

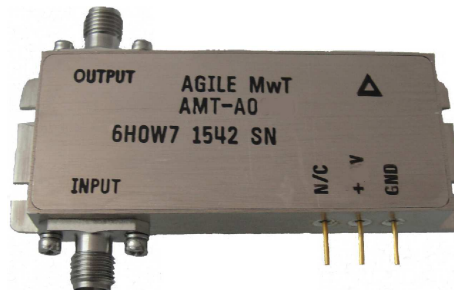
# AMT-A0401 1 GHz to 2 GHz 4W 44 dB Gain High Power Amplifier Module

Data Sheet



## Features

- 1 GHz to 2 GHz Frequency Range
- Typical P3dB power > +35 dBm
- Gain 44 dB Typical,
- Gain Flatness  $\pm 0.5$  dB typical
- Noise Figure 2 dB typical, 3 dB max
- Internally Regulated
- Operates from a Single +28V Supply
- Unconditionally Stable
- Compact Size



## Description

The AMT-A0401 is a 4 W power amplifier in a compact size. The performance is achieved through the use of AMTI's proprietary matching technology and latest in GaN technology. The amplifier I/Os are Internally matched to 50 Ohms and are DC blocked. The AMT-A0401 is ideal for use as Transmitter, test equipment, or where broadband amplification and power are required in a Hi-Rel communications system for Commercial or Military applications

## Applications

- Transmitter
- Test Equipment
- Lab Applications
- Radar

## MAXIMUM RATINGS<sup>1</sup>

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	$T_{MO}$	$^{\circ}C$	-40	+75
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
DC Current		A		1
Positive Supply Voltage	$V_{+SS}$	V	+15	+29

Appropriate Heat sink must be used

Do not turn on RF without loading RFout

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		2
Gain	Small Signal	dB	38	44	
Gain Flatness		dB		±0.5	±1.5
Output Power (P2dB)	Saturated Output power	dBm	33.5	35	
OIP3	OIP3 @ 28 GHz Two tone F1-F2= 10MHz	dB		42	
Noise Figure		dB		2	3
RF Input Impedance	Reference to 50 ohms VSWR	dB		1.8:1	2.0:1
RF Output Impedance	Reference to 50 ohms VSWR	dB		1.8:1	2.3:1
Supply Voltage Positive:		V		+28	
Supply Current Positive:	Small signal	mA		300	

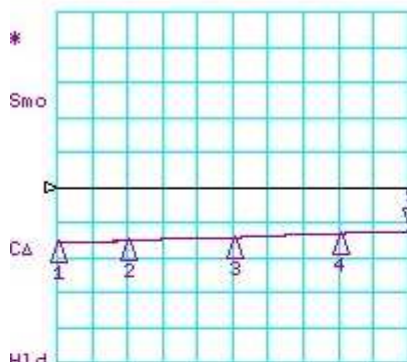
Notes:

1/ Unconditional Stability

Customized configurations of the above specifications are available

# Typical S-Parameters @ 23°C

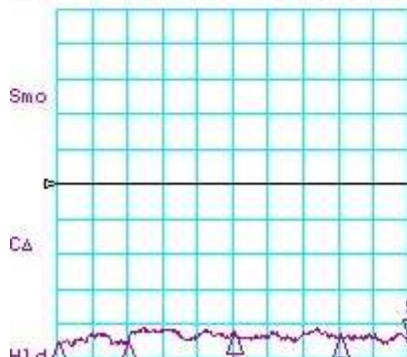
CH1 LOG 10 dB/ REF 0 dB  
S11 5:-12.380 dB 2.000 000 000 GHz



CH1 Markers  
1:-15.691 dB  
1.00000 GHz  
2:-15.241 dB  
1.20000 GHz  
3:-14.322 dB  
1.50000 GHz  
4:-13.170 dB  
1.80000 GHz

H1d  
START 1000.000 MHz STOP 2000.000 MHz

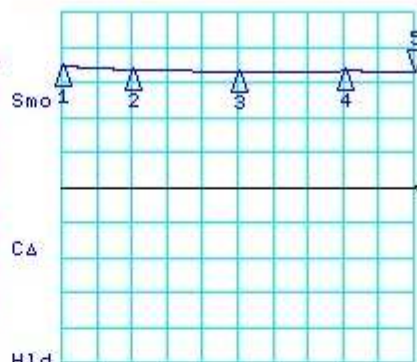
CH3 LOG 10 dB/ REF -10 dB  
S12 5:-55.172 dB 2.000 000 000 GHz



CH3 Markers  
1:-55.772 dB  
1.00000 GHz  
2:-55.306 dB  
1.20000 GHz  
3:-52.753 dB  
1.50000 GHz  
4:-53.903 dB  
1.80000 GHz

H1d  
START 1000.000 MHz STOP 2000.000 MHz

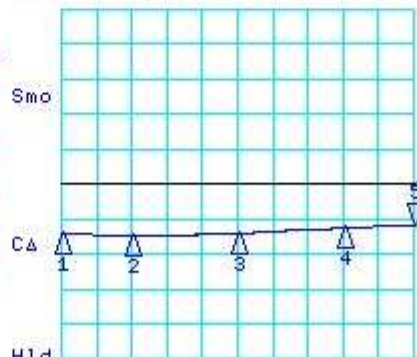
CH2 LOG 5 dB/ REF 28 dB  
S21 5: 44.517 dB 2.000 000 000 GHz



CH2 Markers  
1: 45.235 dB  
1.00000 GHz  
2: 44.835 dB  
1.20000 GHz  
3: 44.547 dB  
1.50000 GHz  
4: 44.623 dB  
1.80000 GHz

H1d  
START 1000.000 MHz STOP 2000.000 MHz

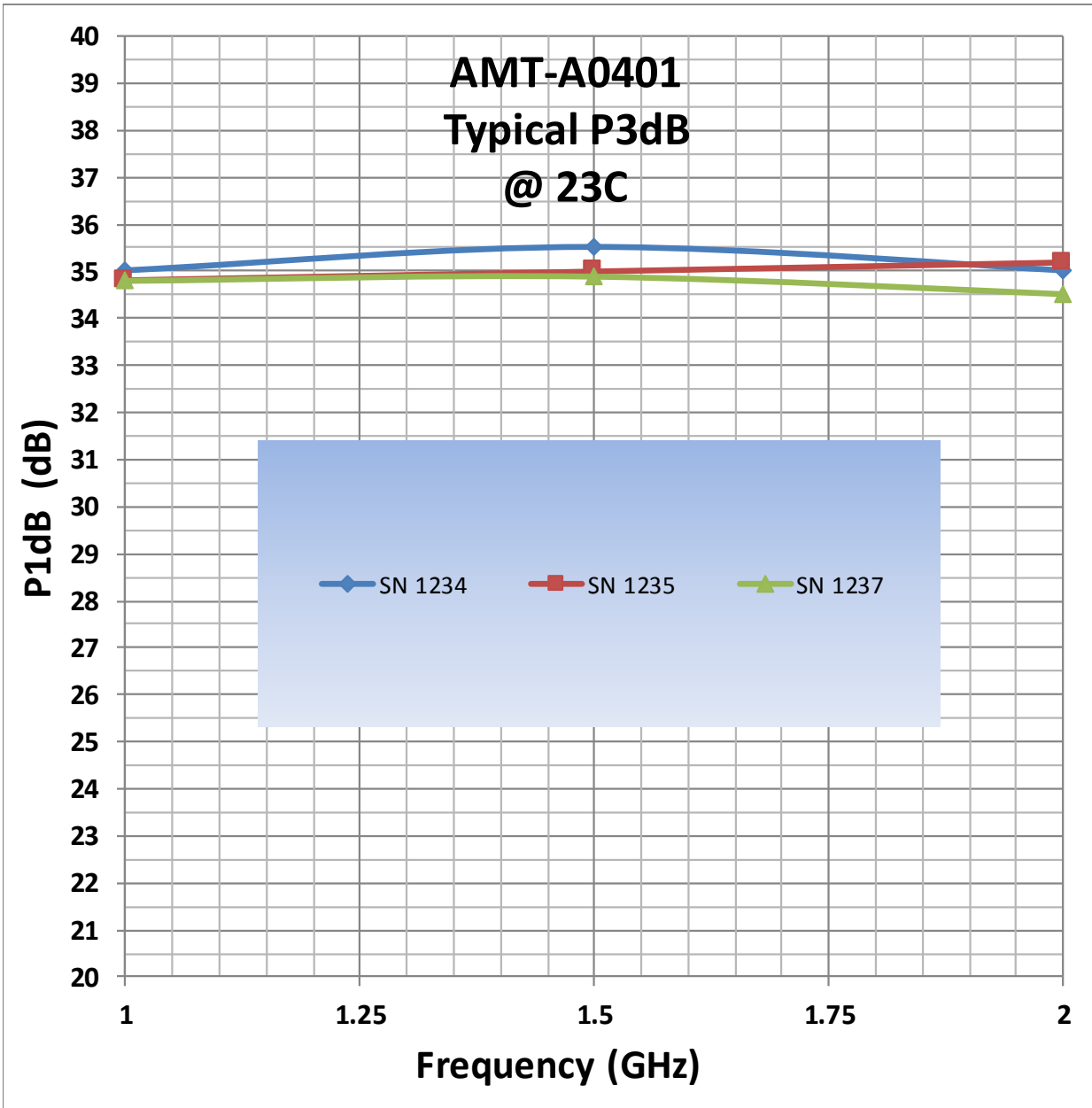
CH4 LOG 10 dB/ REF 0 dB  
S22 5:-11.584 dB 2.000 000 000 GHz



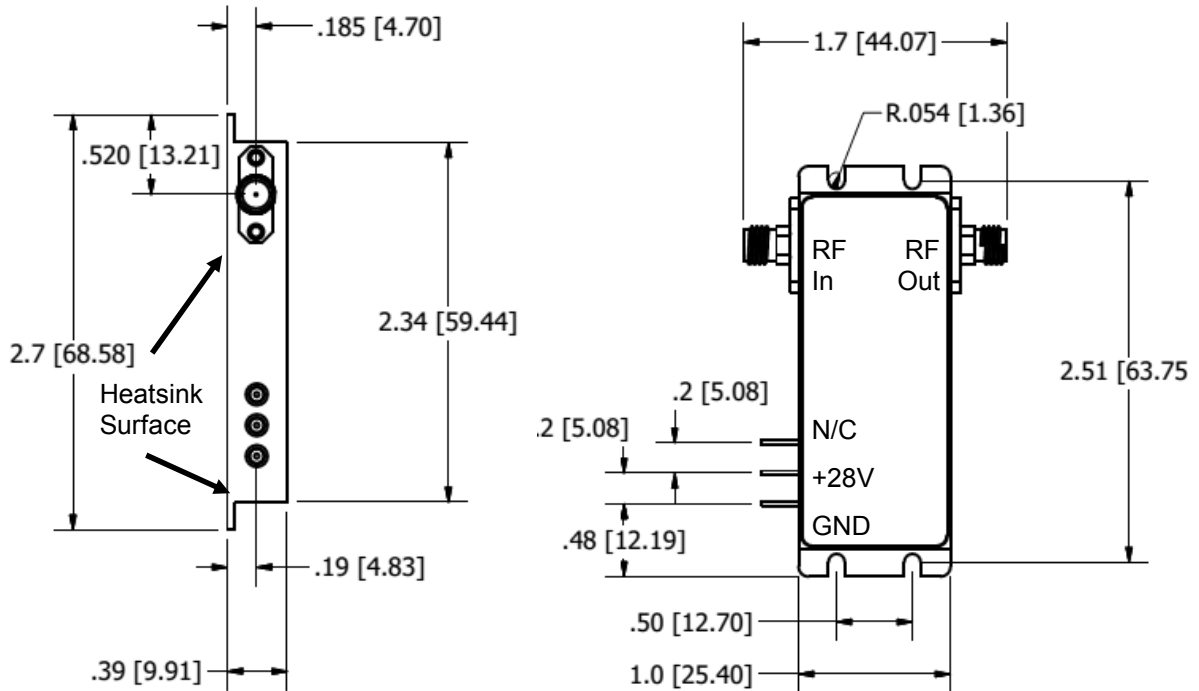
CH4 Markers  
1:-13.805 dB  
1.00000 GHz  
2:-14.730 dB  
1.20000 GHz  
3:-13.996 dB  
1.50000 GHz  
4:-12.488 dB  
1.80000 GHz

H1d  
START 1000.000 MHz STOP 2000.000 MHz

# Typical P3dB Power @ 23°C



**Package Outline: Units are in Inches [mm] SMA Connectorized Inch-**



**Field replaceable SMA Connectors  
Housing Material Aluminum, Nickel Plated**

**Note: The unit must be attached to proper heat sink with thermal interface material ( Thermal Pad or Thermal Grease)**

<b>Model Number</b>	<b>Description</b>	<b>Hermeticity</b>	<b>Package</b>
AMT-A0401	SMA Female	Non-Hermetic	Outline: M118

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:

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

**ISO 9001:2015  
CERTIFIED**



**[info@agilemwt.com](mailto:info@agilemwt.com)    [www.agilemwt.com](http://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.