

AMT-A0464 26 GHz to 27 GHz Low Noise Amplifier with flat gain



Data Sheet

Features

- 26 GHz to 27 GHz Frequency Range
- Gain 21.5 dB Typical
- Gain Flatness ± 0.2 dB typical ± 1 dB max
- Matched gain from golden unit ± 1 dB max
- 1.7 dB Typical Noise Figure, 2.5 dB max
- VSWR 1.5:1 typical , 2:1 max
- P1dB + 22 dBm typical , +19 dBm minimum
- Internally Regulated, Compact Housing
- Operates from Single +8V Supply 87 mA typical
- Unconditionally Stable



Photo for Illustration only

Description

The AMT-A0464 is a high frequency low noise amplifier with flat gain, low NF in a compact size and matched gain window. The performance is achieved through the use of AMTI's proprietary matching technology. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The AMT-A0464 is ideal for use as gain stage with low noise for test equipment, Communication systems or where ultra broadband amplification and medium power are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

Applications

- Test Equipment
- Receiver
- Lab Applications
- Gain Block

MAXIMUM RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T _{MO}	° C	-20	+85
Storage Temperature - Case	T _{MS}	° C	-40	+100
RF Input power (CW)	P _{in}	dBm		+20
Die T _{Junction}	T _J	° C		+150
Positive Supply Voltage	V _{+SS}	V		+15

Appropriate Heat sink must be used Do Not apply DC to RF ports

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	26		27
Gain	Small Signal	dB	20.5	21.5	23
Gain Flatness		dB		±0.2	±1
Gain Matching	Set of Units Variations from Golden unit	dB		±0.5	±1
Noise Figure ²		dB		1.7	2.5
Output Power (P1dB)	@ 26.5 GHz	dBm	+19	+22	
OIP3	OIP3 @ 26.5 GHz Two tone F1-F2= 10MHz	dB		+26	
Spurs ³	Self generated Spurs with Pout ~ 1 dBm	dBc	<-70		
RF Input Impedance	Reference to 50 ohms VSWR			1.6:1	2:1
RF Output Impedance	Reference to 50 ohms VSWR			1.5:1	2:1
Supply Voltage Positive:		V		+ 8	
Supply Current Positive:	Small signal	mA		87	120

Notes:

1/ Unconditional Stability

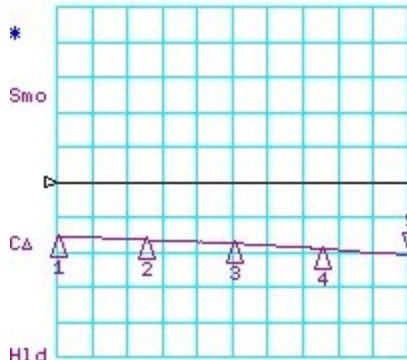
2/ Measured with Agilent/HP equipment standard manufacturer variations apply

3/ Excludes harmonics

Customized configurations of the above specifications are available

Typical S-Parameters @ 23°C

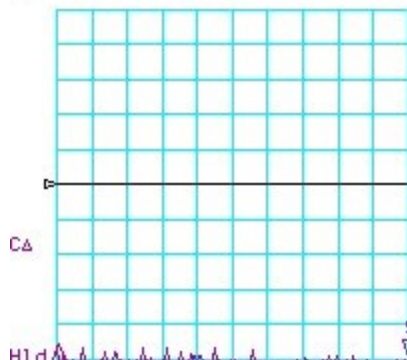
CH1 LOG 10 dB/ REF 0 dB
S11 5: -20.818 dB 27.000 000 000 GHz



CH1 Markers
1: -15.539 dB
26.0000 GHz
2: -16.394 dB
26.2500 GHz
3: -17.371 dB
26.5000 GHz
4: -18.932 dB
26.7500 GHz
5: -20.818 dB
27.0000 GHz

START 26000.000 MHz STOP 27000.000 MHz

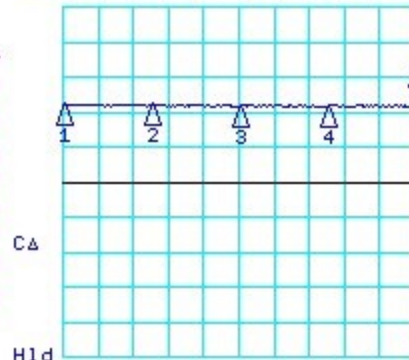
CH3 LOG 10 dB/ REF 0 dB
S12 5: -51.670 dB 27.000 000 000 GHz



CH3 Markers
1: -45.892 dB
26.0000 GHz
2: -51.664 dB
26.2500 GHz
3: -62.675 dB
26.5000 GHz
4: -65.896 dB
26.7500 GHz
5: -51.670 dB
27.0000 GHz

START 26000.000 MHz STOP 27000.000 MHz

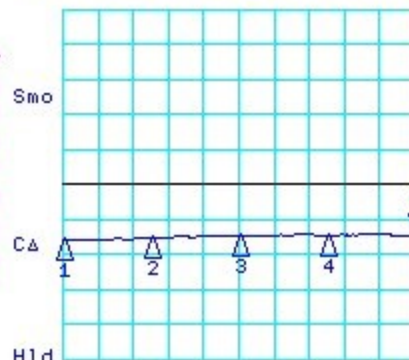
CH2 LOG 10 dB/ REF 0 dB
S21 5: 21.830 dB 27.000 000 000 GHz



CH2 Markers
1: 21.985 dB
26.0000 GHz
2: 21.957 dB
26.2500 GHz
3: 21.587 dB
26.5000 GHz
4: 21.732 dB
26.7500 GHz
5: 21.830 dB
27.0000 GHz

START 26000.000 MHz STOP 27000.000 MHz

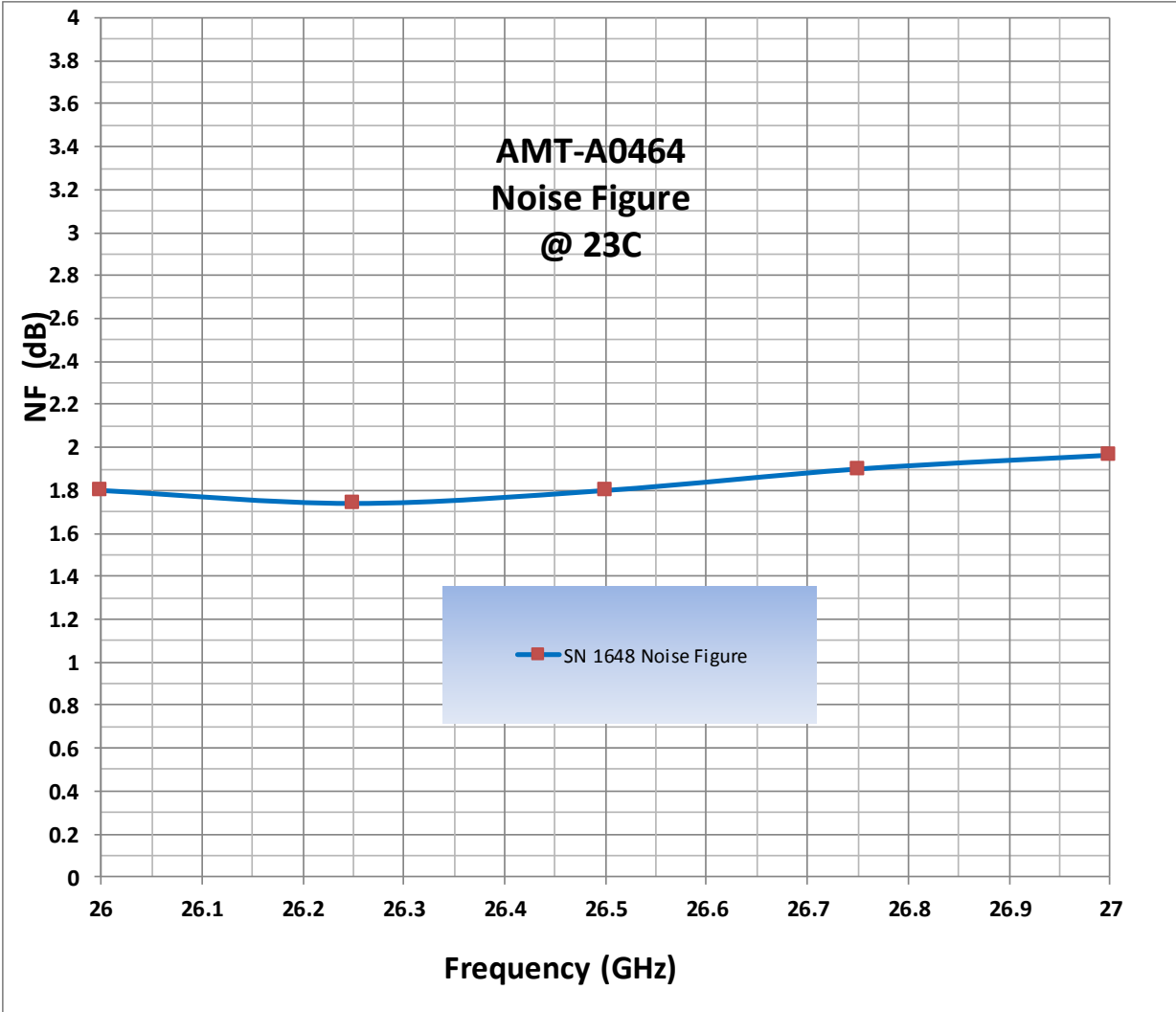
CH4 LOG 10 dB/ REF 0 dB
S22 5: -14.506 dB 27.000 000 000 GHz



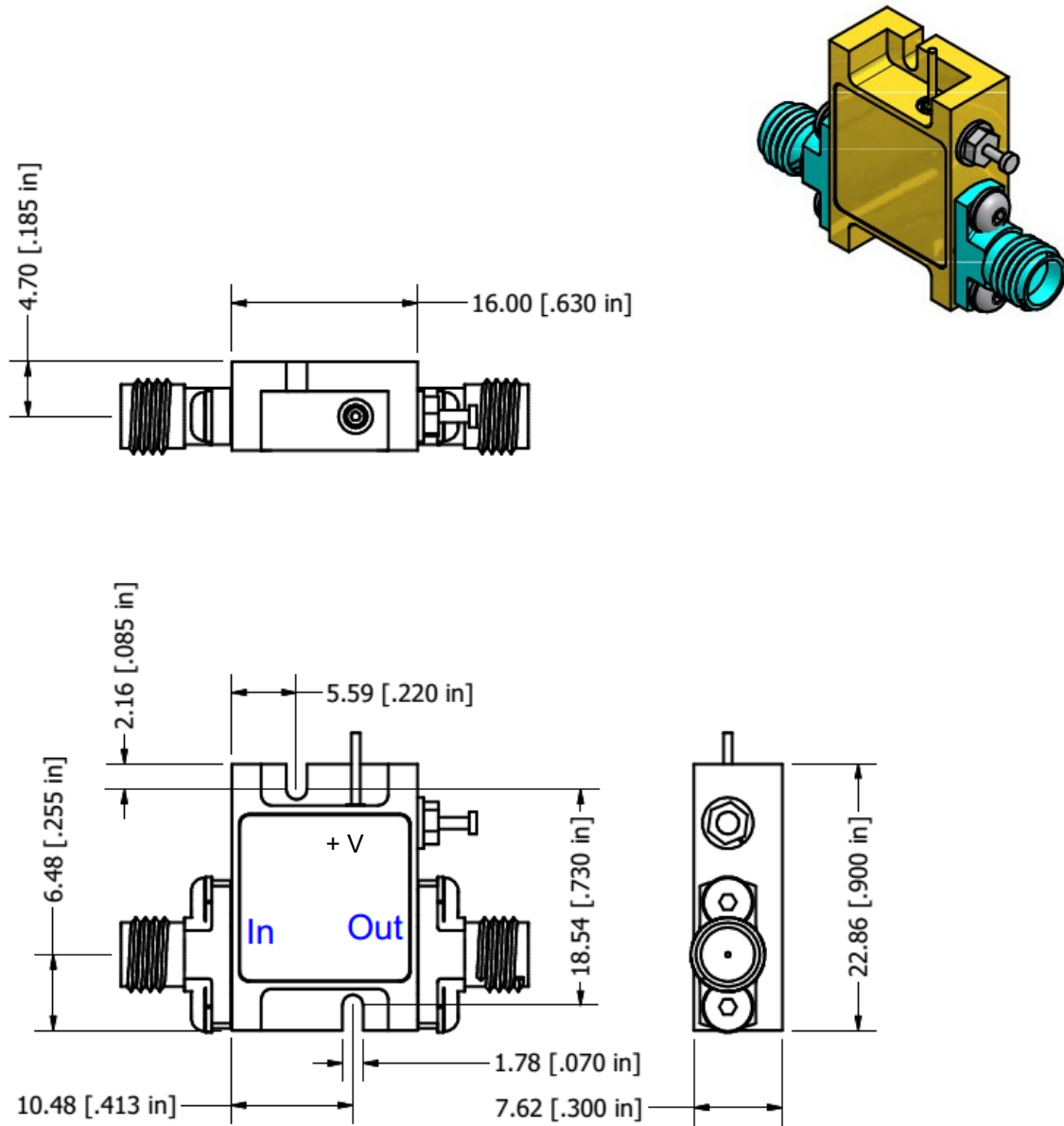
CH4 Markers
1: -15.976 dB
26.0000 GHz
2: -15.262 dB
26.2500 GHz
3: -14.647 dB
26.5000 GHz
4: -14.486 dB
26.7500 GHz
5: -14.506 dB
27.0000 GHz

START 26000.000 MHz STOP 27000.000 MHz

Typical Noise Figure @ 23°C



Package Outline M084: 2.92 mm Female Connectors (inches)



Field replaceable 2.92 mm Connectors

Housing material: Aluminum Plating: Gold over Nickel

Note: The unit must be attached to proper heat sink

Model Number	Description	Hermeticity	Package
AMT-A0464	2.92mm 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

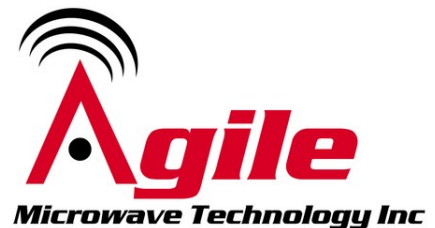
Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

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