

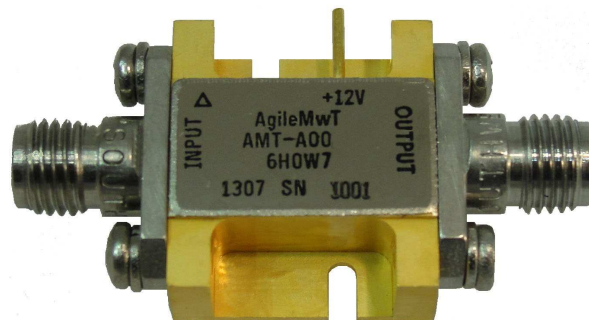
AMT-A0164 1 GHz to 8 GHz Medium Power Low Noise Amplifier

Data Sheet



Features

- 1 GHz to 8 GHz Frequency Range
- Typical Gain 42 dB (± 3 dB window)
- Gain Flatness < ± 1.5 dB
- P1dB +24 dB min , +26 dB Typical
- OIP3 +33 dBm min, +35 dB Typical
- Internally Regulated
- Operates from a Single +12V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0164 is a Low Noise amplifier with Medium Power over the full frequency range. The performance is achieved through the use of AMTI's proprietary technology. The amplifier I/Os are Internally matched to 50 Ohms and DC blocked. The AMT-A0164 is ideal for use as gain block or driver amplifier of receiver system, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications.

Applications

- Gain Block
- Driver Amplifier
- Radar
- Communication systems
- Microwave Radio systems
- Test Equipment

MAXIMUM RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T _{MO}	° C	-55	+85
Storage Temperature - Case	T _{MS}	° C	-55	+150
RF Input power (CW)	P _{in}	dBm		+17
Die T _{Junction}	T _J	° C		+150
Positive Supply Voltage	V _{+SS}	V		+15

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	1		8
Gain	Small Signal	dB	38	42	44
Gain Flatness		dB		±1.2	±1.5
Input Power Protection	CW, without damage	dBm	+16		
Output Power (P1dB) ²	1 dB compression point @ 4.5 GHz	dBm	+24	+26	
OIP3	OIP3 measured @ 4.5 GHz Two tone F1-F2=10MHz	dB	+33	+35	
OIP2	@ 4.5 GHz	dB	+42	+55	
Noise Figure		dB		2.5	4.5
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2.2::1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		260	320

Notes:

Specifications guaranteed by design from -20C to +75C and can operate from -40C to +85C with lower performance

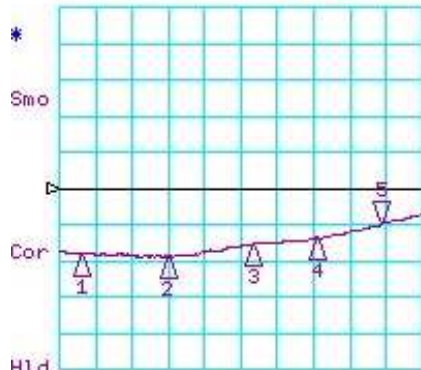
1/ Unconditional Stability:

2/ Tested @ +75C and -20C

Customized configurations of the above specifications are available

Typical S-Parameters @ 23°C

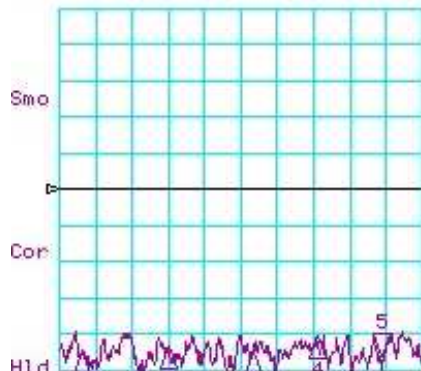
CH1 LOG 10 dB/ REF 0 dB
S11 5: -10.086 dB 8.000 000 000 GHz



CH1 Markers
1: -18.297 dB
1.00000 GHz
2: -18.825 dB
3.00000 GHz
3: -15.317 dB
5.00000 GHz
4: -13.673 dB
6.50000 GHz

H1d
START 500.000 MHz STOP 9000.000 MHz

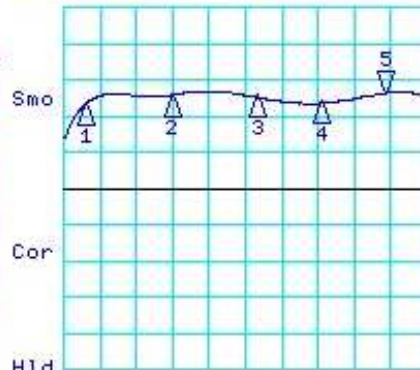
CH3 LOG 10 dB/ REF -10 dB
S12 5: -56.263 dB 8.000 000 000 GHz



CH3 Markers
1: -55.586 dB
1.00000 GHz
2: -54.060 dB
3.00000 GHz
3: -55.454 dB
5.00000 GHz
4: -51.065 dB
6.50000 GHz

H1d
START 500.000 MHz STOP 9000.000 MHz

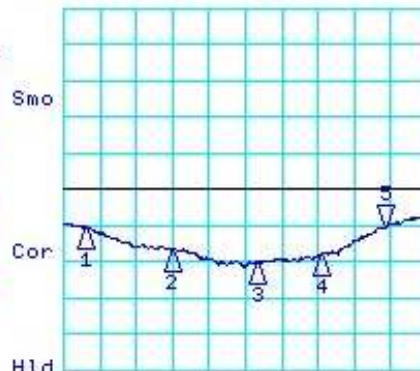
CH2 LOG 5 dB/ REF 30 dB
S21 5: 43.143 dB 8.000 000 000 GHz



CH2 Markers
1: 41.654 dB
1.00000 GHz
2: 42.940 dB
3.00000 GHz
3: 42.622 dB
5.00000 GHz
4: 41.810 dB
6.50000 GHz

H1d
START 500.000 MHz STOP 9000.000 MHz

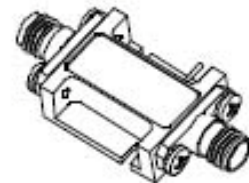
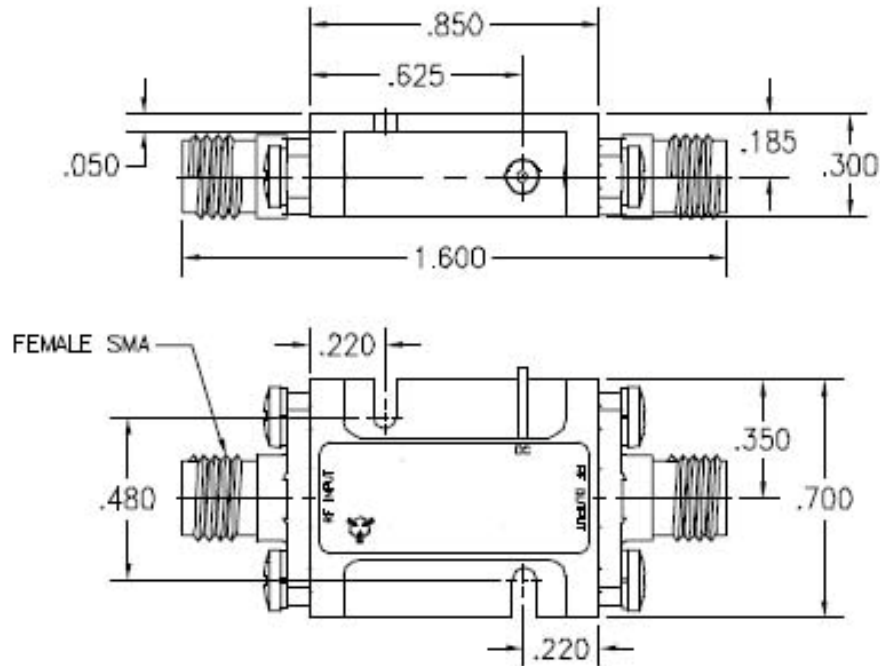
CH4 LOG 10 dB/ REF 0 dB
S22 5: -10.602 dB 8.000 000 000 GHz



CH4 Markers
1: -10.469 dB
1.00000 GHz
2: -16.743 dB
3.00000 GHz
3: -20.253 dB
5.00000 GHz
4: -17.810 dB
6.50000 GHz

H1d
START 500.000 MHz STOP 9000.000 MHz

Package Outline: M006 SMA Connectorized (inches)



ISOMETRIC VIEW
ACTUAL SIZE

Amplifier requires proper heat dissipation

Model Number	Description	Hermeticity	Package
AMT-A0164	SMA Female	Non-Hermetic	Outline: M006
AMT-A0164-H	SMA Female	Hermetic	Outline: M006

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.

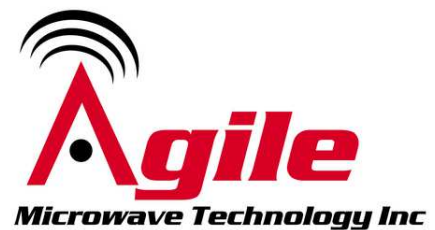
Contact Information:

**101 Bloomingdale Road
Hicksville, NY 11801**

Phone: (516) 931-1760

Fax: (212) 374-1153

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 product and no patent licenses are implied. AMTI reserves all rights.