

AMT-A0440 34 GHz to 35 GHz High Frequency Low Noise Amplifier



Data Sheet

Features

- 34 GHz to 35 GHz Frequency Range
- Gain 36dB Typical , Gain window 34 to 38 dB
- Gain Flatness ± 1 dB max
- 2.7 dB Typical Noise Figure
- VSWR 1.8:1 typical
- P1dB + 20 dBm typical
- OIP3 +18 dBm minimum, +22 dBm typical
- Internally Regulated, Compact Housing
- Operates from Single +8V Supply 120 mA typ
- Unconditionally Stable



Photo for Illustration only

Description

The AMT-A0440 is a high frequency low noise amplifier with flat gain, low NF in a compact size and matched gain window. The performance is achieved through the use of AMTI's proprietary matching technology. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The AMT-A0440 is ideal for use as gain stage with low noise for test equipment, Communication systems or where ultra broadband amplification and medium power are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

Applications

- Test Equipment
- Receiver
- Lab Applications
- Gain Block

MAXIMUM RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T_{MO}	$^{\circ}C$	-40	+85
Storage Temperature - Case	T_{MS}	$^{\circ}C$	-40	+100
RF Input power (CW)	P_{in}	dBm		+15
Die $T_{Junction}$	T_J	$^{\circ}C$		+150
Positive Supply Voltage	V_{+SS}	V		+13

Appropriate Heat sink must be used Do Not apply DC to RF ports

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	34		35
Gain	Small Signal	dB	34	36	38
Gain Flatness		dB		±0.5	±1
Noise Figure ²		dB		2.7	3
Output Power (P1dB)	@ 34.5 GHz	dBm	+10	+20	
OIP3	OPI3 @ 34.5 GHz Two tone F1-F2= 10MHz	dB	+18	+22	
Spurs ³	Self generated Spurs with Pout ~ 1 dBm	dBc	<-70		
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2:1
RF Output Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
Supply Voltage Positive:		V		+ 8	
Supply Current Positive:	Small signal	mA		120	200

Notes:

1/ Unconditional Stability

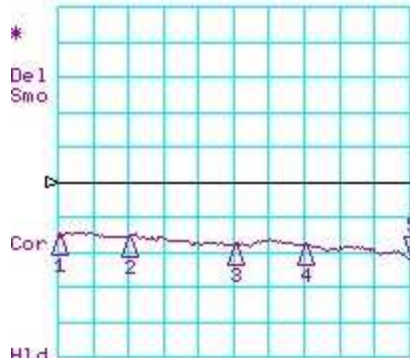
2/ Measured with Agilent/HP equipment standard manufacturer variations apply

3/ Excludes harmonics

Customized configurations of the above specifications are available

Typical S-Parameters @ 23°C

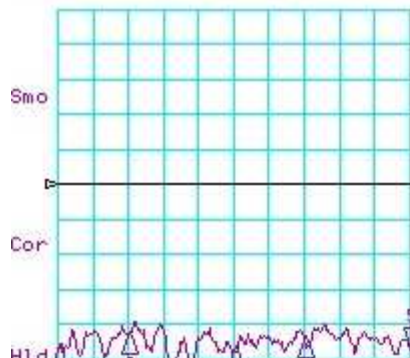
CH1 LOG 10 dB/ REF 0 dB
S11 5: -21.816 dB 35.000 000 000 GHz



CH1 Markers
1: -15.179 dB
34.0000 GHz
2: -15.373 dB
34.2000 GHz
3: -17.681 dB
34.5000 GHz
4: -17.731 dB
34.7000 GHz

START 34000.000 MHz STOP 35000.000 MHz

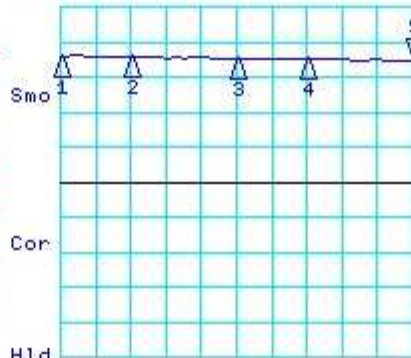
CH3 LOG 10 dB/ REF 0 dB
S12 5: -47.375 dB 35.000 000 000 GHz



CH3 Markers
1: -46.588 dB
34.0000 GHz
2: -42.590 dB
34.2000 GHz
3: -47.010 dB
34.5000 GHz
4: -43.923 dB
34.7000 GHz

START 34000.000 MHz STOP 35000.000 MHz

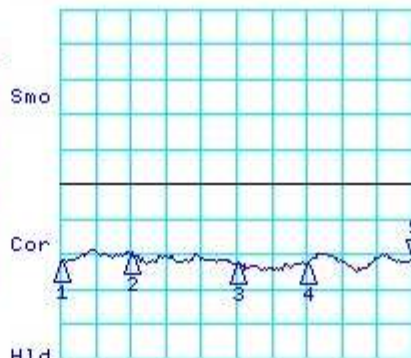
CH2 LOG 10 dB/ REF 0 dB
S21 5: 34.527 dB 35.000 000 000 GHz



CH2 Markers
1: 36.068 dB
34.0000 GHz
2: 35.988 dB
34.2000 GHz
3: 35.362 dB
34.5000 GHz
4: 35.189 dB
34.7000 GHz

START 34000.000 MHz STOP 35000.000 MHz

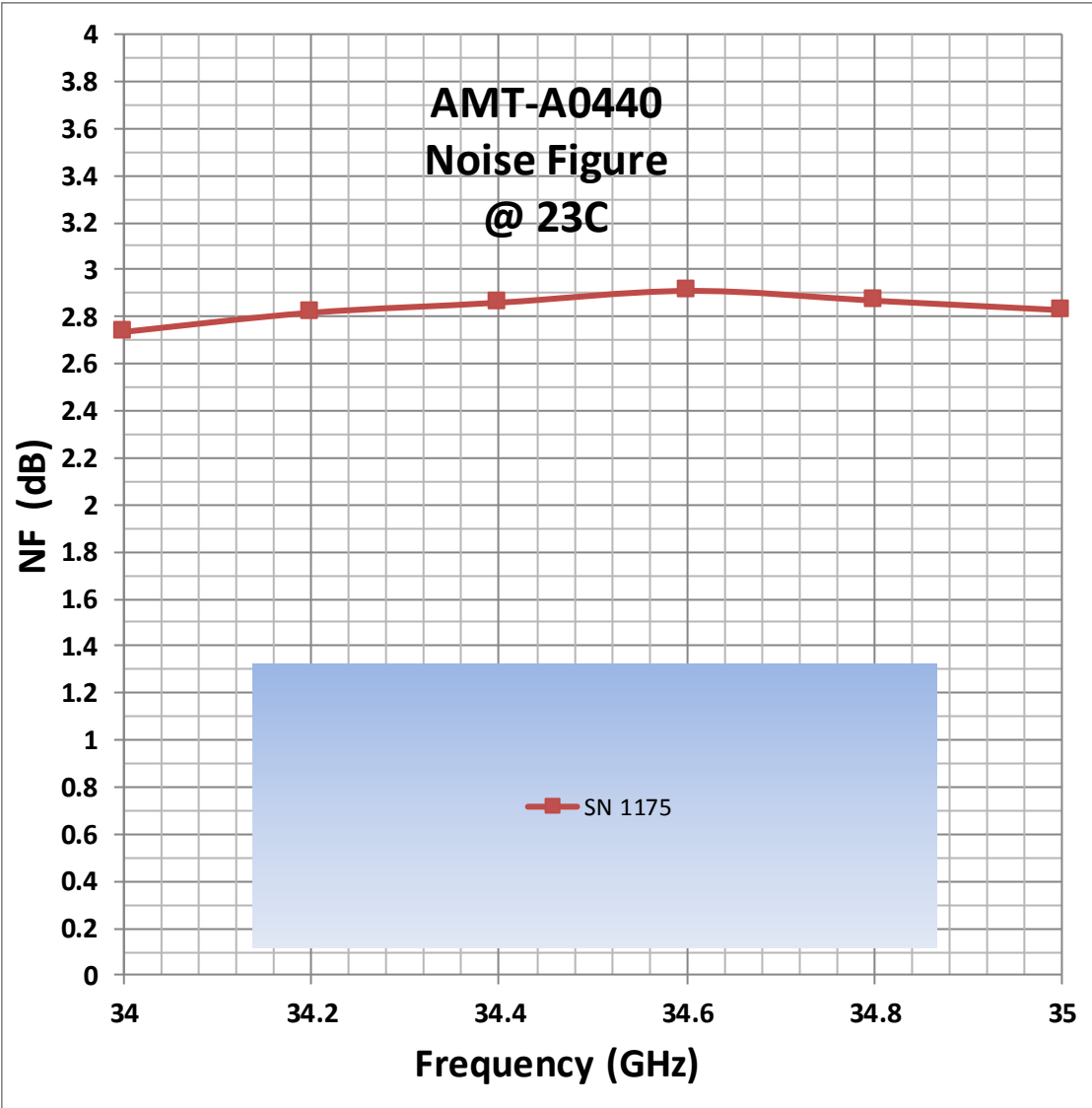
CH4 LOG 10 dB/ REF 0 dB
S22 5: -21.865 dB 35.000 000 000 GHz



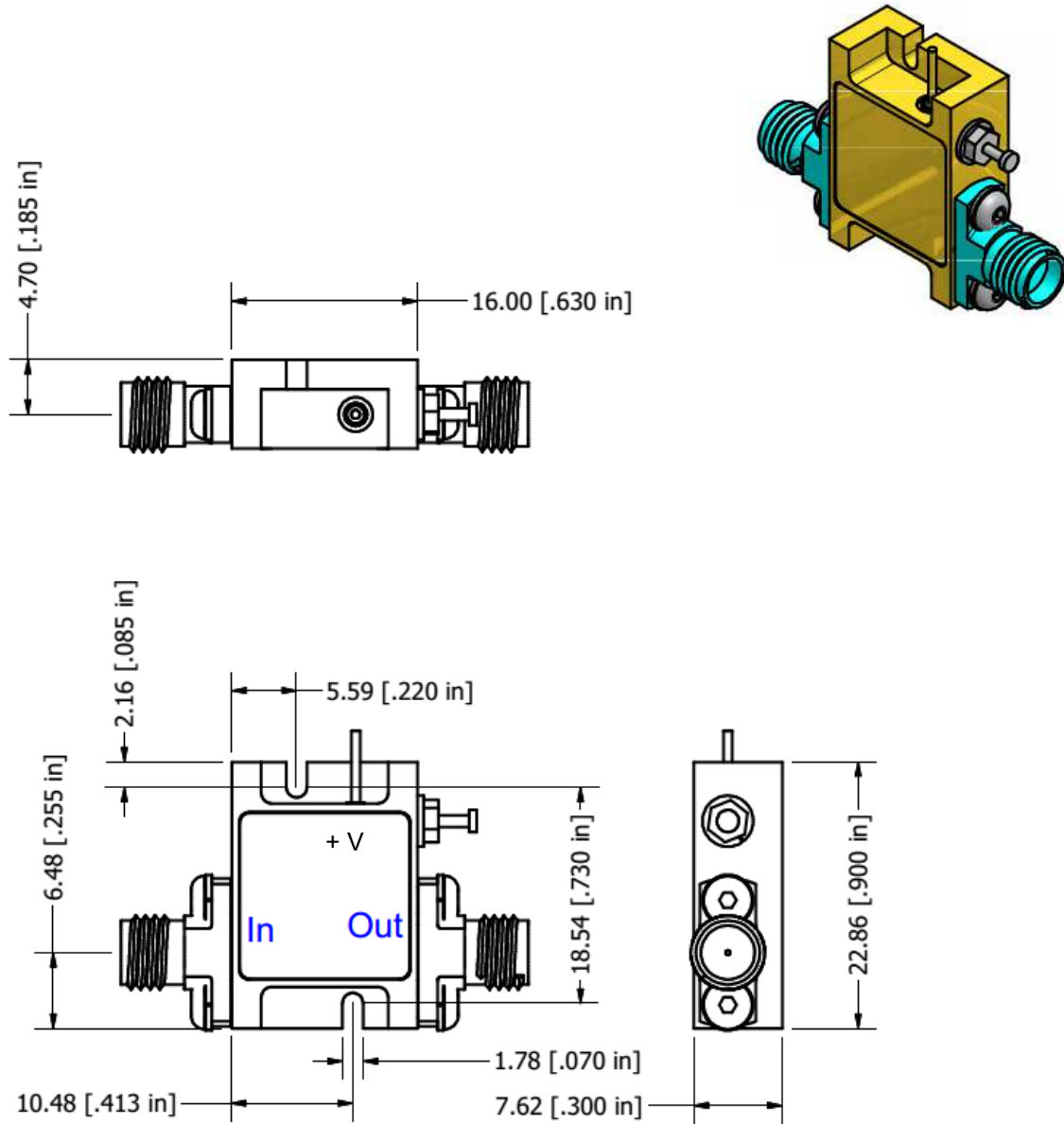
CH4 Markers
1: -22.041 dB
34.0000 GHz
2: -19.824 dB
34.2000 GHz
3: -22.717 dB
34.5000 GHz
4: -22.535 dB
34.7000 GHz

START 34000.000 MHz STOP 35000.000 MHz

Typical Noise Figure @ 23°C



Package Outline M084: 2.92 mm Female Connectors (inches)



Field replaceable 2.92 mm Connectors

Housing material: Aluminum Plating: Gold over Nickel

Note: The unit must be attached to proper heat sink

Model Number	Description	Hermeticity	Package
AMT-A0440	2.92mm 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

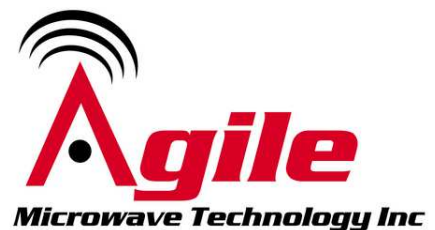
Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

Contact Information:

**ISO 9001:2015
CERTIFIED**

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

info@agilemwt.com



www.agilemwt.com

AMTI reserves the right to change at any time without notice the design, specifications, function/form or availability of its products described herein. The buyer/customer has the responsibility to validate the performance for their applications. No liability is assumed as result of use of this datasheet or product and no patent licenses are implied. AMTI reserves all rights .