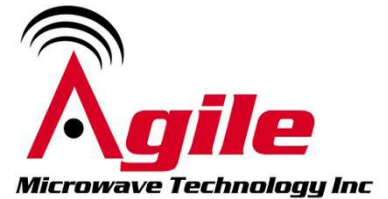


# AMT-A0142 1 GHz to 18 GHz Broadband Medium Power with Low Noise Amplifier

Data Sheet



## Features

- 1 GHz to 18 GHz Frequency Range
- Typical P1dB power > +23 dBm
- Gain 18 dB Typical
- Gain Flatness  $\pm 1$  dB Typical
- 2.7 dB Typical Noise Figure
- Internally Regulated
- Operates from Single +10 to +12V Supply
- Unconditionally Stable
- Compact Housing



## Description

The AMT-A0142 is a +23 dBm P1dB Broadband medium power amplifier in a compact size. The performance is achieved through the use of AMTI's proprietary matching technology and latest in GaAs technology. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The AMT-A0142 is ideal for use as medium power with low noise for test equipment, Communication systems or where broadband amplification and power are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

## Applications

- Test Equipment
- EW Systems
- Lab Applications
- Radar

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

EAR99 NLR

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		+20
Die $T_{Junction}$	$T_J$	$^{\circ}C$		+150
Positive Supply Voltage	$V_{+SS}$	V		+13

### 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	1		18
Gain	Small Signal	dB	16	18	
Gain Flatness		dB		±1	±1.8
Noise Figure		dB		2.7	5
Output Power (P1dB)	1 to 16 GHz	dBm	+20	+23	
OIP3	OIP3 @ 10 GHz Two tone F1-F2= 10MHz	dB		30	
RF Input Impedance	Reference to 50 ohms VSWR			1.5:1	2.2:1
RF Output Impedance	Reference to 50 ohms VSWR			1.5:1	2.2:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:	Small signal	mA		180	250

Notes:

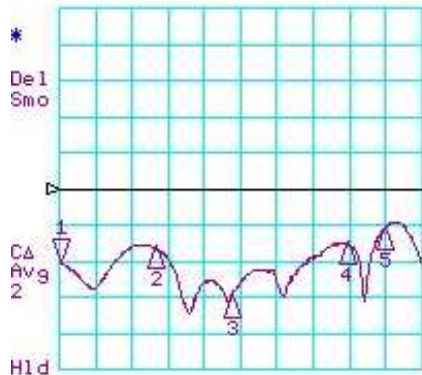
1/ Unconditional Stability

P1dB may be lower from 16 to 18 GHz +19 dBm min

Customized configurations of the above specifications are available

# Typical S-Parameters @ 23°C

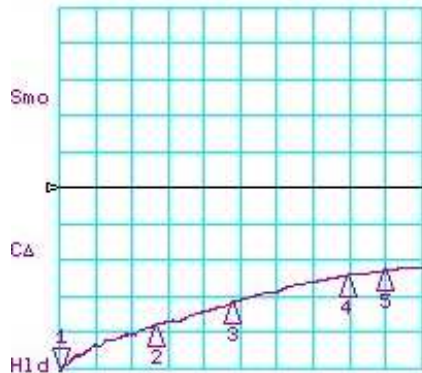
CH1 LOG 10 dB/ REF 0 dB  
 S11 1:-20.174 dB 1.000 000 000 GHz



CH1 Markers  
 2:-16.317 dB  
 6.00000 GHz  
 3:-29.801 dB  
 10.0000 GHz  
 4:-15.025 dB  
 16.0000 GHz  
 5:-11.014 dB  
 18.0000 GHz

H1d  
 START 1000.000 MHz STOP 20000.000 MHz

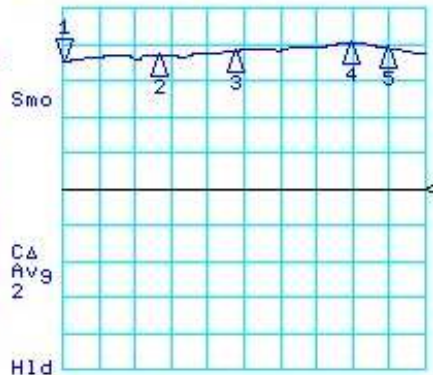
CH3 LOG 10 dB/ REF 0 dB  
 S12 1:-51.558 dB 1.000 000 000 GHz



CH3 Markers  
 2:-38.225 dB  
 6.00000 GHz  
 3:-32.036 dB  
 10.0000 GHz  
 4:-24.333 dB  
 16.0000 GHz  
 5:-23.012 dB  
 18.0000 GHz

H1d  
 START 1000.000 MHz STOP 20000.000 MHz

CH2 LOG 5 dB/ REF 0 dB  
 S21 1:17.659 dB 1.000 000 000 GHz



CH2 Markers  
 2:18.544 dB  
 6.00000 GHz  
 3:18.983 dB  
 10.0000 GHz  
 4:20.299 dB  
 16.0000 GHz  
 5:19.543 dB  
 18.0000 GHz

H1d  
 START 1000.000 MHz STOP 20000.000 MHz

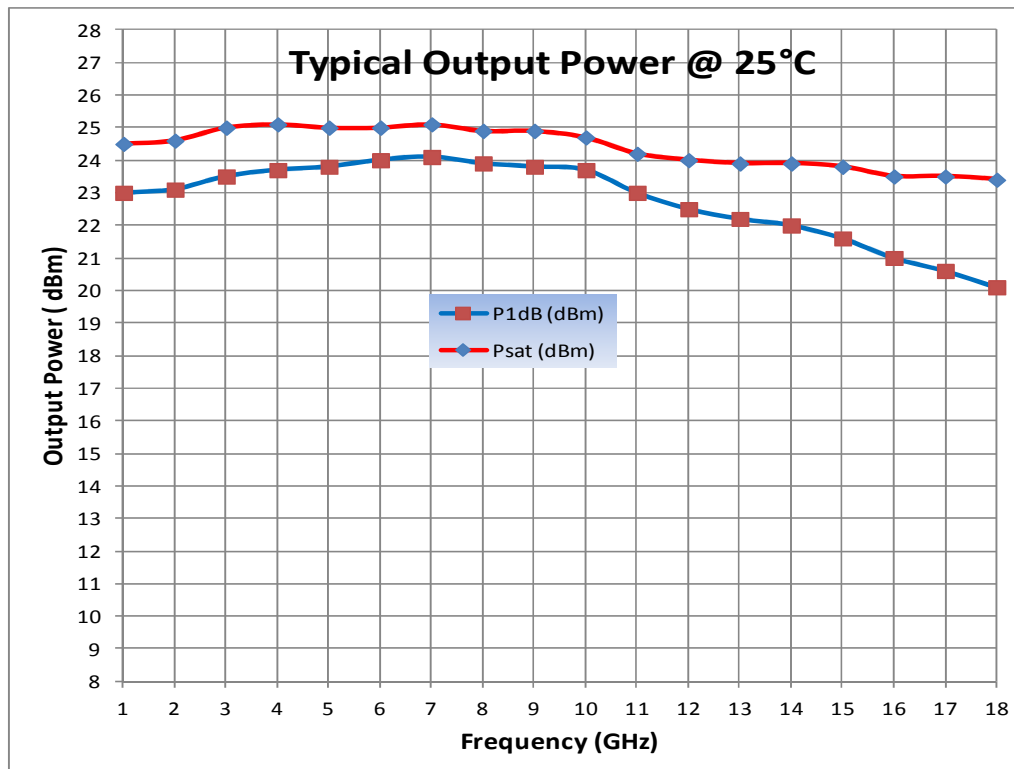
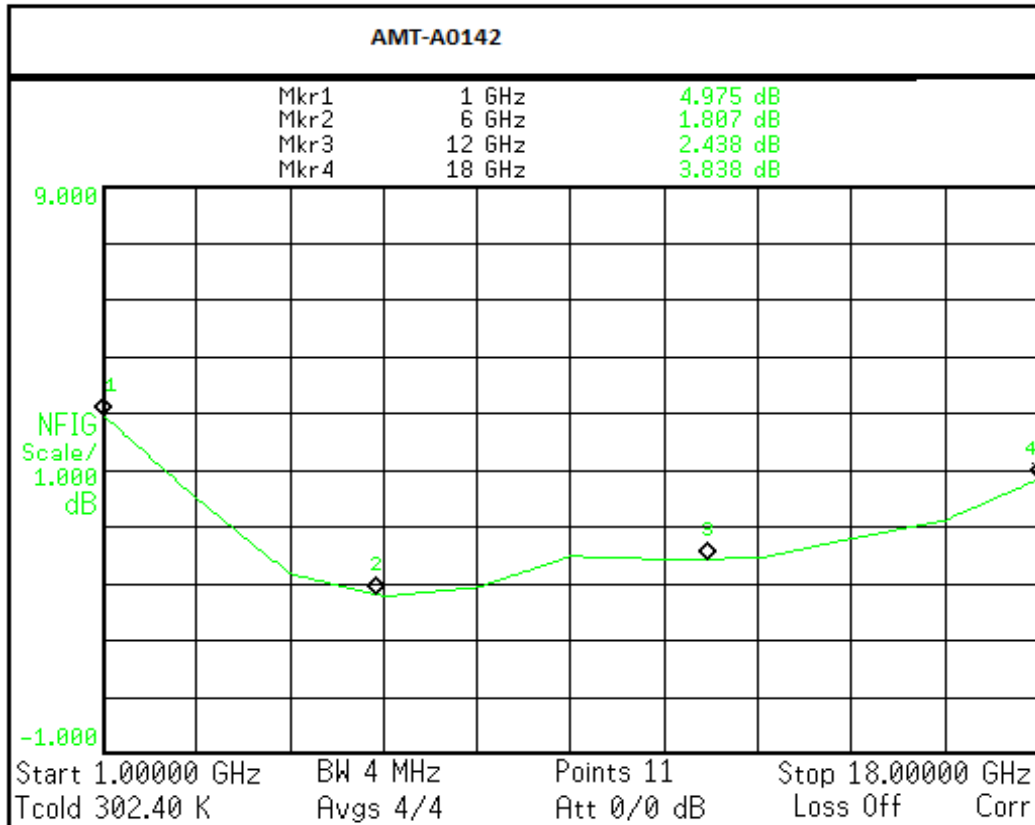
CH4 LOG 10 dB/ REF 0 dB  
 S22 1:-22.088 dB 1.000 000 000 GHz



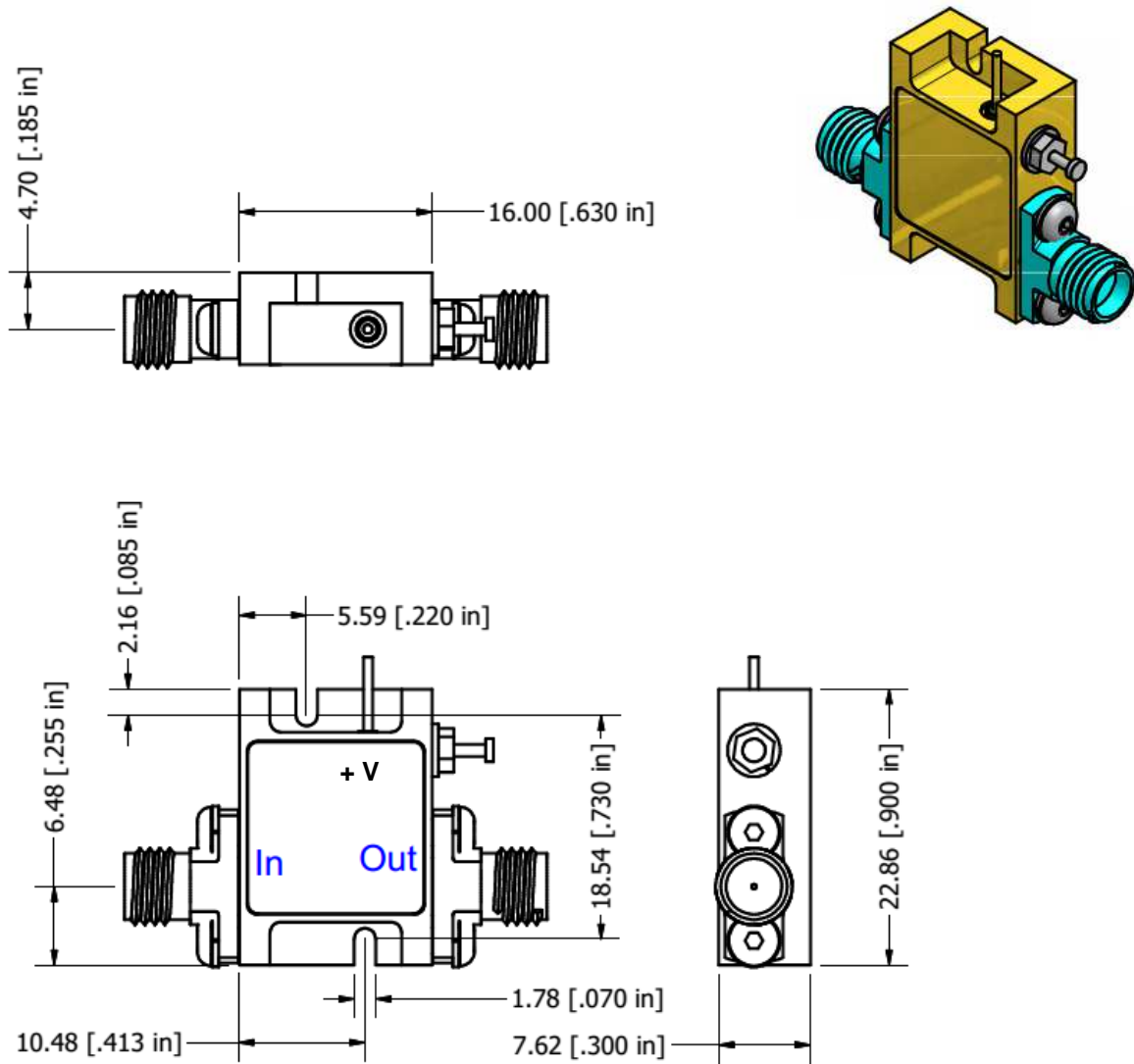
CH4 Markers  
 2:-20.394 dB  
 6.00000 GHz  
 3:-15.710 dB  
 10.0000 GHz  
 4:-17.032 dB  
 16.0000 GHz  
 5:-10.293 dB  
 18.0000 GHz

H1d  
 START 1000.000 MHz STOP 20000.000 MHz

# Typical Noise Figure @ 23°C



## Package Outline M084: SMA Connectorized mm(inches)



### Field replaceable SMA Connectors, Removable Ground Slug

**Note:** The unit must be attached to proper heat sink

Model Number	Description	Hermeticity	Package
AMT-A0142	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.

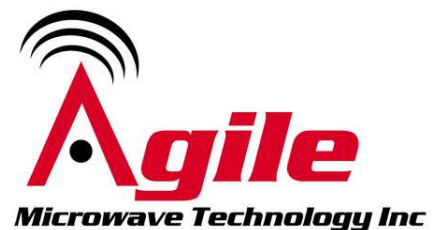
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