

AMT-A0116 12.7 GHz to 13.2 GHz Low Noise Amplifier

Data Sheet



Features

- 12.7 GHz to 13.2 GHz Frequency Range
- Typical Noise Figure < 1.2 dB
- Typical Gain 19 dB
- Gain Flatness < ± 0.3 dB Typical
- Internally Regulated
- Operates from a Single +12V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology



Description

The AMT-A0116 is a Broadband Low Noise amplifier with very low noise figure 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. The AMT-A0116 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}	$^{\circ}C$	-55	+150
RF Input power (CW)	P_{in}	dBm		+10
Die $T_{Junction}$	T_J	$^{\circ}C$		+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	12.7		13.2
Gain	Small Signal	dB	17	19	
Gain Flatness		dB		±0.3	±0.8
Input Power (Survival)	CW, without damage	dBm	+10		
Output Power (P1dB)	1 dB compression point @ 13 GHz	dBm	5	8	
OIP3	OIP3 measured @ 13 GHz Two tone F1-F2= 13MHz	dB		18	
Noise Figure		dB		1.2	1.4
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.3:1
RF Output Impedance	Reference to 50 ohms			1.8:1	2.0:1
Stability Factor K	Unconditionally Stable		1		
Stability Factor B1	Unconditionally Stable		0		
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		38	50

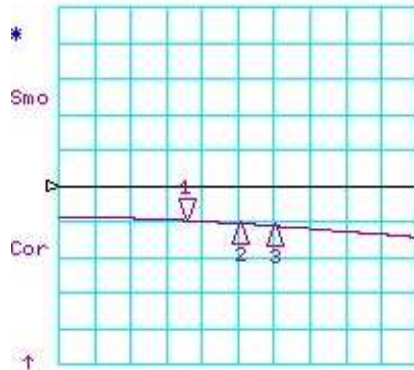
Notes:

1/ Unconditional Stability: ($K > 1$) and ($B1 > 0$)

Customized configurations of the above specifications are available

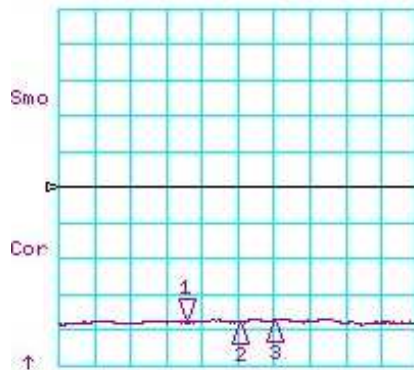
Typical S-Parameters @ 23°C

CH1 LOG 10 dB/ REF 0 dB
S11 1:-9.6710 dB 12.700 000 000 GHz



CH1 Markers
2:-10.484 dB
13.0000 GHz
3:-11.196 dB
13.2000 GHz

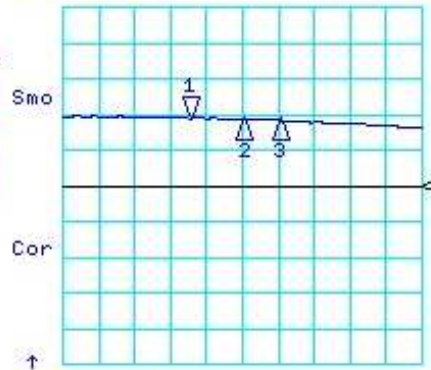
START12000.000 MHz STOP14000.000 MHz
CH3 LOG 10 dB/ REF 0 dB
S12 1:-37.748 dB 12.700 000 000 GHz



CH3 Markers
2:-37.932 dB
13.0000 GHz
3:-37.322 dB
13.2000 GHz

START12000.000 MHz STOP14000.000 MHz

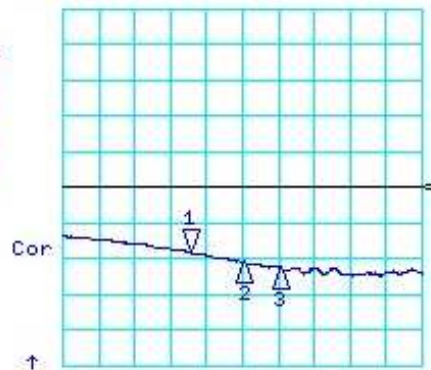
CH2 LOG 5 dB/ REF 10 dB
S21 1:19.484 dB 12.700 000 000 GHz



CH2 Markers
2: 19.422 dB
13.0000 GHz
3: 19.198 dB
13.2000 GHz

START12000.000 MHz STOP14000.000 MHz

CH4 LOG 10 dB/ REF 0 dB
S22 1:-18.055 dB 12.700 000 000 GHz

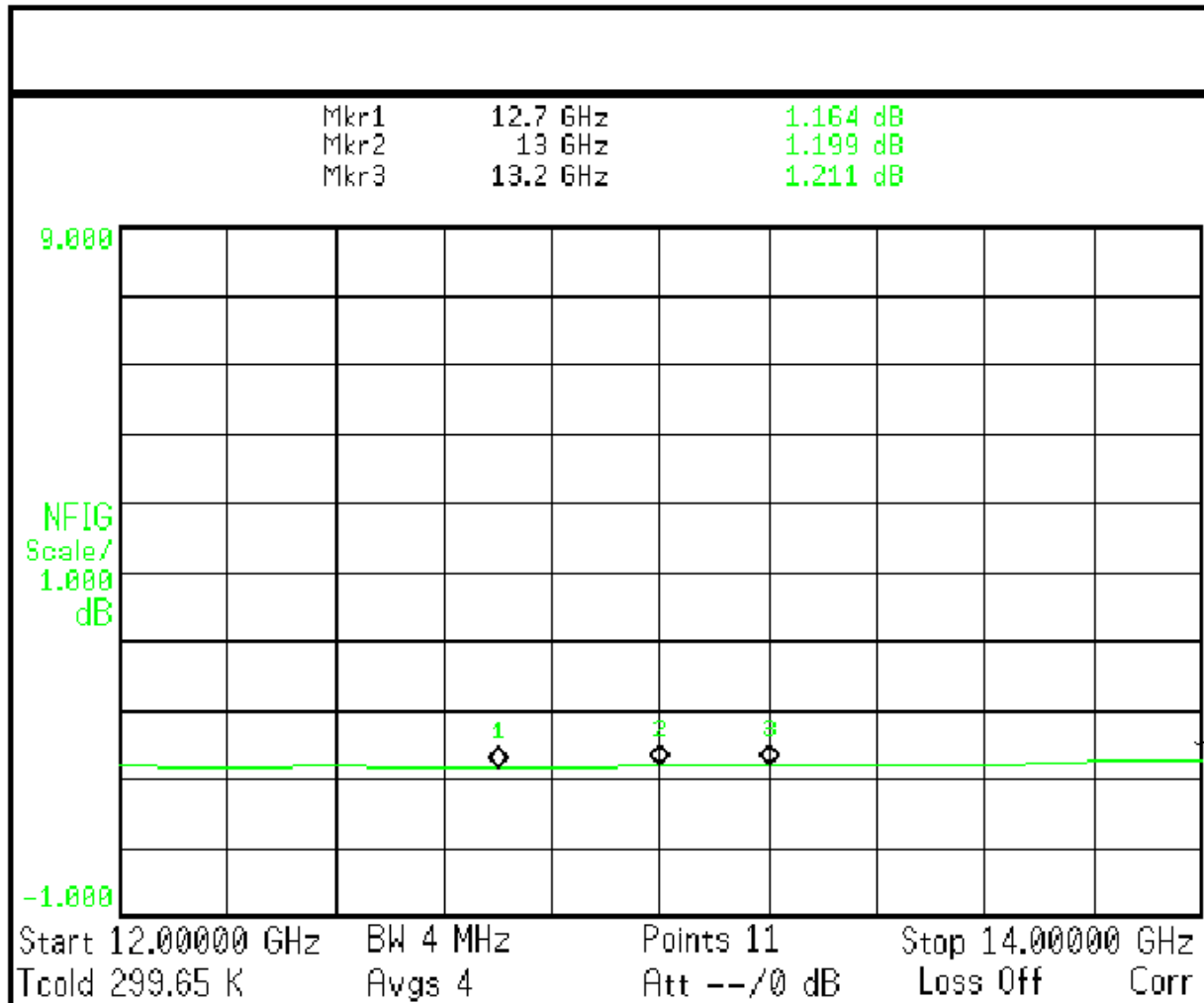


CH4 Markers
2:-21.088 dB
13.0000 GHz
3:-22.420 dB
13.2000 GHz

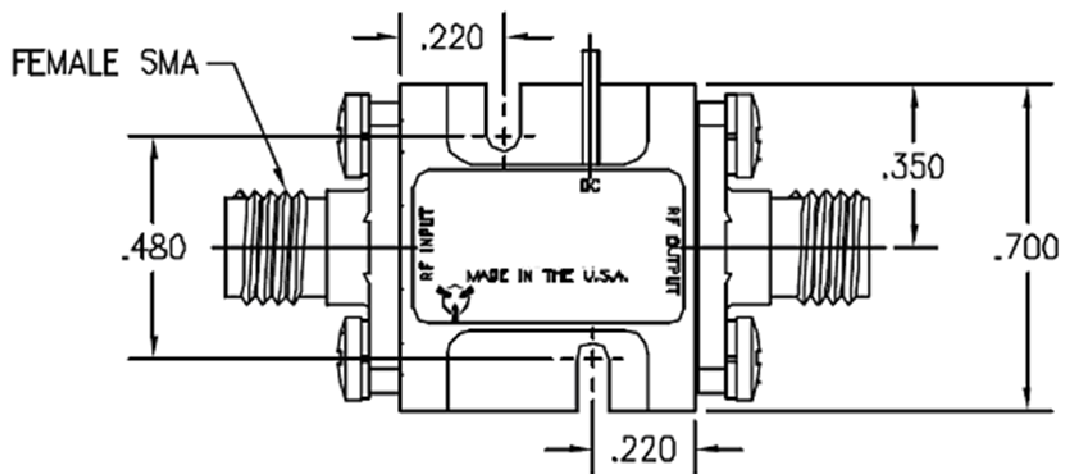
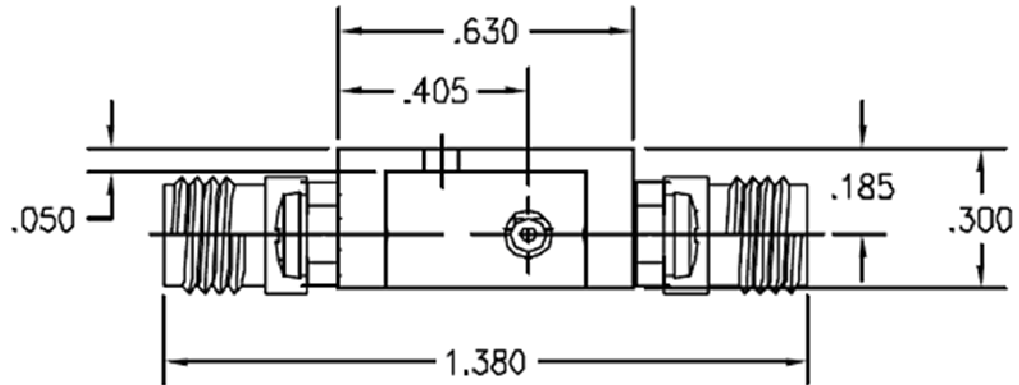
START12000.000 MHz STOP14000.000 MHz

Typical Noise Figure Plot @ 23°C

Agilent 16:51:58 Aug 21, 2013



Package Outline: M004 SMA Connectorized (inches)



Model Number	Description	Hermeticity	Package
AMT-A0116	SMA Female	Non-Hermetic	Outline: M004

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.

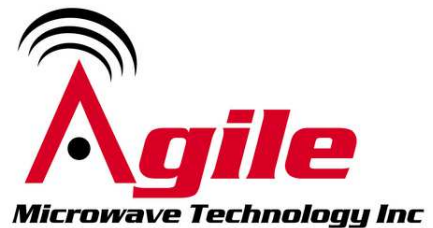
Contact Information:

**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.