

AMT-A0438 6 GHz to 7 GHz Low Noise Amplifier



Data Sheet

Features

- 6 GHz to 7 GHz Frequency Range
- Gain 20 dB Typical , Gain window 18 to 22 dB
- Gain Flatness ± 1 dB max
- 1.6 dB Typical Noise Figure
- VSWR 1.8:1 typical
- OIP3 +20 dBm minimum
- Internally Regulated
- Operates from Single +12V Supply 80 mA typ
- Unconditionally Stable
- Compact Housing



Photo for Illustration only

Description

The AMT-A0438 is a 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-A0438 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	+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	6		7
Gain ²	Small Signal	dB	18	20	22
Gain Flatness		dB		±0.5	±1
Noise Figure		dB		1.6	2.5
Output Power (P1dB)	@ 6.5 GHz	dBm	+12	+16	
OIP3	OIP3 @ 6.5 GHz Two tone F1-F2= 10MHz	dB	+20		
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	2:1
Supply Voltage Positive:		V		+ 12	
Supply Current Positive:	Small signal	mA		80	150

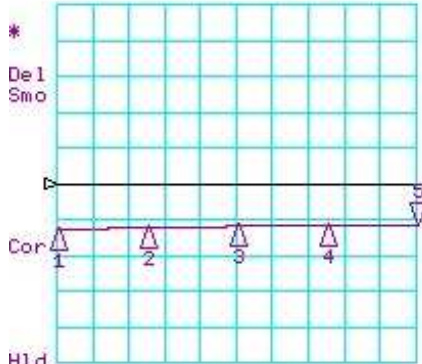
Notes:

- 1/ Unconditional Stability
- 2/ Maybe up to 0.5 dB higher at 7 Ghz
- 3/ Excludes harmonics

Customized configurations of the above specifications are available

Typical Performance S-Parameters @ 25C

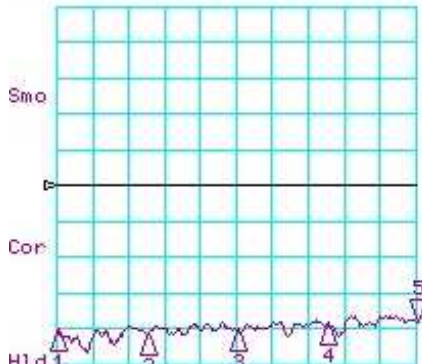
CH1 LOG 10 dB/ REF 0 dB
S11 5: -11.627 dB 7.000 000 000 GHz



CH1 Markers
1: -12.704 dB
6.00000 GHz
2: -12.163 dB
6.25000 GHz
3: -11.817 dB
6.50000 GHz
4: -11.758 dB
6.75000 GHz
5: -11.627 dB
7.00000 GHz

START 6000.000 MHz STOP 7000.000 MHz

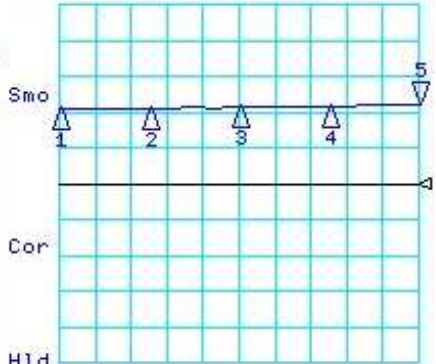
CH3 LOG 10 dB/ REF 0 dB
S12 5: -37.914 dB 7.000 000 000 GHz



CH3 Markers
1: -40.159 dB
6.00000 GHz
2: -41.373 dB
6.25000 GHz
3: -40.649 dB
6.50000 GHz
4: -38.976 dB
6.75000 GHz
5: -37.914 dB
7.00000 GHz

START 6000.000 MHz STOP 7000.000 MHz

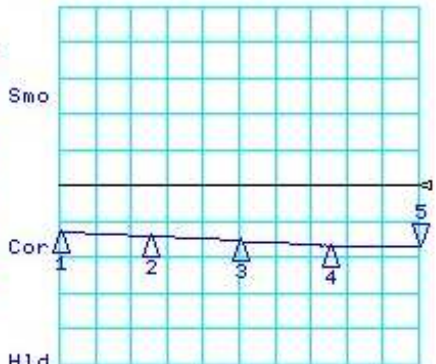
CH2 LOG 10 dB/ REF 0 dB
S21 5: 22.046 dB 7.000 000 000 GHz



CH2 Markers
1: 20.985 dB
6.00000 GHz
2: 21.081 dB
6.25000 GHz
3: 21.397 dB
6.50000 GHz
4: 21.726 dB
6.75000 GHz
5: 22.046 dB
7.00000 GHz

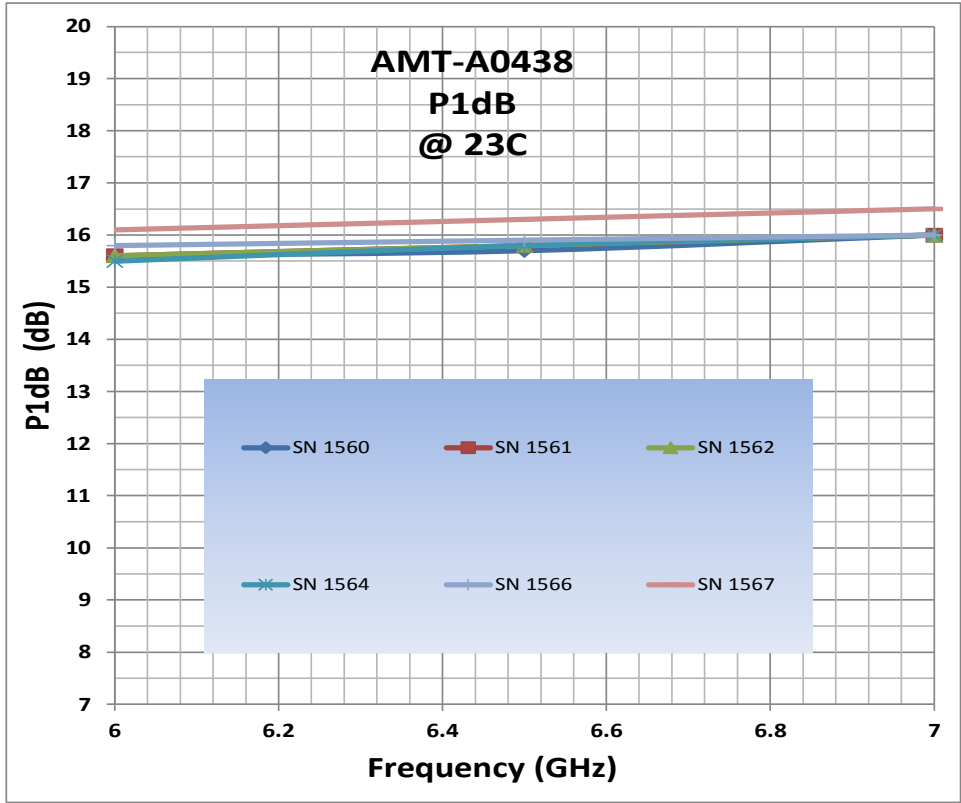
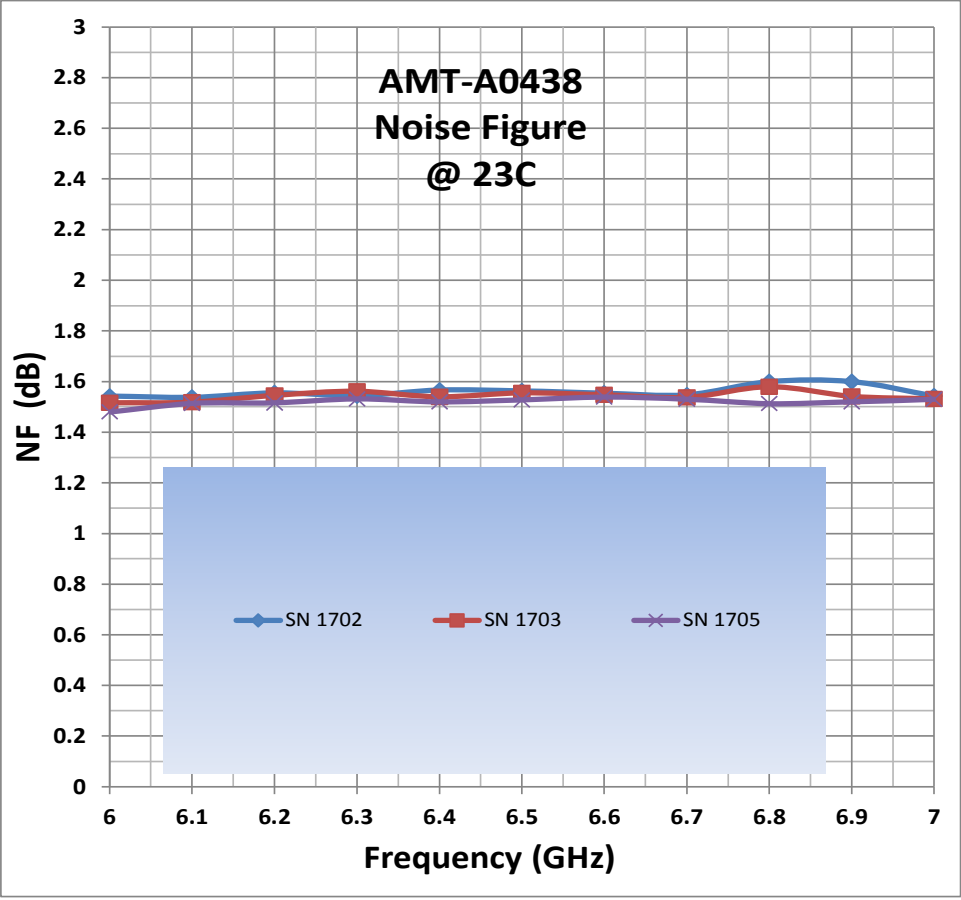
START 6000.000 MHz STOP 7000.000 MHz

CH4 LOG 10 dB/ REF 0 dB
S22 5: -16.917 dB 7.000 000 000 GHz

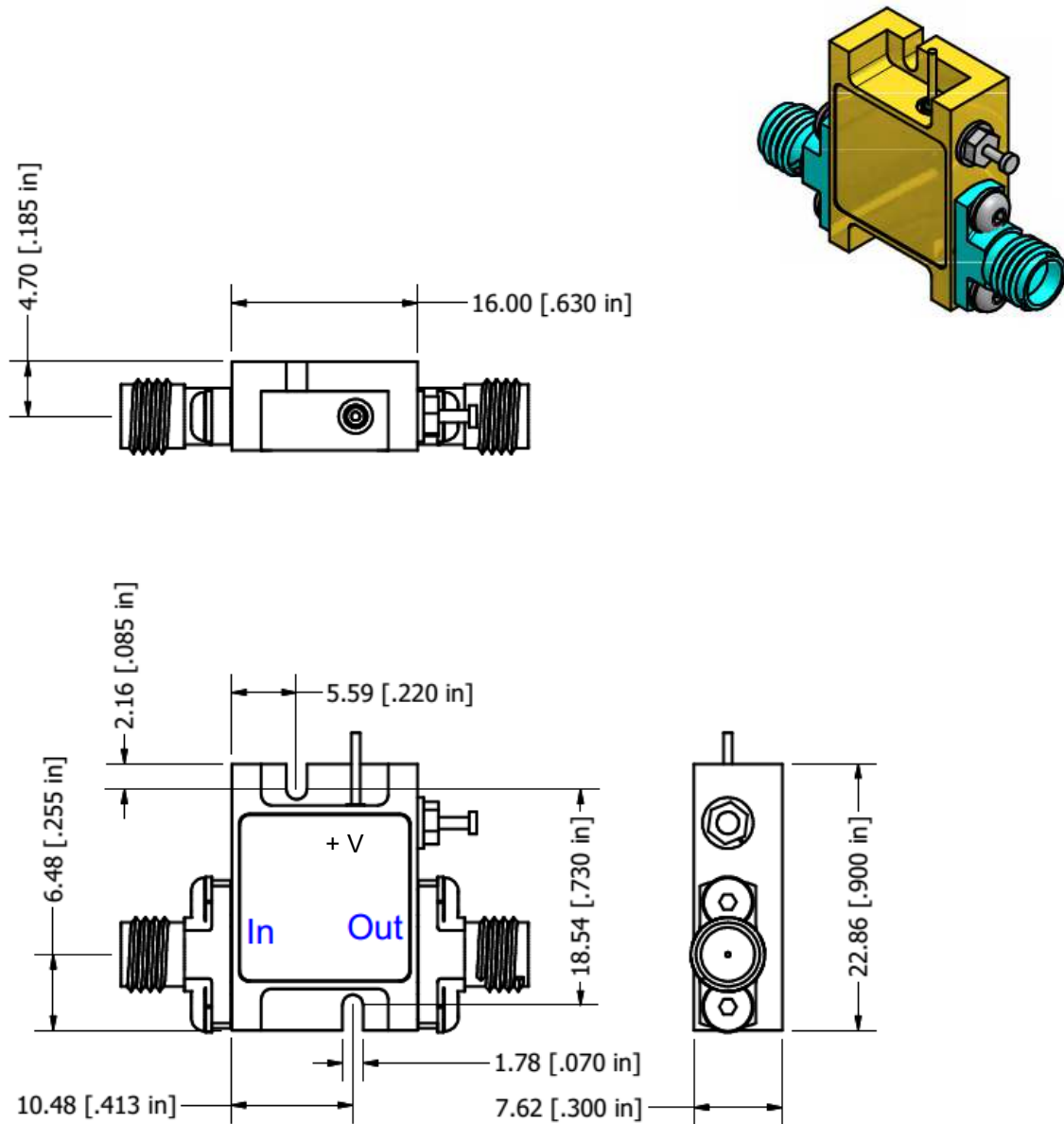


CH4 Markers
1: -12.959 dB
6.00000 GHz
2: -13.975 dB
6.25000 GHz
3: -15.486 dB
6.50000 GHz
4: -16.737 dB
6.75000 GHz
5: -16.917 dB
7.00000 GHz

START 6000.000 MHz STOP 7000.000 MHz



Package Outline M084: SMA mm Female Connectors (inches)



Field replaceable SMA Connectors

Housing material: Aluminum Plating: Gold over Nickel

Note: The unit must be attached to proper heat sink

Model Number	Description	Hermeticity	Package
AMT-A0438	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

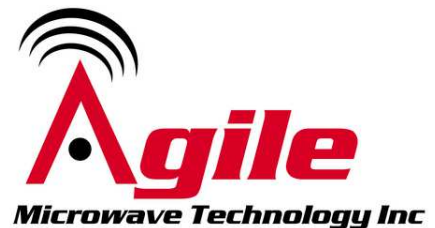
Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

Contact Information:

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