

AMT-A0415 13 GHz to 15 GHz Low Noise and Medium Power Amplifier



Data Sheet

Features

- 13 GHz to 15 GHz Frequency Range
- Gain 18 dB Typical , Gain window 16 to 19 dB
- Gain Flatness ± 0.4 dB typ ± 1 dB max
- 2.5 dB Typical Noise Figure
- VSWR 1.8:1 typical
- P1dB +20 dBm minimum
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable
- Compact Housing

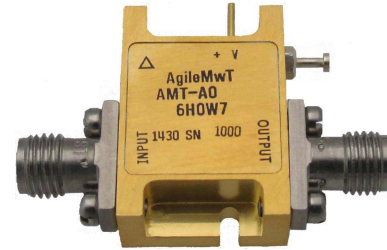


Photo for Illustration only

Description

The AMT-A0415 is a Ultra Broadband amplifier with flat gain, low NF in a compact size. The performance is achieved through the use of AMTI's proprietary matching technology and latest in GaAs technology. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The AMT-A0415 is ideal for use as gain stage with low noise for test equipment, Communication systems or where ultra broadband amplification and power are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

Applications

- Test Equipment
- Receiver
- EW Systems
- Lab Applications
- Wideband Gain Block

MAXIMUM RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T _{MO}	° C	-20	+85
Storage Temperature - Case	T _{MS}	° C	-40	+125
RF Input power (CW)	P _{in}	dBm		+15
Die T _{Junction}	T _J	° C		+150
Positive Supply Voltage	V _{+SS}	V		+13

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.

ELECTRICAL SPECIFICATIONS @ 23°C

Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	13		15
Gain	Small Signal	dB	16	18	19
Gain Flatness		dB		±0.4	±1
Noise Figure		dB		2.5	3.4
Output Power (P1dB)	@ 14 GHz	dBm	+20	+20.5	
OIP3	OPI3 @ 14 GHz Two tone F1-F2= 10MHz	dB	+28	30	
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
RF Output Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
Supply Voltage Positive:		V		+ 12	
Supply Current Positive:	Small signal	mA		180	250

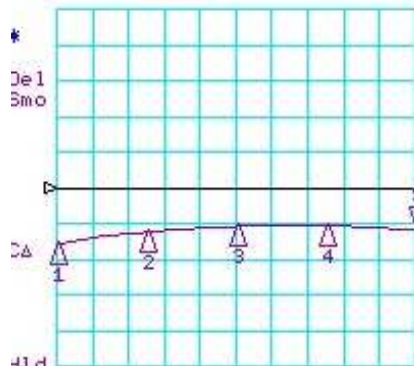
Notes:

1/ Unconditional Stability

Customized configurations of the above specifications are available

Typical S-Parameters @ 25°C

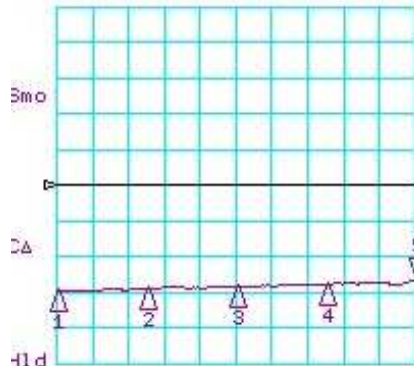
CH1 LOG 10 dB/ REF 0 dB
S11 5: -11.648 dB 15.000 000 000 GHz



CH1 Markers
1: -15.693 dB
13.0000 GHz
2: -12.334 dB
13.5000 GHz
3: -10.776 dB
14.0000 GHz
4: -10.755 dB
14.5000 GHz

START13000.000 MHz STOP15000.000 MHz

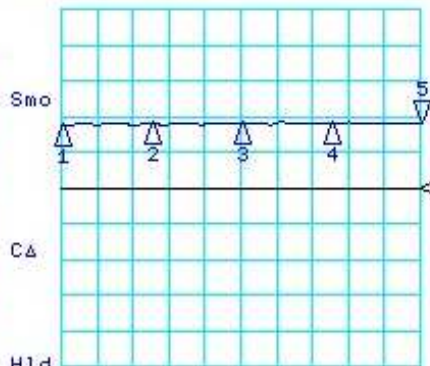
CH3 LOG 10 dB/ REF 0 dB
S12 5: -26.498 dB 15.000 000 000 GHz



CH3 Markers
1: -29.455 dB
13.0000 GHz
2: -29.036 dB
13.5000 GHz
3: -28.362 dB
14.0000 GHz
4: -27.632 dB
14.5000 GHz

START13000.000 MHz STOP15000.000 MHz

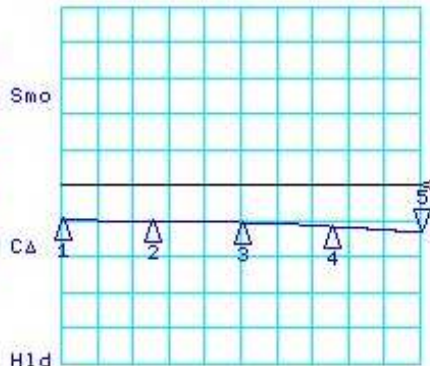
CH2 LOG 10 dB/ REF 0 dB
S21 5: 18.222 dB 15.000 000 000 GHz



CH2 Markers
1: 17.818 dB
13.0000 GHz
2: 18.148 dB
13.5000 GHz
3: 17.995 dB
14.0000 GHz
4: 17.976 dB
14.5000 GHz

START13000.000 MHz STOP15000.000 MHz

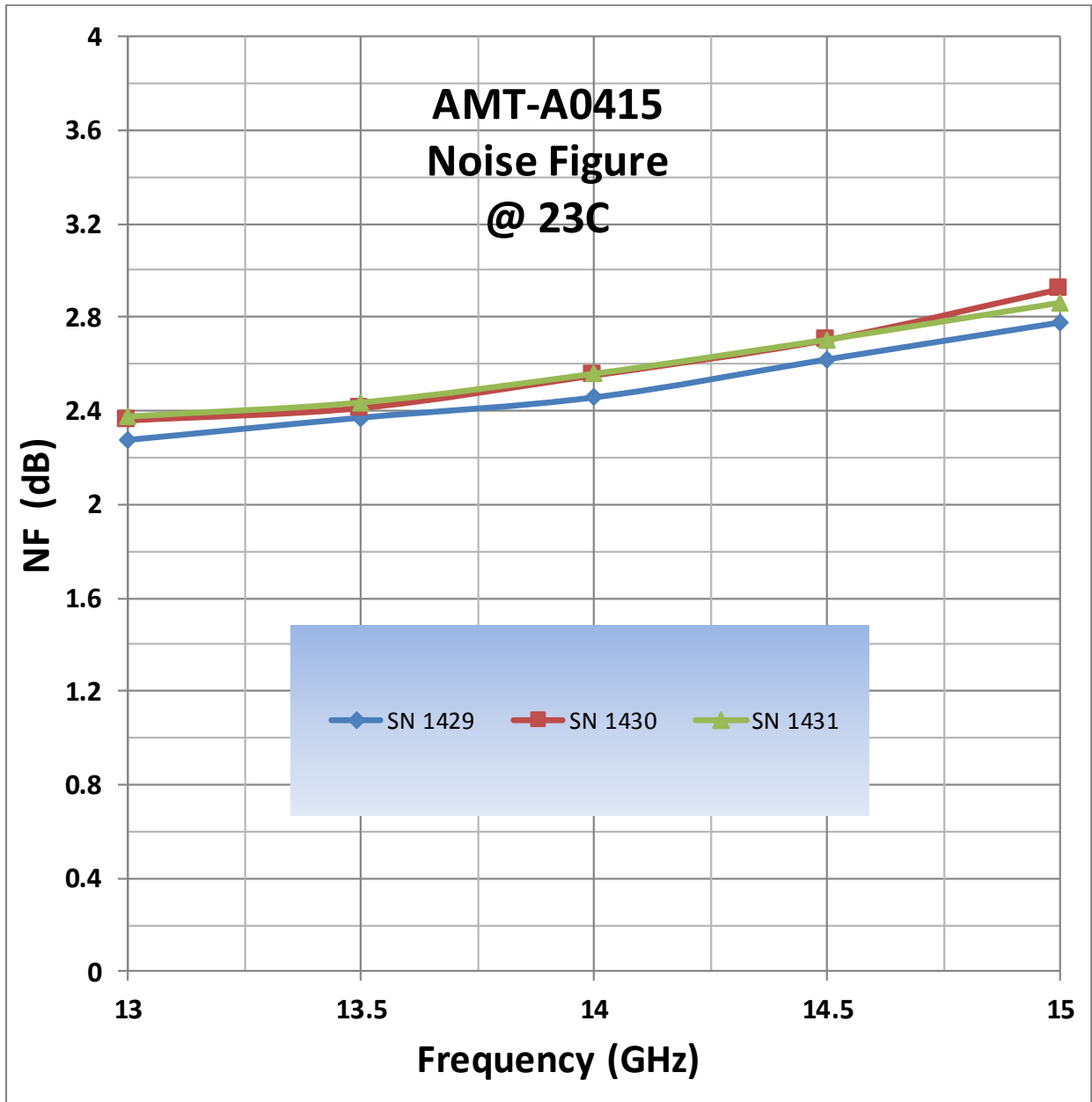
CH4 LOG 10 dB/ REF 0 dB
S22 5: -12.914 dB 15.000 000 000 GHz



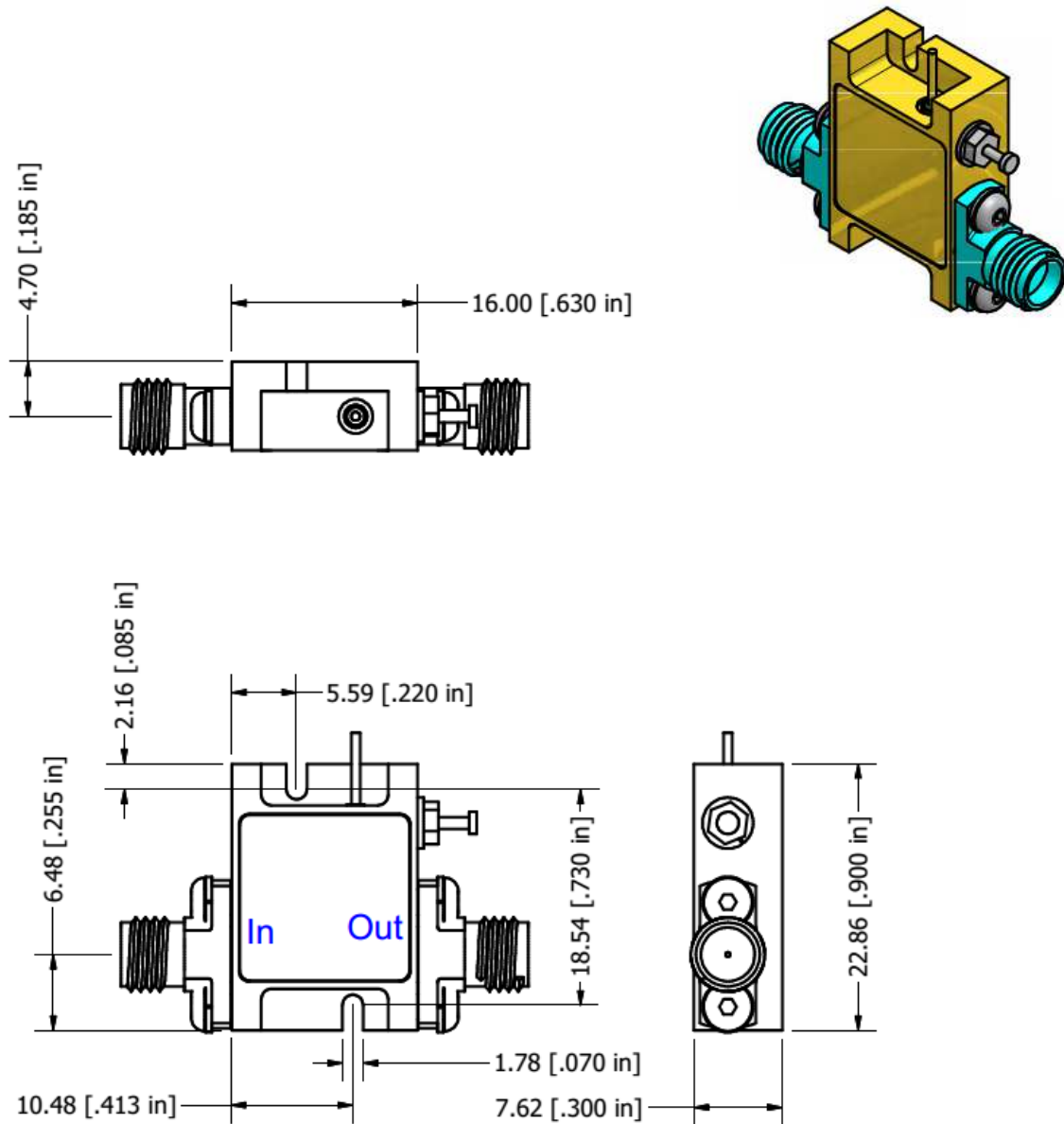
CH4 Markers
1: -9.7200 dB
13.0000 GHz
2: -9.9170 dB
13.5000 GHz
3: -10.413 dB
14.0000 GHz
4: -11.539 dB
14.5000 GHz

START13000.000 MHz STOP15000.000 MHz

Typical Noise Figure @ 23°C



Package Outline M084: SMA Female Connectors (inches)



Field replaceable SMA Connectors

Note: The unit must be attached to proper heat sink

Model Number	Description	Hermeticity	Package
AMT-A0415	SMA Female	Non-Hermetic	Outline: M084

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

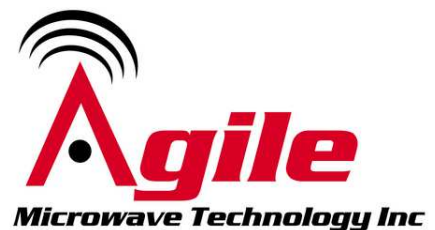
Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

Contact Information:

**ISO 9001:2015
CERTIFIED**

**701 Cascade Pointe Lane
Cary, NC 27513
Phone: (984) 228-8001**

info@agilemwt.com



www.agilemwt.com

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