

AMT-A0417 12.7GHz to 13.5 GHz Low Noise Amplifier with Medium Power

Data Sheet



Features

- 12.7 GHz to 13.5 GHz Frequency Range
- Typical Noise Figure 2 dB
- Typical Gain 20 dB
- Gain Flatness $< \pm 1$ dB max
- P1dB +21 dBm Typical
- Internally Regulated
- Operates from a Single +12V Supply
- Unconditionally Stable



Description

The AMT-A0417 is a Low Noise amplifier with medium power 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-A0417 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 RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T_{MO}	$^{\circ}C$	-20	+85
Storage Temperature - Case	T_{MS}	$^{\circ}C$	-55	+125
RF Input power (CW)	P_{in}	dBm		+10
Die $T_{Junction}$	T_J	$^{\circ}C$		+150
Positive Supply Voltage	V_{+SS}	V		+13

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	12.7		13.5
Gain	Small Signal	dB	19	20	21
Gain Flatness		dB		±0.5	± 1
Input Power	CW, without damage	dBm	10		
Output Power (P1dB)	1 dB compression point @ 13GHz	dBm	+20	+21	
OIP3	OIP3 measured @ 13 GHz Two tone F1-F2=10MHz	dB	+28		
Noise Figure		dB		2	2.5
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2.2:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		80	150

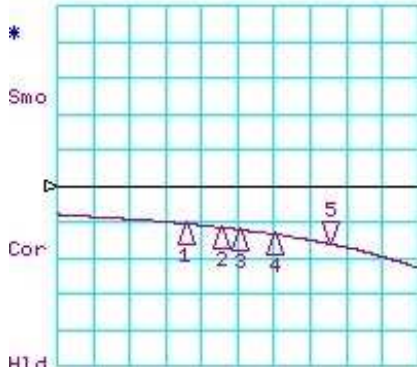
Notes:

1/ Unconditional Stability

Customized configurations of the above specifications are available

Typical S-Parameters @ 25°C

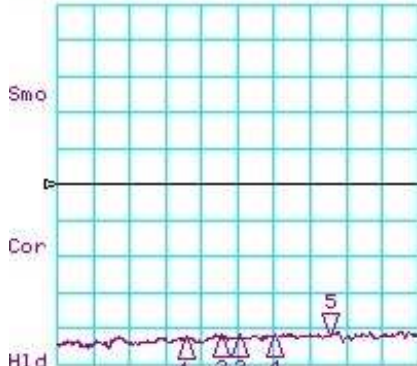
CH1 LOG 10 dB/ REF 0 dB
S11 5: -15.949 dB 13.500 000 000 GHz



CH1 Markers
1: -10.388 dB
12.7000 GHz
2: -11.437 dB
12.9000 GHz
3: -12.030 dB
13.0000 GHz
4: -13.361 dB
13.2000 GHz
5: -15.949 dB
13.5000 GHz

H1d
START12000.000 MHz STOP14000.000 MHz

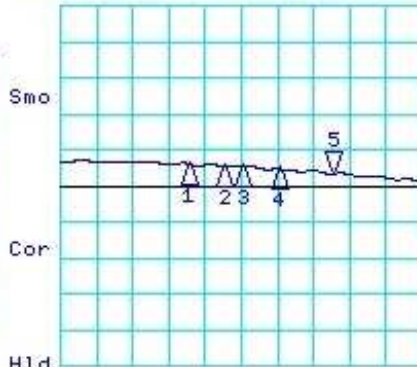
CH3 LOG 10 dB/ REF 0 dB
S12 5: -42.402 dB 13.500 000 000 GHz



CH3 Markers
1: -42.980 dB
12.7000 GHz
2: -42.224 dB
12.9000 GHz
3: -42.064 dB
13.0000 GHz
4: -42.357 dB
13.2000 GHz
5: -42.402 dB
13.5000 GHz

H1d
START12000.000 MHz STOP14000.000 MHz

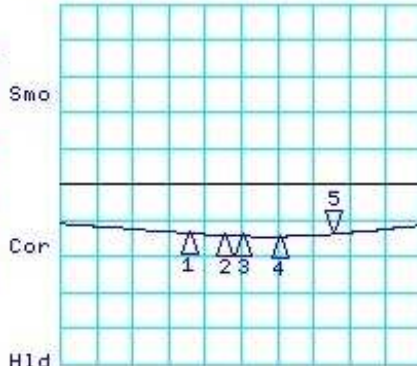
CH2 LOG 3 dB/ REF 19 dB
S21 5: 20.013 dB 13.500 000 000 GHz



CH2 Markers
1: 20.009 dB
12.7000 GHz
2: 20.677 dB
12.9000 GHz
3: 20.614 dB
13.0000 GHz
4: 20.421 dB
13.2000 GHz
5: 20.013 dB
13.5000 GHz

H1d
START12000.000 MHz STOP14000.000 MHz

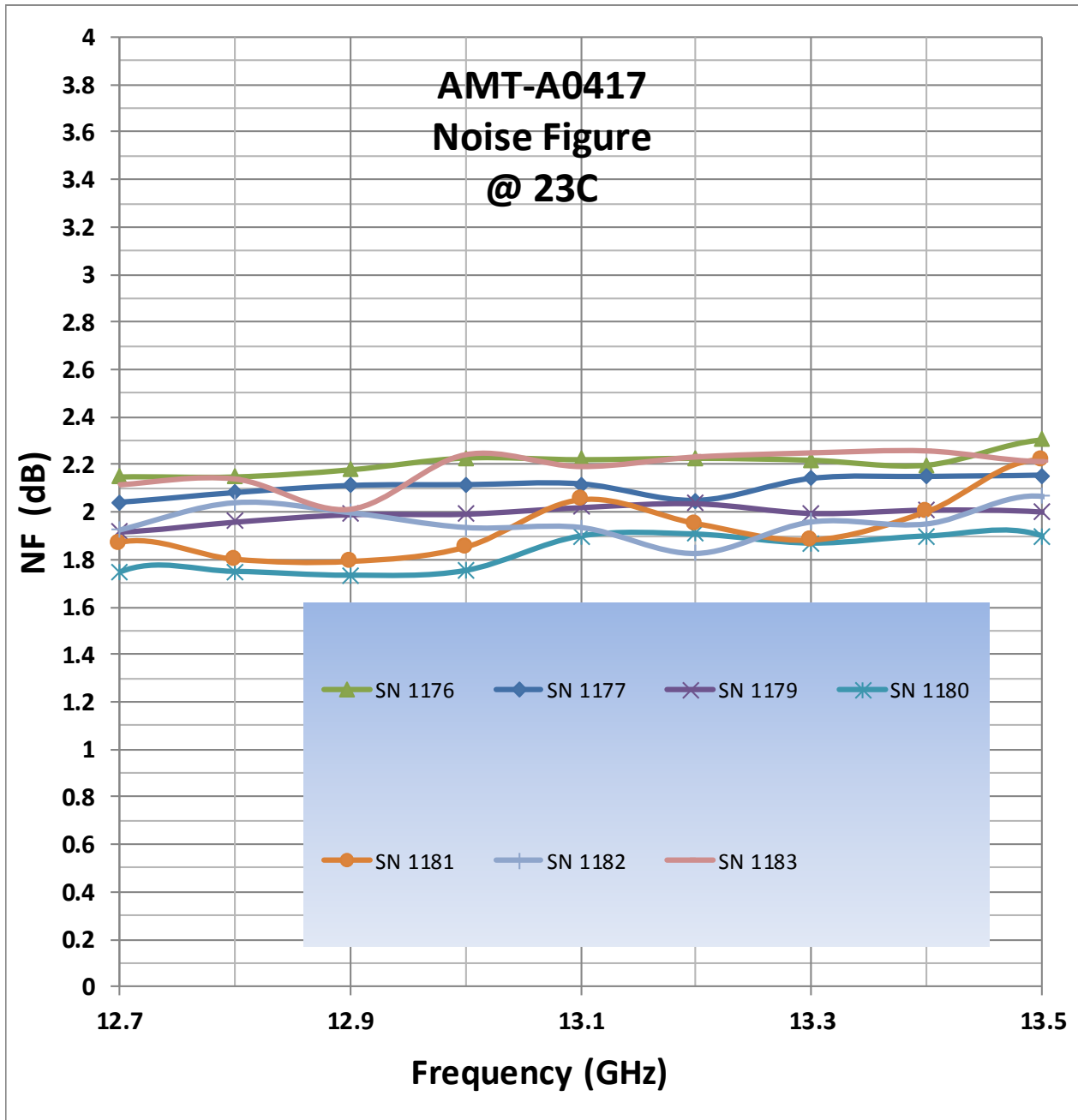
CH4 LOG 10 dB/ REF 0 dB
S22 5: -13.744 dB 13.500 000 000 GHz



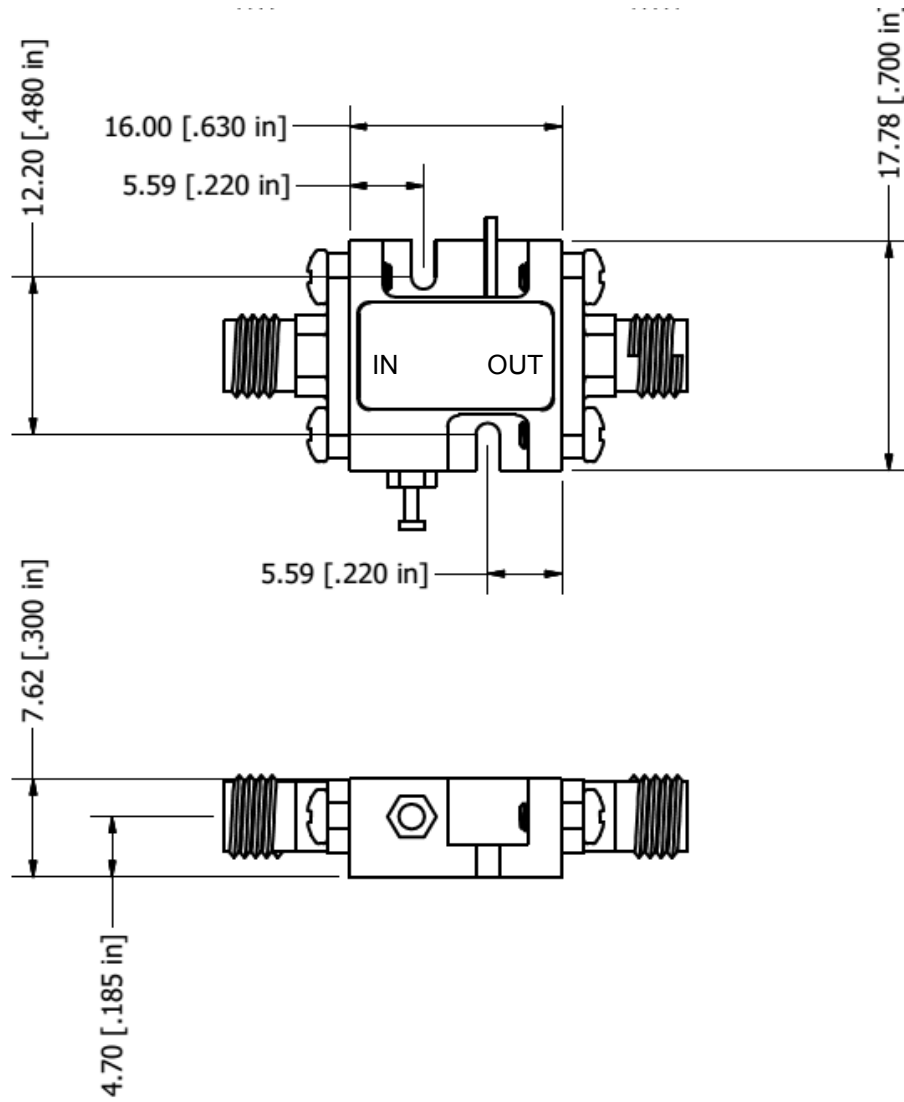
CH4 Markers
1: -13.510 dB
12.7000 GHz
2: -14.103 dB
12.9000 GHz
3: -14.298 dB
13.0000 GHz
4: -14.447 dB
13.2000 GHz
5: -13.744 dB
13.5000 GHz

H1d
START12000.000 MHz STOP14000.000 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-A0417	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.

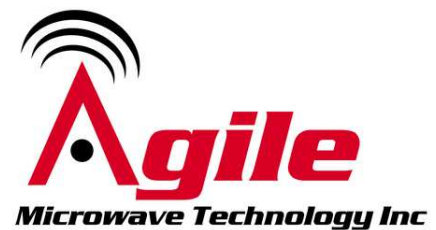
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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



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