

# AMT-A0465 5 GHz to 10 GHz Low Noise Amplifier , Medium Power & 1W Limiter

Data Sheet



## Features

- 5 GHz to 10 GHz Frequency Range
- **Typical Noise Figure 1.4 dB 2.3 dB max**
- Typical Gain 39 dB
- Gain Flatness <  $\pm 1.5$  dB Typ
- **P1dB +20 dBm Typical, 18 dBm min**
- **1W Input Power Protection Limiter**
- Internally Regulated
- Operates from a Single +12V Supply
- Unconditionally Stable



## Description

The AMT-A0465 is a Broadband Low Noise amplifier with very low noise figure, Medium Power and 1W RF Power limiter 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-A0465 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 RATINGS<sup>1</sup>

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	$T_{MO}$	$^{\circ}C$	-40	+85
Storage Temperature - Case	$T_{MS}$	$^{\circ}C$	-55	+125
RF Input power (CW)	$P_{in}$	dBm		+30
Die $T_{Junction}$	$T_J$	$^{\circ}C$		+150
Positive Supply Voltage	$V_{+SS}$	V		+12.5

### Do NOT apply DC to RF Input

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

<b>Parameter</b>	<b>Conditions</b>	<b>Units</b>	<b>MIN</b>	<b>Typical</b>	<b>MAX</b>
Frequency Range		GHz	5		10
Gain	Small Signal	dB	37	39	
Gain Flatness		dB		± 1.5	± 2
Input Power (Survival)	CW, without damage	dBm	30		
Output Power (P1dB)	1 dB compression point @ 3GHz	dBm	18	20	
OIP3	OIP3 measured @ 8 GHz Two tone F1-F2= 10MHz	dB		28	
Noise Figure		dB		1.4	2.3
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.0:1
RF Output Impedance	Reference to 50 ohms			1:5:1	2.0:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:		mA		180	210

Notes:

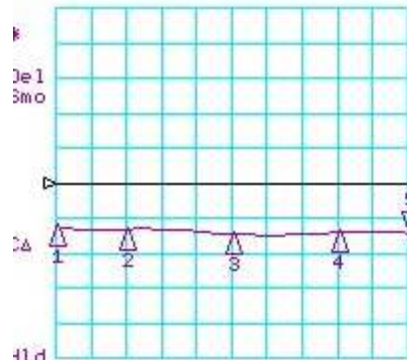
1/ Unconditional Stability

Customized configurations of the above specifications are available

# Typical Performance

# S-Parameters @ 23C

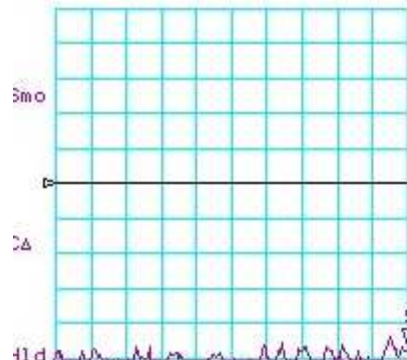
CH1 LOG 10 dB/ REF 0 dB  
S11 5: -14.213 dB 10.000 000 000 GHz



CH1 Markers  
1: -12.383 dB  
5.00000 GHz  
2: -13.165 dB  
6.00000 GHz  
3: -14.528 dB  
7.50000 GHz  
4: -13.887 dB  
8.00000 GHz  
5: -14.213 dB  
9.00000 GHz

START 5000.000 MHz STOP 10000.000 MHz

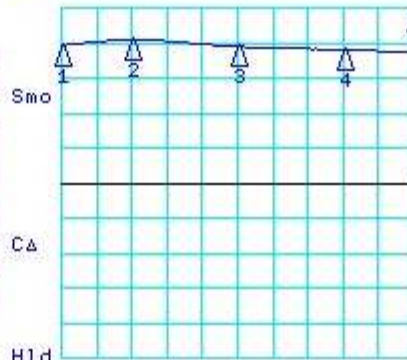
CH3 LOG 10 dB/ REF 0 dB  
S12 5: -48.001 dB 10.000 000 000 GHz



CH3 Markers  
1: -48.519 dB  
5.00000 GHz  
2: -53.481 dB  
6.00000 GHz  
3: -54.041 dB  
7.50000 GHz  
4: -50.104 dB  
8.00000 GHz  
5: -48.001 dB  
9.00000 GHz

START 5000.000 MHz STOP 10000.000 MHz

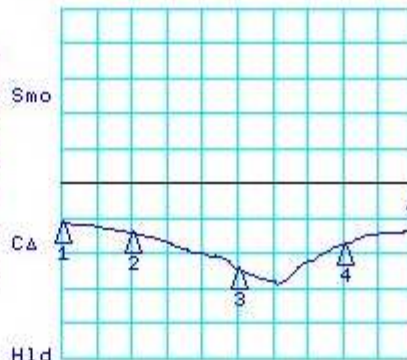
CH2 LOG 10 dB/ REF 0 dB  
S21 5: 37.343 dB 10.000 000 000 GHz



CH2 Markers  
1: 39.472 dB  
5.00000 GHz  
2: 41.056 dB  
6.00000 GHz  
3: 39.038 dB  
7.50000 GHz  
4: 38.186 dB  
8.00000 GHz  
5: 37.343 dB  
9.00000 GHz

START 5000.000 MHz STOP 10000.000 MHz

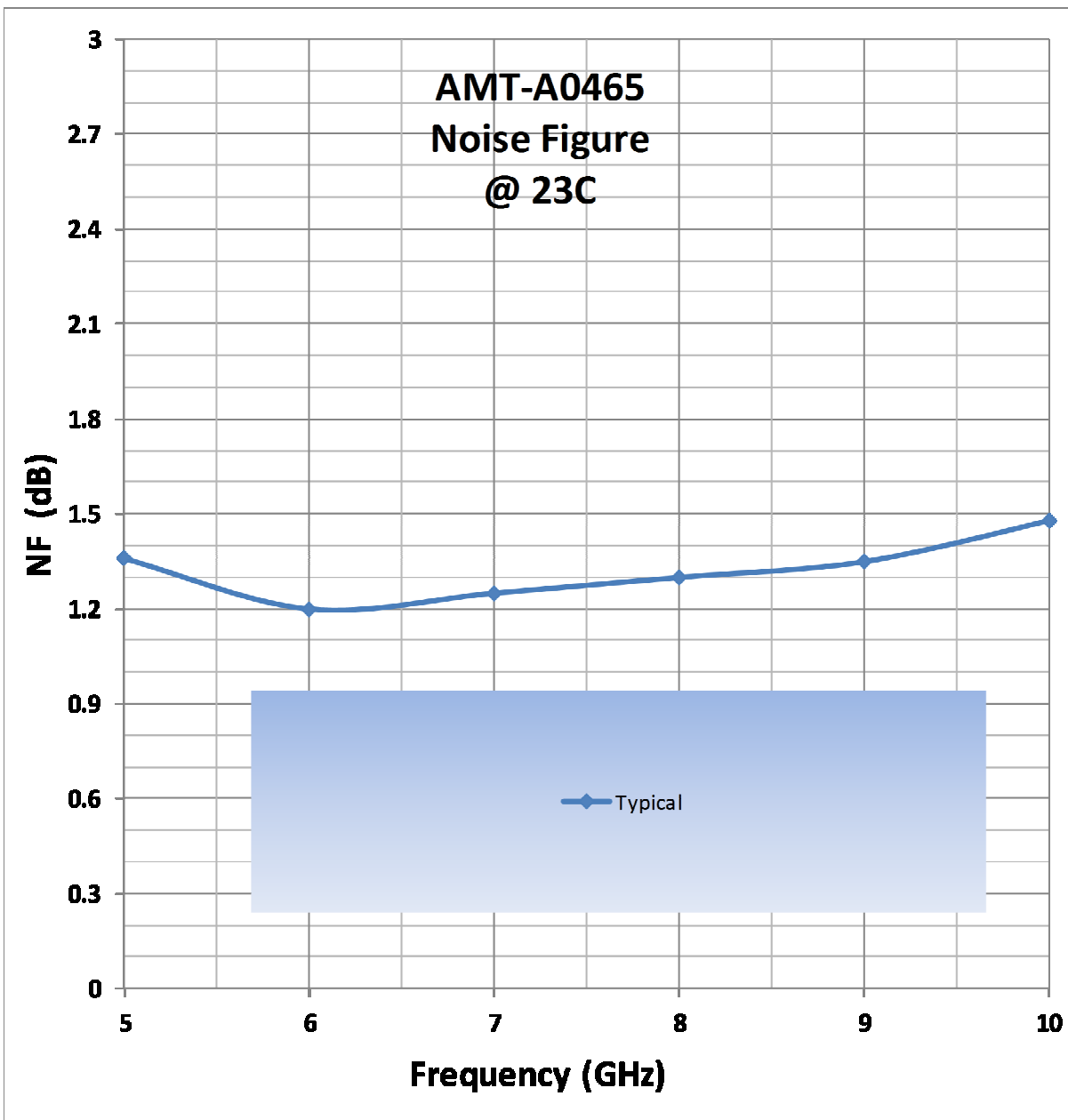
CH4 LOG 10 dB/ REF 0 dB  
S22 5: -12.779 dB 10.000 000 000 GHz



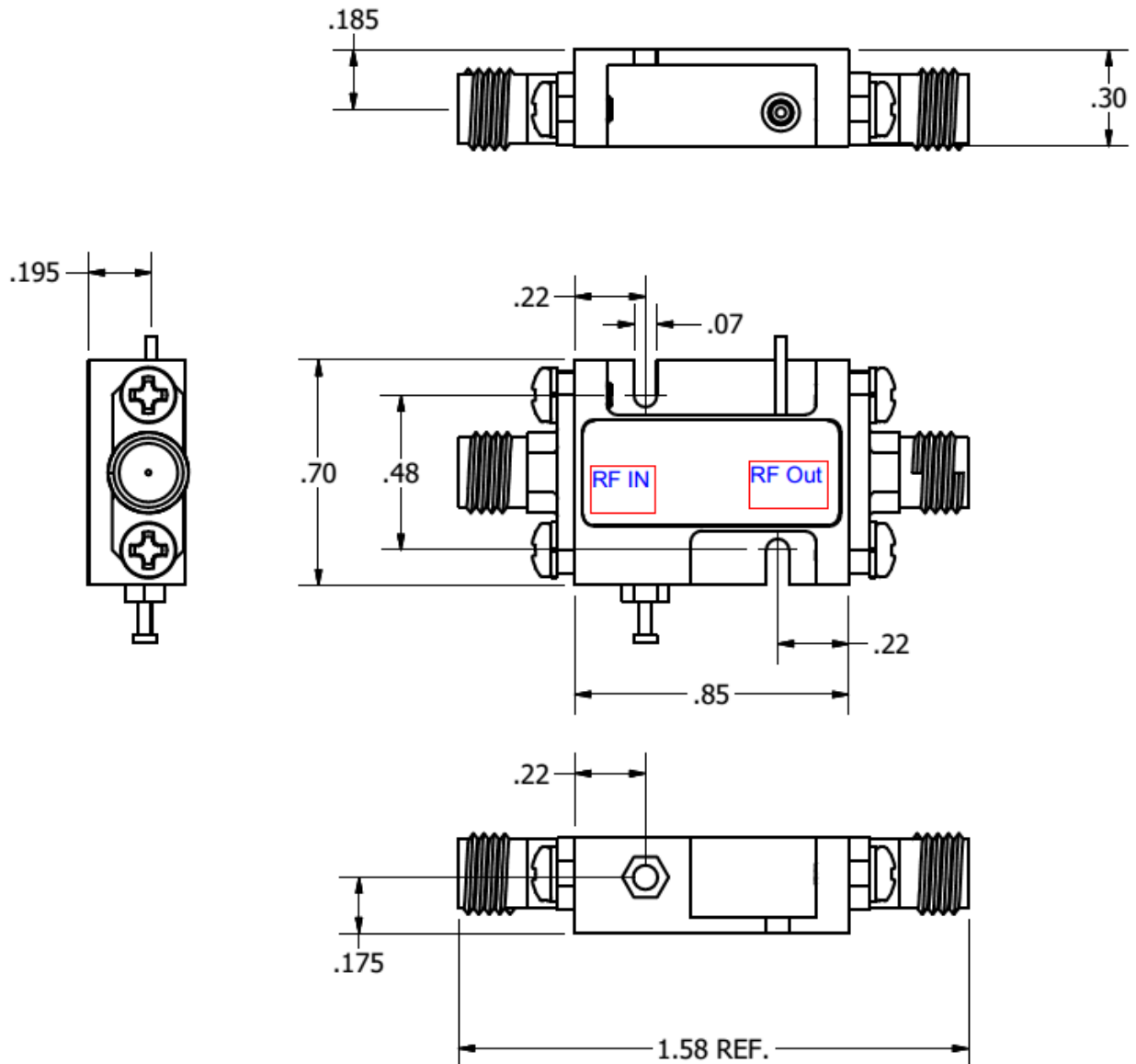
CH4 Markers  
1: -11.428 dB  
5.00000 GHz  
2: -14.140 dB  
6.00000 GHz  
3: -24.316 dB  
7.50000 GHz  
4: -17.361 dB  
8.00000 GHz  
5: -12.779 dB  
9.00000 GHz

START 5000.000 MHz STOP 10000.000 MHz

Typical Noise Figure @ 23°C



### Package Outline: M110 SMA Connectorized (inches)



Housing: Aluminum Gold over Nickel plated  
Removable SMA and Ground Slug

Model Number	Description	Hermeticity	Package
AMT-A0465	SMA Female	Non-Hermetic	Outline: M110

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**

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Registered  
Company**



**Phone: (984) 228-8001    [info@agilemwt.com](mailto:info@agilemwt.com)    [www.agilemwt.com](http://www.agilemwt.com)**

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