

AMT-A0423 11 GHz to 12 GHz Medium Power Amplifier with flat gain

Data Sheet



Features

- 11 GHz to 12 GHz Frequency Range
- Typical Gain 19 dB
- Gain Flatness $< \pm 0.5$ dB
- P1dB +20 dBm Typical
- Typical Noise Figure 4.5 dB, 5 dB max
- Internally Regulated
- Operates from a Single +12V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0423 is a medium power amplifier with Low Noise and flat gain 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-A0423 is ideal for use in receiver system, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications.

Applications

- Receiver
- 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		+15

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	11		12
Gain	Small Signal	dB	18	19	
Gain Flatness		dB		±0.4	±0.8
Input Power	CW, without damage	dBm	10		
Output Power (P1dB)	1 dB compression point	dBm	19.5	20	
OIP3	OIP3 measured @ 15 GHz Two tone F1-F2=10MHz	dB		30	
Noise Figure		dB		4.5	5
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.0:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2.0:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		100	160

Notes:

1/ Unconditional Stability

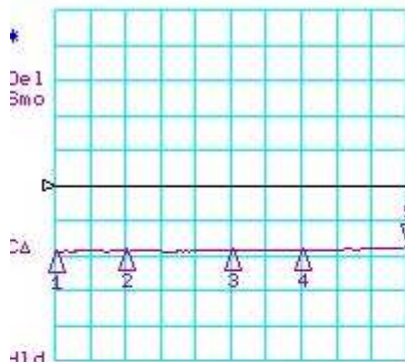
2/ Noise Figure measurement uncertainty of 0.1 dB per Agilent/HP

Customized configurations of the above specifications are available

Typical Performance

S-Parameters @ 23C

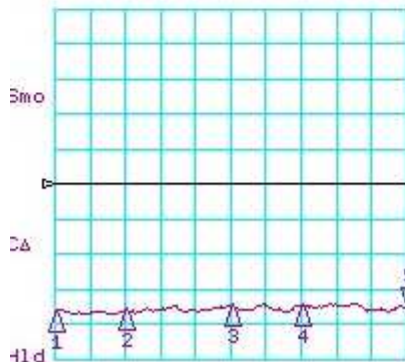
CH1 LOG 10 dB/ REF 0 dB
S11 5:-17.614 dB 12.000 000 000 GHz



CH1 Markers
1:-19.126 dB
11.0000 GHz
2:-18.774 dB
11.2000 GHz
3:-18.516 dB
11.5000 GHz
4:-18.519 dB
11.7000 GHz
5:-17.614 dB
12.0000 GHz

START11000.000 MHz STOP12000.000 MHz

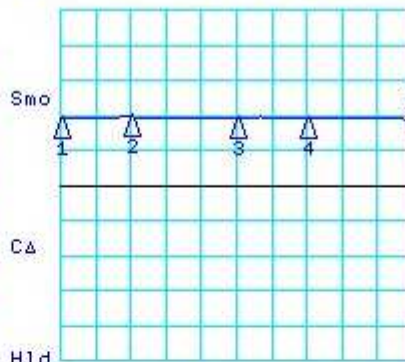
CH3 LOG 10 dB/ REF 0 dB
S12 5:-35.729 dB 12.000 000 000 GHz



CH3 Markers
1:-36.429 dB
11.0000 GHz
2:-35.792 dB
11.2000 GHz
3:-34.741 dB
11.5000 GHz
4:-34.465 dB
11.7000 GHz
5:-35.729 dB
12.0000 GHz

START11000.000 MHz STOP12000.000 MHz

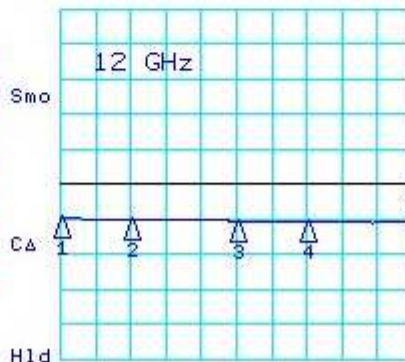
CH2 LOG 10 dB/ REF 0 dB
S21 5:18.792 dB 12.000 000 000 GHz



CH2 Markers
1:19.530 dB
11.0000 GHz
2:19.710 dB
11.2000 GHz
3:19.284 dB
11.5000 GHz
4:19.335 dB
11.7000 GHz
5:18.792 dB
12.0000 GHz

START11000.000 MHz STOP12000.000 MHz

CH4 LOG 10 dB/ REF 0 dB
S22 5:-11.066 dB 12.000 000 000 GHz

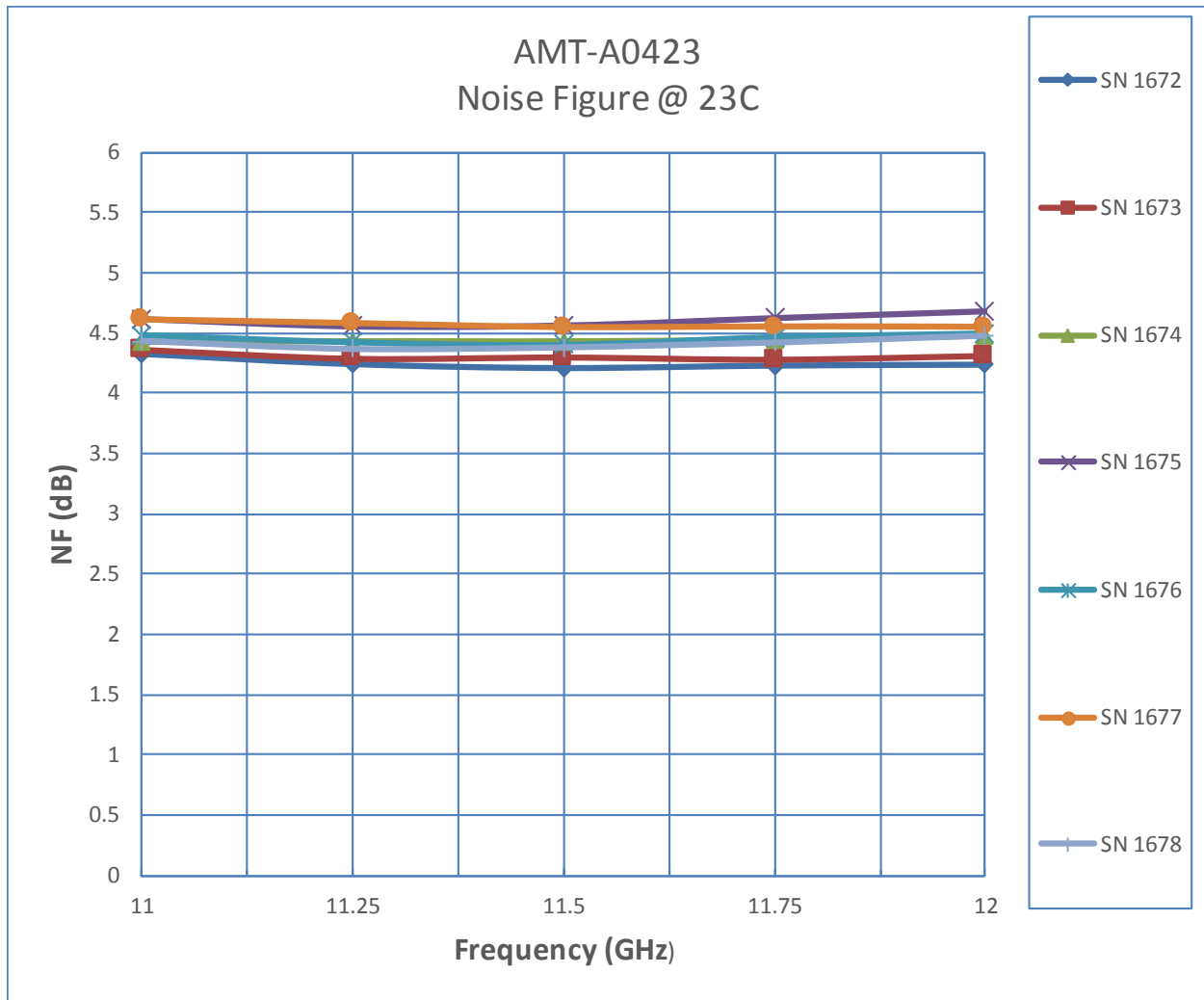


CH4 Markers
1:-9.6470 dB
11.0000 GHz
2:-9.9780 dB
11.2000 GHz
3:-10.545 dB
11.5000 GHz
4:-10.733 dB
11.7000 GHz
5:-11.066 dB
12.0000 GHz

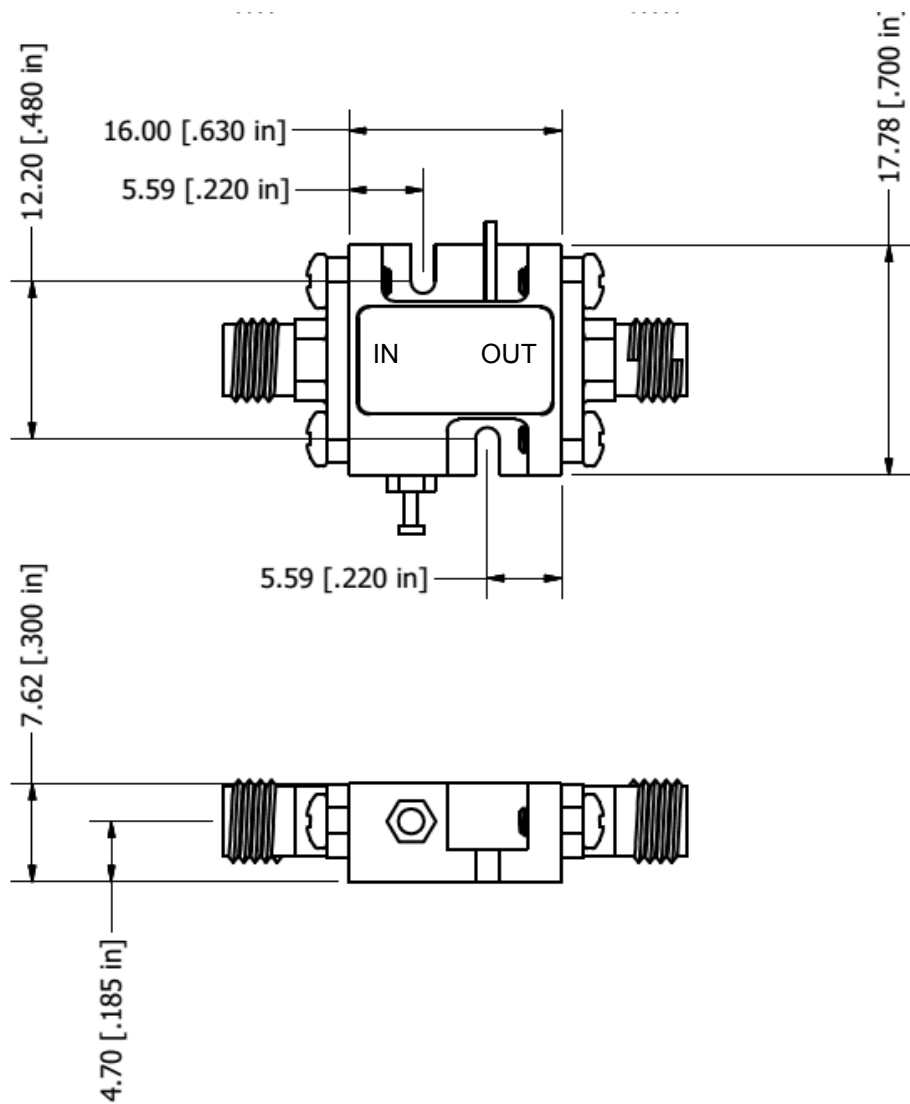
START11000.000 MHz STOP12000.000 MHz

Typical Performance

Noise Figure @ 23C



Package Outline: M088 SMA Connectorized (inches)



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

Model Number	Description	Hermeticity	Package
AMT-A0423	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.

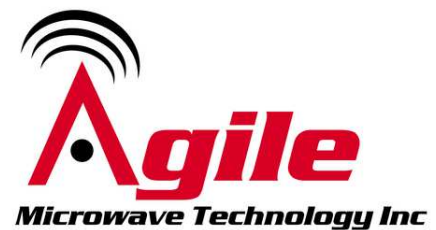
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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