1dB @ 23°C (SN 1909)



**Package Outline M020: SMA Connectorized mm(inches)**



**Field replaceable SMA Connectors, Removable Ground slug**

**Note: The unit must be attached to proper heat sink**

**Housing Material: Aluminum 6061-T6, Gold over Electroless Nickel**

<b>Model Number</b>	<b>Description</b>	<b>Hermeticity</b>	<b>Package</b>
AMT-A0703	SMA Female	Non-Hermetic	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
- 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.

Note: Available options are model dependent, please contact us

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