

AMT-A0416 33.5 GHz to 35.5 GHz Matched Low Noise Amplifier



Data Sheet

Features

- 33.5 GHz to 35.5 GHz Frequency Range
- Gain 27 dB Typical , Gain window 23 to 29 dB
- Gain Flatness ± 1 dB typ ± 2 dB max
- 2.9 dB Typical Noise Figure
- VSWR 1.8:1 typical
- OIP3 +20 dBm minimum
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable
- Compact Housing



Photo for Illustration only

Description

The AMT-A0416 is a Broadband amplifier with flat gain, low NF in a compact size and gain matched to golden unit. 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-A0416 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
- Lab Applications
- Wideband Gain Block

MAXIMUM RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T_{MO}	$^{\circ}C$	-20	+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.

ELECTRICAL SPECIFICATIONS @ 23°C

Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	33.5		35.5
Gain	Small Signal	dB	24	27	29
Gain Flatness		dB		±1	±2
Gain Matching	From Golden unit in the set Freq Range 34.2-34.6GHz	dB	-1		+1
Noise Figure		dB		2.9	4
Output Power (P1dB)	@ 34.4 GHz	dBm	+12	+15	
OIP3	OIP3 @ 134.4 GHz Two tone F1-F2= 10MHz	dB	+20		
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		100	200

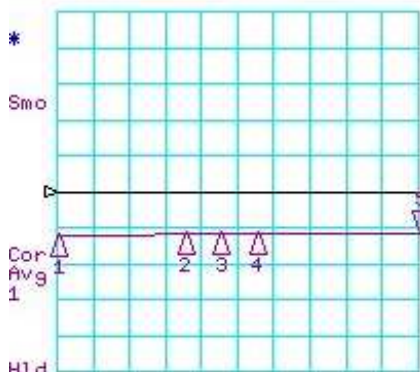
Notes:

1/ Unconditional Stability

Customized configurations of the above specifications are available

Typical S-Parameters @ 25°C

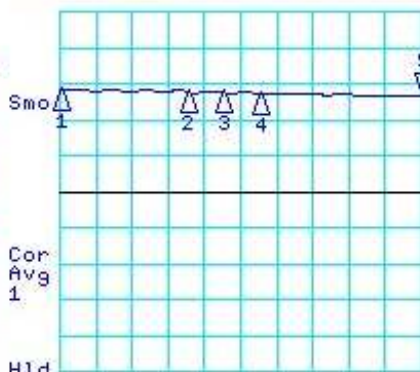
CH1 LOG 10 dB/ REF 0 dB
S11 5: -11.801 dB 35.500 000 000 GHz



CH1 Markers
1: -12.287 dB
33.5000 GHz
2: -11.724 dB
34.2000 GHz
3: -11.691 dB
34.4000 GHz
4: -11.629 dB
34.6000 GHz

H1d
START 33500.000 MHz STOP 35500.000 MHz

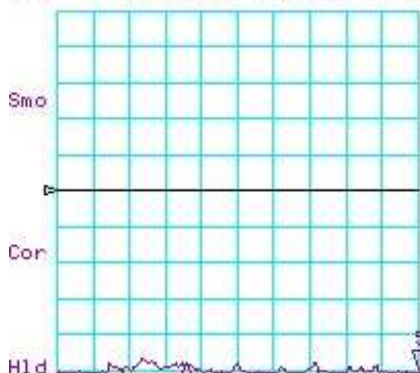
CH2 LOG 10 dB/ REF 0 dB
S21 5: 26.517 dB 35.500 000 000 GHz



CH2 Markers
1: 28.282 dB
33.5000 GHz
2: 27.873 dB
34.2000 GHz
3: 27.722 dB
34.4000 GHz
4: 27.268 dB
34.6000 GHz

H1d
START 33500.000 MHz STOP 35500.000 MHz

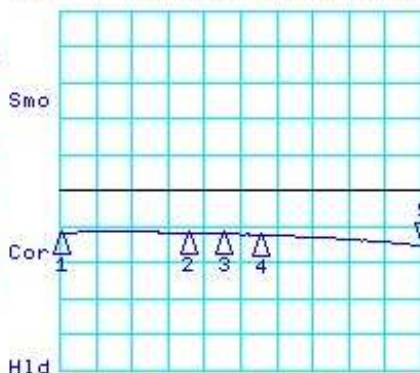
CH3 LOG 10 dB/ REF 0 dB
S12 5: -52.644 dB 35.500 000 000 GHz



CH3 Markers
1: -51.609 dB
33.5000 GHz
2: -48.461 dB
34.2000 GHz
3: -51.869 dB
34.4000 GHz
4: -52.580 dB
34.6000 GHz

H1d
START 33500.000 MHz STOP 35500.000 MHz

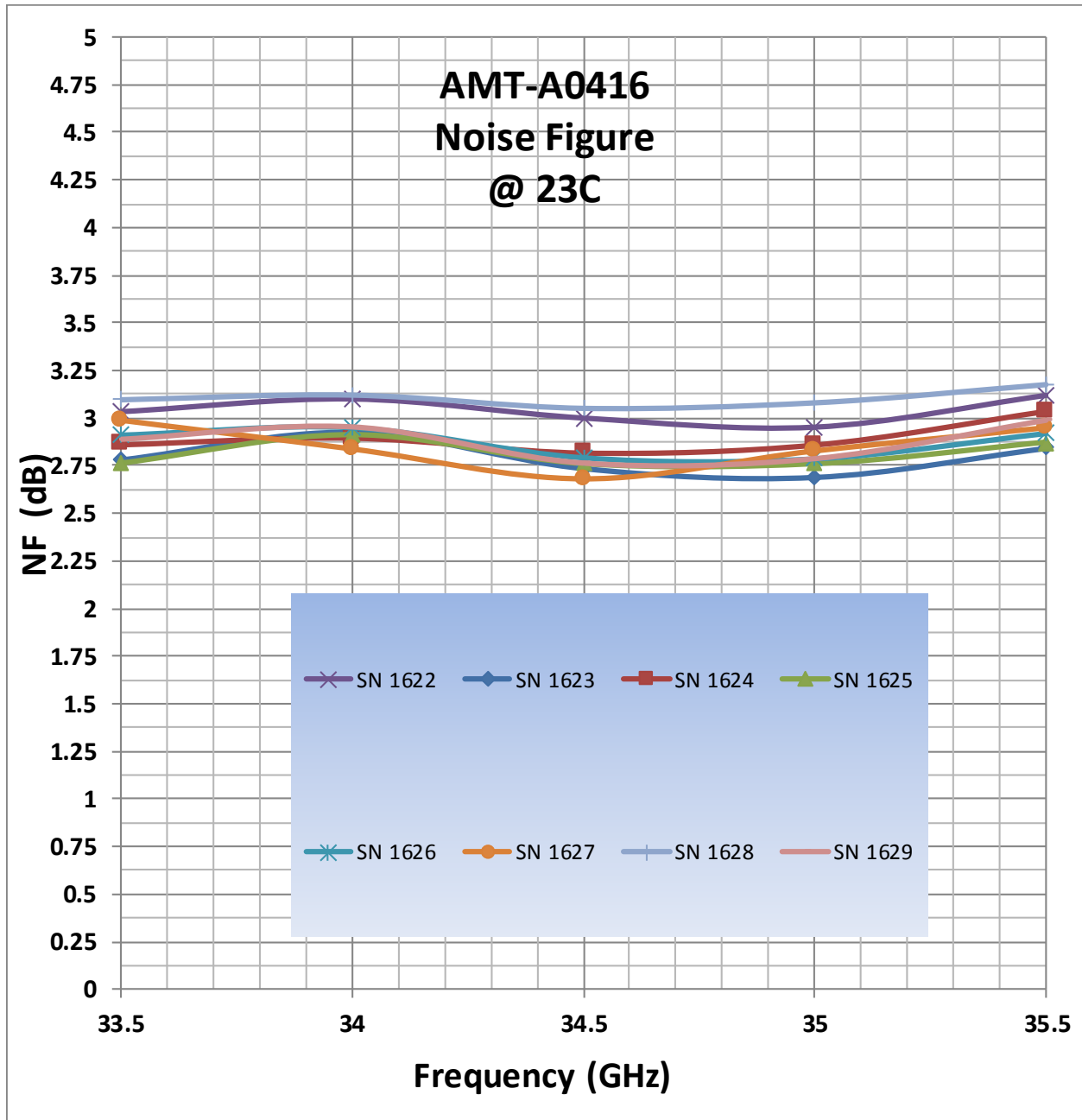
CH4 LOG 10 dB/ REF 0 dB
S22 5: -15.334 dB 35.500 000 000 GHz



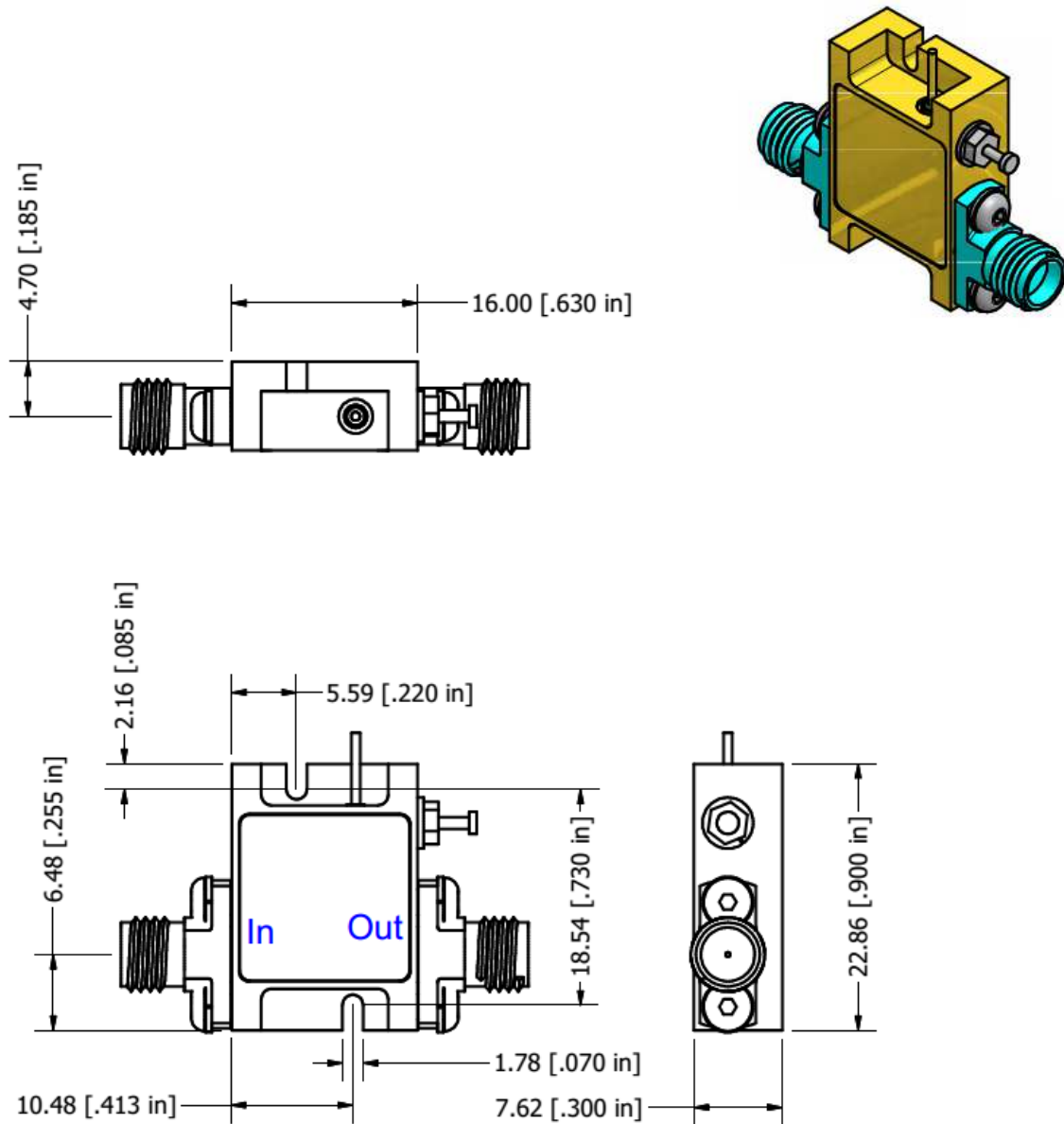
CH4 Markers
1: -11.675 dB
33.5000 GHz
2: -11.820 dB
34.2000 GHz
3: -11.794 dB
34.4000 GHz
4: -12.428 dB
34.6000 GHz

H1d
START 33500.000 MHz STOP 35500.000 MHz

Typical Noise Figure @ 23°C



Package Outline M084: 2.92 mm Female Connectors (inches)



Field replaceable SMA Connectors

Note: The unit must be attached to proper heat sink

Model Number	Description	Hermeticity	Package
AMT-A0416	2.92 mm 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

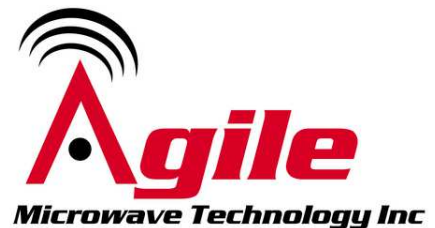
Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

Contact Information:

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