

# AMT-A0224 12 GHz to 18 GHz Broadband Medium Power with Low Gain Amplifier

Data Sheet



## Features

- 12 GHz to 18 GHz Frequency Range
- Typical P1dB power > +21 dBm
- Gain 10 dB Typical
- Gain Flatness  $\pm 0.5$  dB Typical
- 3.7dB Typical Noise Figure
- Internally Regulated
- Operates from Single +10 Supply
- Unconditionally Stable
- Compact Housing



## Description

The AMT-A0224 is a +21 dBm P1dB Broadband medium power amplifier with low Flat gain 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-A0224 is ideal for use as medium power with low gain 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	+85
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	12		18
Gain	Small Signal	dB	9	10	
Gain Flatness		dB		±0.5	±0.7
Noise Figure		dB		3.7	4.5
Output Power (P1dB)	1 to 16 GHz	dBm	+20	+21	
OIP3	OIP3 @ 10 GHz Two tone F1-F2= 10MHz	dB		28	
RF Input Impedance	Reference to 50 ohms VSWR			1.5:1	2.0:1
RF Output Impedance	Reference to 50 ohms VSWR			1.5:1	2.0:1
Supply Voltage Positive:		V		+10	
Supply Current Positive:	Small signal	mA		170	230

Notes:

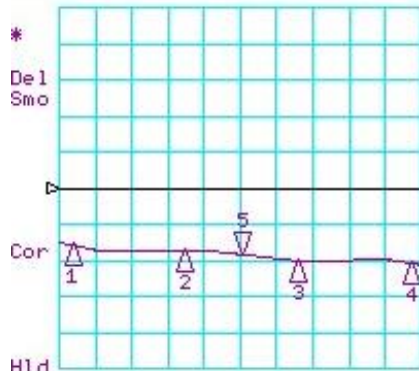
1/ Unconditional Stability

Customized configurations of the above specifications are available

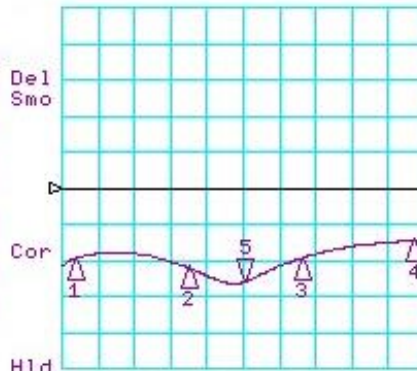
# Typical S-Parameters @ 23°C

CH1 LOG 10 dB/ REF 0 dB  
 S11 5: -18.296 dB 15.000 000 000 GHz

CH3 LOG 10 dB/ REF 0 dB  
 S22 5: -26.065 dB 15.000 000 000 GHz



CH1 Markers  
 1: -15.575 dB  
 12.0000 GHz  
 2: -17.081 dB  
 14.0000 GHz  
 3: -20.016 dB  
 16.0000 GHz  
 4: -20.584 dB  
 18.0000 GHz

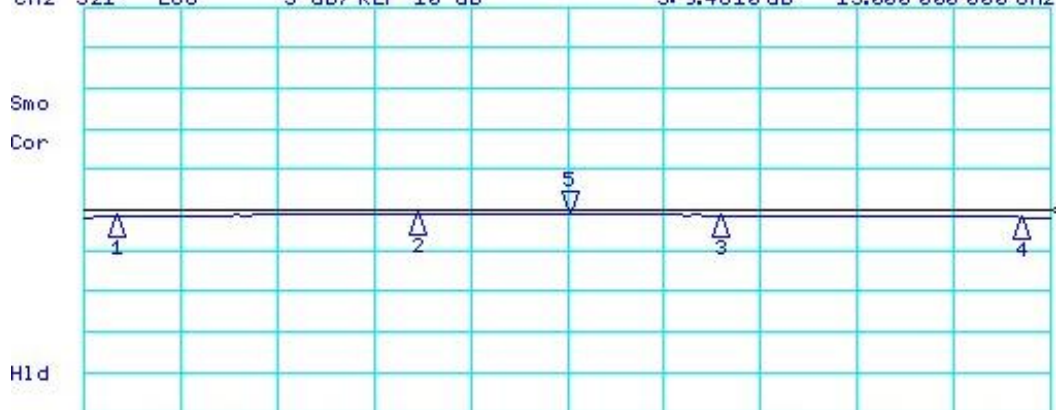


CH3 Markers  
 1: -19.542 dB  
 12.0000 GHz  
 2: -21.837 dB  
 14.0000 GHz  
 3: -19.488 dB  
 16.0000 GHz  
 4: -14.659 dB  
 18.0000 GHz

H1d  
 START 11800.000 MHz STOP 18200.000 MHz

H1d  
 START 11800.000 MHz STOP 18200.000 MHz

CH2 S21 LOG 5 dB/ REF 10 dB 5: 9.4610 dB 15.000 000 000 GHz

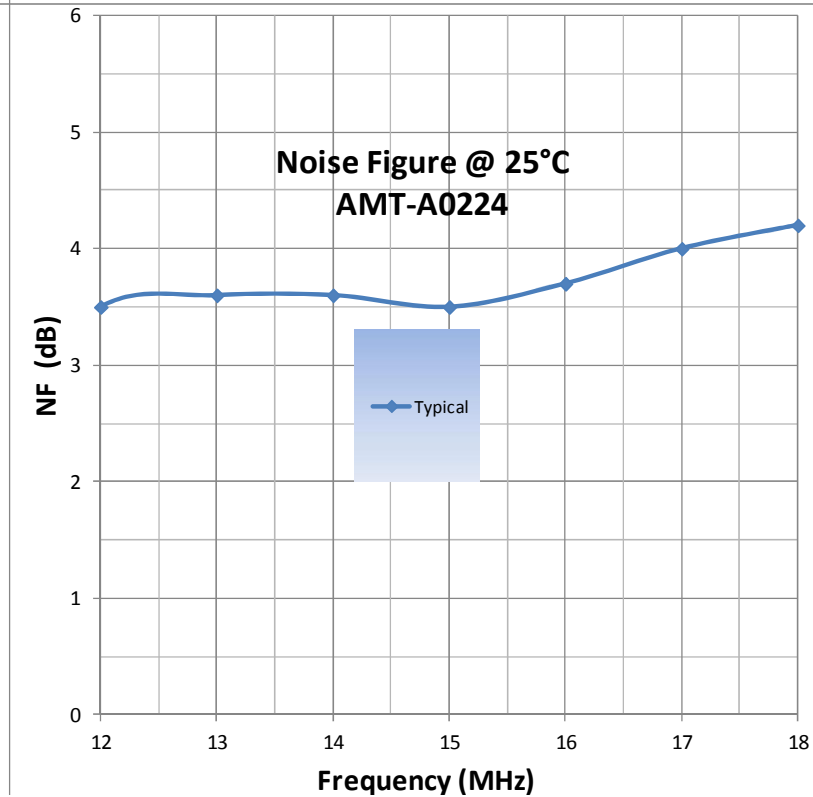
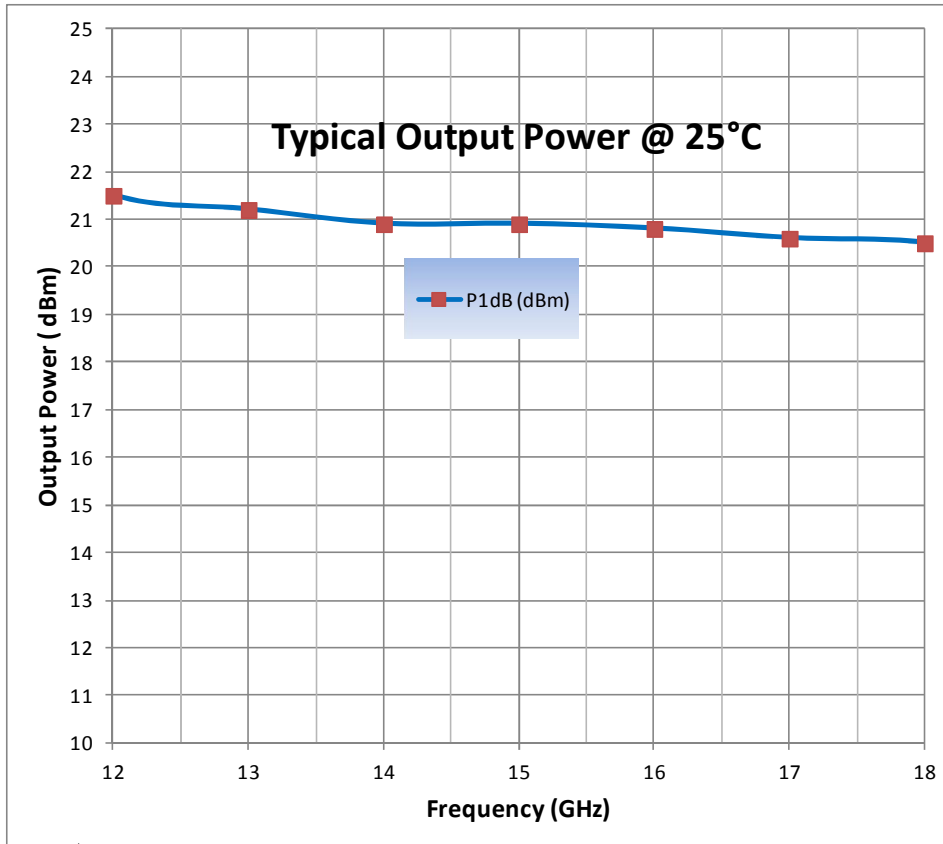


CH2 Markers  
 1: 9.2090 dB  
 12.0000 GHz  
 2: 9.4760 dB  
 14.0000 GHz  
 3: 9.3790 dB  
 16.0000 GHz  
 4: 9.1140 dB  
 18.0000 GHz

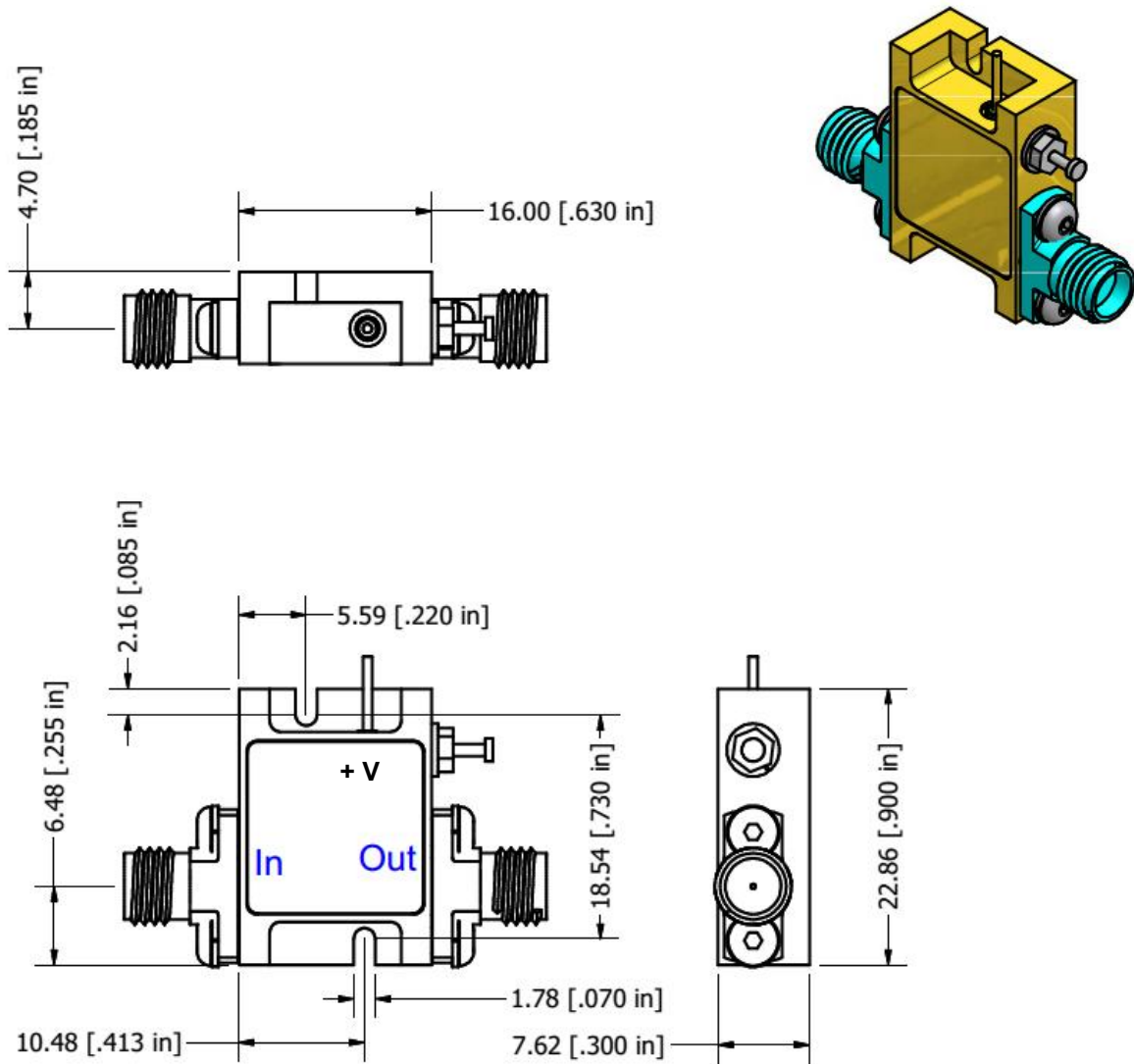
START 11.800 000 000 GHz

STOP 18.200 000 000 GHz

### 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-A0224	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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