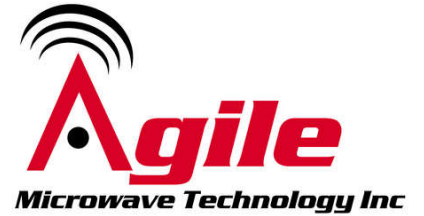


# AMT-A0391 2 GHz to 8 GHz Low Noise Amplifier

## Data Sheet



## Features

- 2 GHz to 8 GHz Frequency Range
- Typical Gain 33 dB,
- Gain Flatness  $< \pm 0.7$  dB Typical
- Typical Noise Figure  $< 1.4$  dB
- Typical P1dB  $> +12$  dBm
- Internally Regulated
- Operates from a Single +8V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



## Description

The AMT-A0391 is a Broadband Low Noise amplifier with Low noise 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-A0391 is ideal for use as gain block of receiver system, or where broadband amplification is required without adding lot of noise in a Hi-Rel communications system for Commercial or Military applications

## Applications

- Receiver Input
- Radar
- Communication systems
- Microwave Radio systems
- Test Equipment

## MAXIMUM RATINGS<sup>1</sup>

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T <sub>MO</sub>	° C	-40	+85
Storage Temperature - Case	T <sub>MS</sub>	° C	-40	+125
RF Input power (CW)	P <sub>in</sub>	dBm		+16
Die T <sub>Junction</sub>	T <sub>J</sub>	° C		+150
Positive Supply Voltage	V <sub>+SS</sub>	V		+12

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	2		8
Gain	Small Signal	dB	30	33	
Gain Flatness <sup>2</sup>		dB		±0.7	±1.5
Output Power (P1dB)	1 dB compression point @4 GHz	dBm	+12	+14	
OIP3	OIP3 measured@4 GHz Two tone F1-F2= 10MHz	dB		22	
Noise Figure <sup>2</sup>		dB		1.1	2
RF Input Impedance <sup>2</sup>	Reference to 50 ohms VSWR			1.8:1	2.4:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2:1
Supply Voltage Positive:		V		+8	
Supply Current Positive:	Small signal current	mA		175	200

Notes:

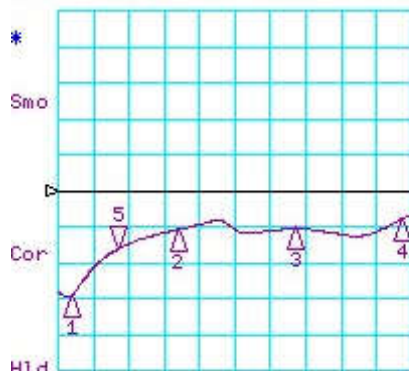
1/ Unconditional Stability:

2/ Maybe little higher above 7.5 GHz

Customized configurations of the above specifications are available

# Typical S-Parameters 25C

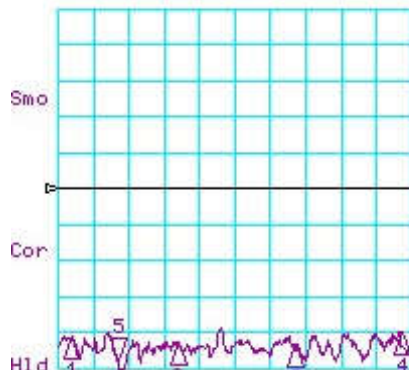
CH1 LOG 10 dB/ REF 0 dB  
S11 5: -16.304 dB 2.999 400 000 GHz



CH1 Markers  
1: -29.209 dB  
2.20000 GHz  
2: -10.859 dB  
4.00000 GHz  
3: -10.556 dB  
6.00000 GHz  
4: -7.9990 dB  
7.80000 GHz

H1d  
START 2000.000 MHz STOP 8000.000 MHz

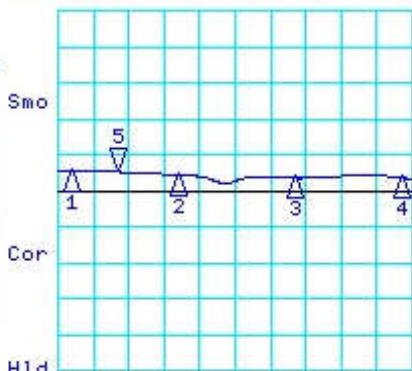
CH3 LOG 10 dB/ REF -20 dB  
S12 5: -68.018 dB 2.999 400 000 GHz



CH3 Markers  
1: -61.598 dB  
2.20000 GHz  
2: -63.091 dB  
4.00000 GHz  
3: -63.986 dB  
6.00000 GHz  
4: -60.525 dB  
7.80000 GHz

H1d  
START 2000.000 MHz STOP 8000.000 MHz

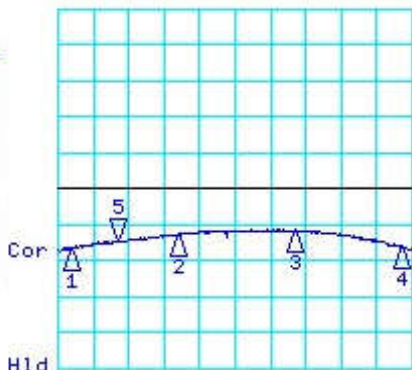
CH2 LOG 10 dB/ REF 30 dB  
S21 5: 35.242 dB 2.999 400 000 GHz



CH2 Markers  
1: 35.473 dB  
2.20000 GHz  
2: 34.521 dB  
4.00000 GHz  
3: 33.611 dB  
6.00000 GHz  
4: 33.799 dB  
7.80000 GHz

H1d  
START 2000.000 MHz STOP 8000.000 MHz

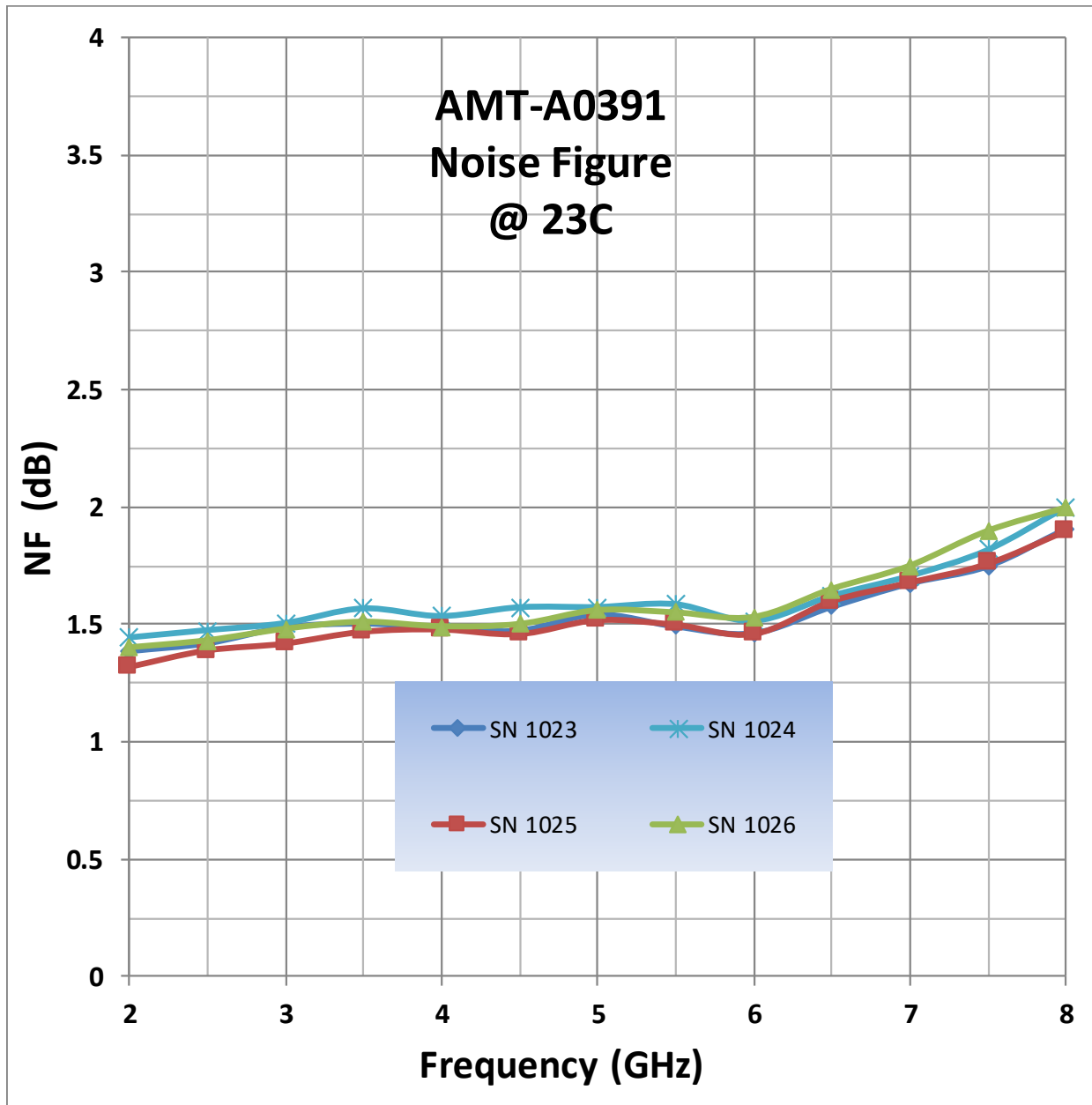
CH4 LOG 10 dB/ REF 0 dB  
S22 5: -14.786 dB 2.999 400 000 GHz



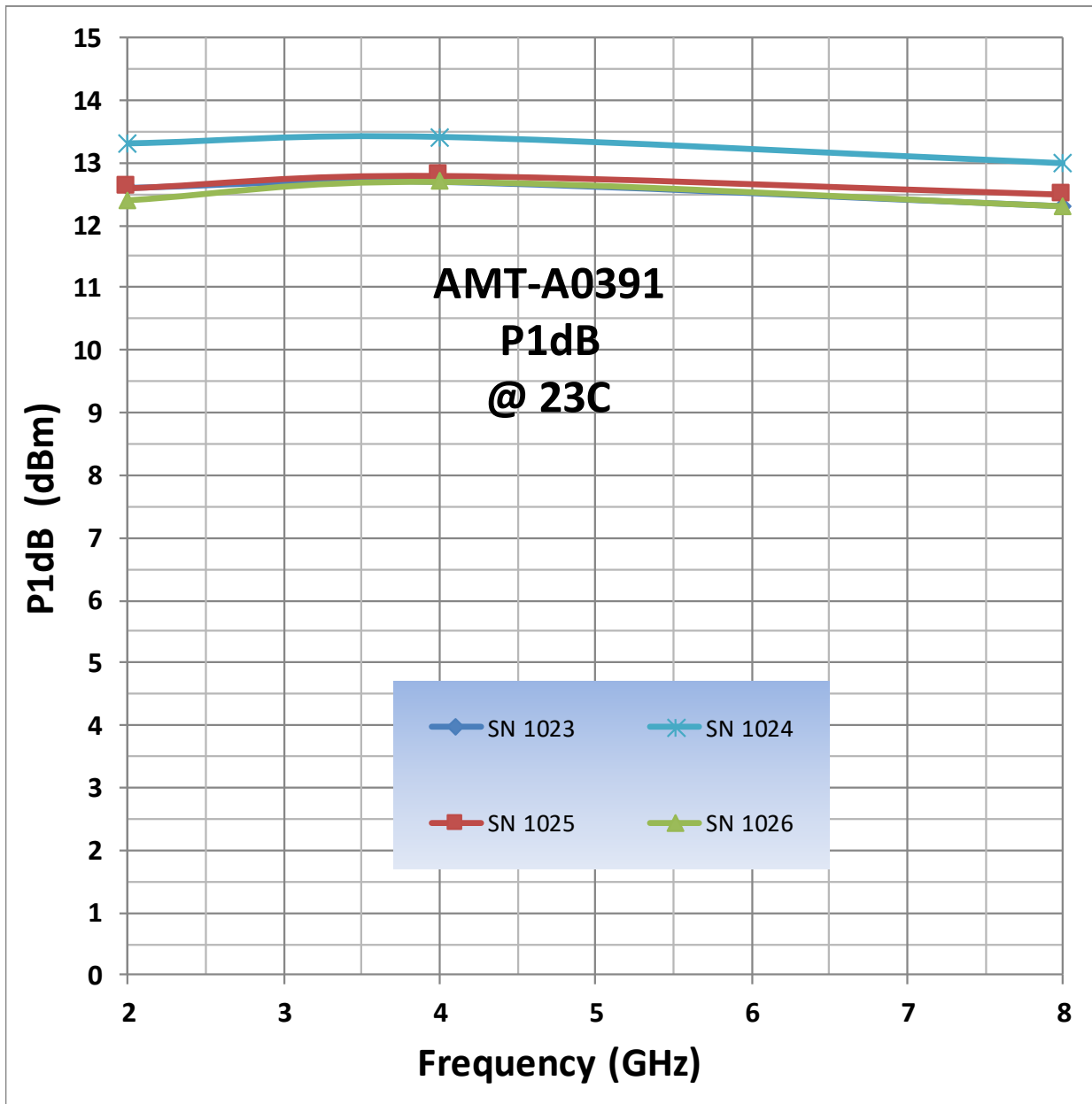
CH4 Markers  
1: -16.675 dB  
2.20000 GHz  
2: -12.746 dB  
4.00000 GHz  
3: -11.599 dB  
6.00000 GHz  
4: -16.226 dB  
7.80000 GHz

H1d  
START 2000.000 MHz STOP 8000.000 MHz

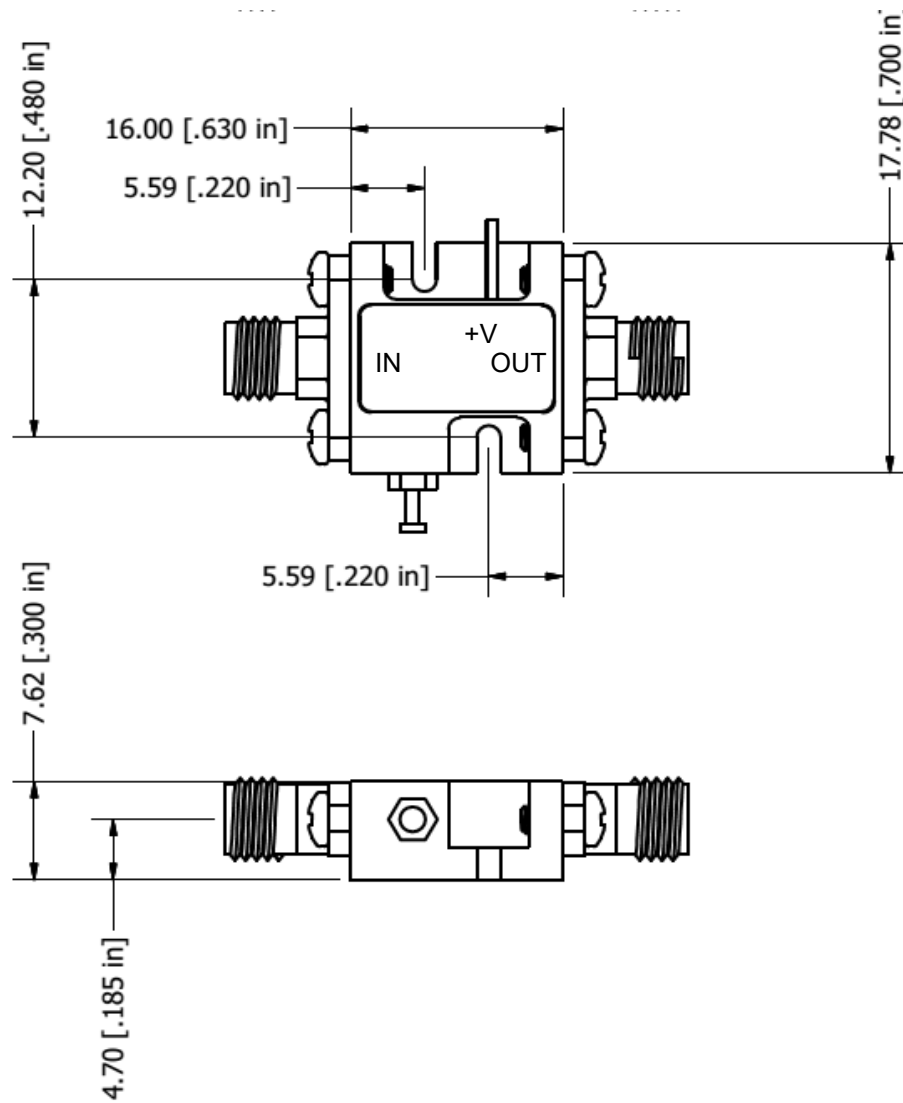
# Typical Noise Figure @ 23C



# Typical P1dB @ 23C



## Package Outline: M088 SMA Connectorized (inches)



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

Model Number	Description	Hermeticity	Package
AMT-A0391	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.

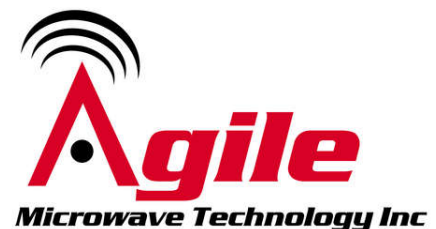
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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

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