

AMT-A0406 3.8 GHz to 8.2 GHz Broadband Low Noise Amplifier with Flat Gain

Data Sheet



Features

- 3.8 GHz to 8.2 GHz Frequency Range
- Typical Noise Figure < 3 dB, 4 dB max
- Typical Gain 28 dB
- Gain Flatness < ± 0.5 dB typical
- +16 dBm P1dB typical
- Internally Regulated
- Operates from a +12V Single Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0406 is a Broadband Low Noise amplifier with very flat gain over the full frequency range. The performance is achieved through the use of AMT's proprietary technology. The amplifier I/Os are Internally matched to 50 Ohms. The AMT-A0406 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}	$^{\circ}C$	-40	+85
Storage Temperature - Case	T_{MS}	$^{\circ}C$	-54	+150
RF Input power (CW)	P_{in}	dBm		+20
Die $T_{Junction}$	T_J	$^{\circ}C$		+150
Positive Supply Voltage	V_{+SS}	V		+15.5

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	3.8		8.2
Gain	Small Signal	dB	26	28	30
Gain Flatness		dB		±0.5	±1
Input Power	CW, without damage	dBm	+20		
Output Power (P1dB)	1 dB compression point @ 6 GHz	dBm	13	16	
OIP3	OIP3 measured @ 8 GHz Two tone F1-F2= 10MHz	dBm	23	25	
Noise Figure		dB		3	4
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.0:1
RF Output Impedance	Reference to 50 ohms			1:8:1	2.0:1
Supply Voltage Positive:		V		+12 to 15V	
Supply Current Positive:		mA		100	220

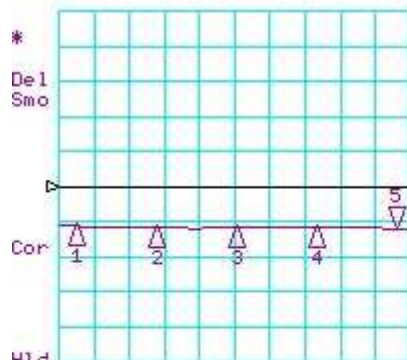
Notes:

1/ Unconditional Stability

Customized configurations of the above specifications are available

Typical S-Parameters @ 25°C

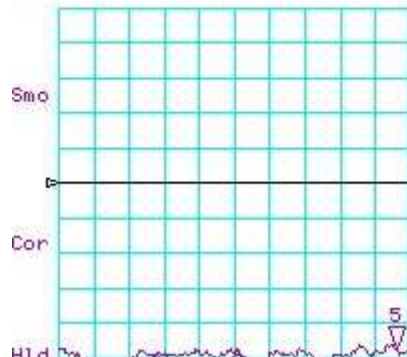
CH1 LOG 10 dB/ REF 0 dB
S11 5: -12.052 dB 8.000 000 000 GHz



CH1 Markers
1: -11.220 dB
4.00000 GHz
2: -11.849 dB
5.00000 GHz
3: -11.785 dB
6.00000 GHz
4: -11.577 dB
7.00000 GHz

START 3800.000 MHz STOP 8200.000 MHz

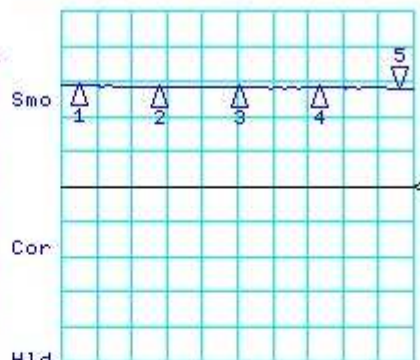
CH3 LOG 10 dB/ REF -10 dB
S12 5: -57.152 dB 8.000 000 000 GHz



CH3 Markers
1: -59.187 dB
4.00000 GHz
2: -59.092 dB
5.00000 GHz
3: -58.035 dB
6.00000 GHz
4: -61.278 dB
7.00000 GHz

START 3800.000 MHz STOP 8200.000 MHz

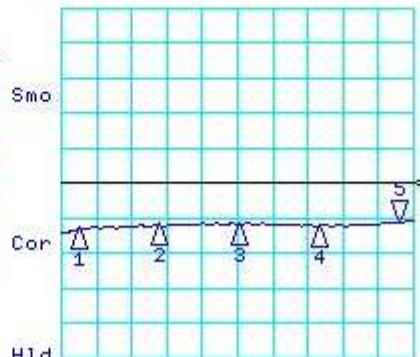
CH2 LOG 10 dB/ REF 0 dB
S21 5: 28.052 dB 8.000 000 000 GHz



CH2 Markers
1: 28.918 dB
4.00000 GHz
2: 28.491 dB
5.00000 GHz
3: 28.164 dB
6.00000 GHz
4: 28.143 dB
7.00000 GHz

START 3800.000 MHz STOP 8200.000 MHz

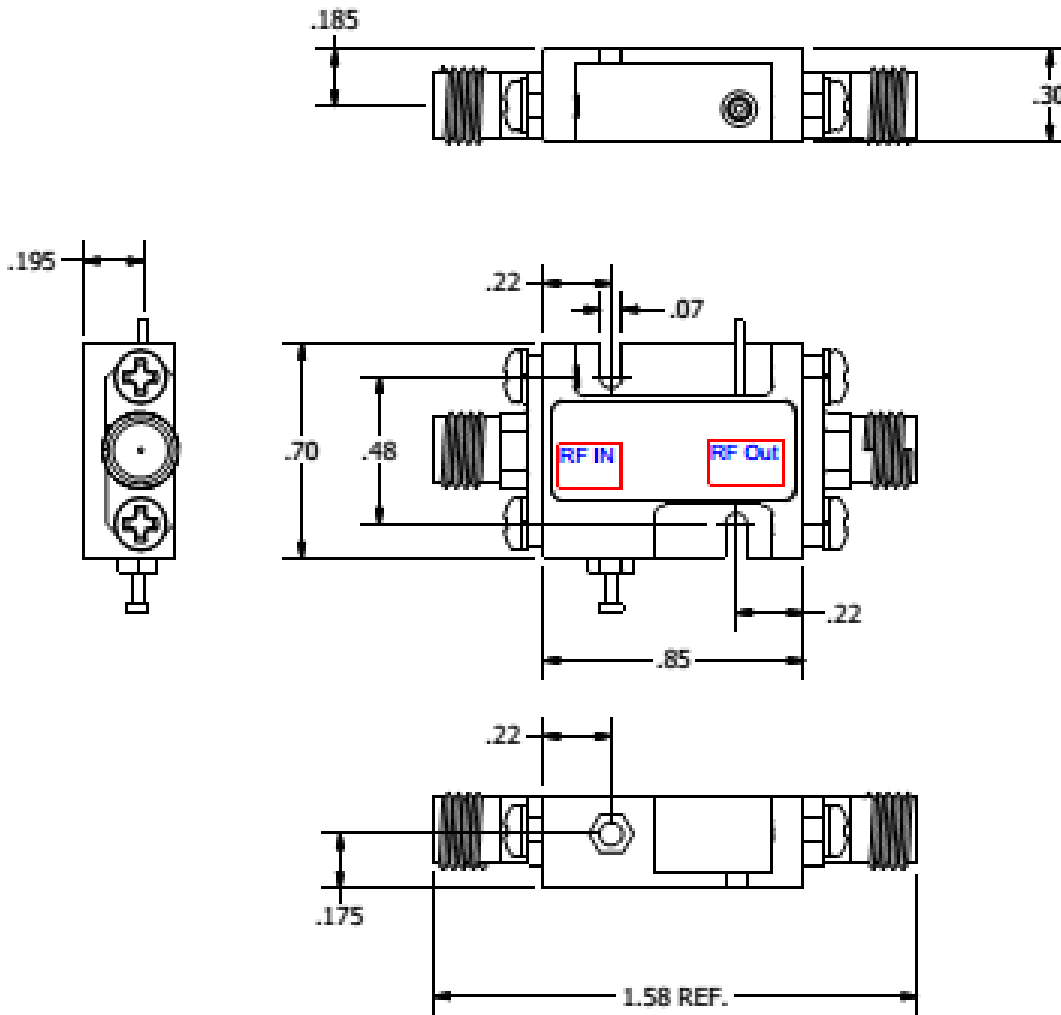
CH4 LOG 10 dB/ REF 0 dB
S22 5: -11.080 dB 8.000 000 000 GHz



CH4 Markers
1: -13.216 dB
4.00000 GHz
2: -11.925 dB
5.00000 GHz
3: -11.685 dB
6.00000 GHz
4: -12.241 dB
7.00000 GHz

START 3800.000 MHz STOP 8200.000 MHz

Package Outline: M110 SMA Connectorized (inches)



**Housing: Aluminum Gold over Nickel plated
Removable SMA and Ground Slug**

Model Number	Description	Hermeticity	Package
AMT-A0406	SMA Female	Non-Hermetic	Outline: M110

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.

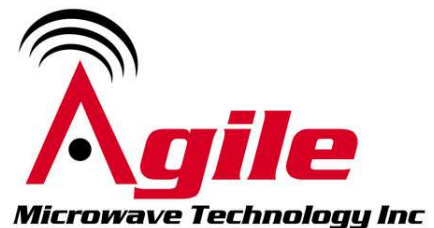
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital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