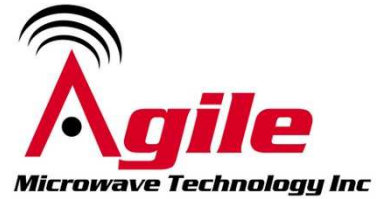


AMT-A0414W 35 GHz to 36 GHz WR-28 Input Ka Band Low Noise Amplifier with Integrated Limiter



Data Sheet

Features

- 35 GHz to 36 GHz Frequency Range
- Gain 40 dB Typical
- Gain Flatness ± 0.5 dB Typical
- 3 dB Typical Noise Figure 3.5 dB max
- VSWR 1.8:1 typical 2.2:1 max
- P1dB +19.5 dBm typ
- Integrated Limiter 2W CW /10W pulsed
- Internally Regulated
- Operates from Single +12 Supply
- Compact Size with Custom WR-28 Input



Description

The AMT-A414W is a Low Noise amplifier with WR-28 waveguide Input and an 2.92mm female at the RF output in a compact size. The performance is achieved through the use of AMTI's proprietary matching technology. The amplifier I/Os are Internally matched to 50 Ohms. The AMT-A0414W is ideal for use as low noise input stage for Communication systems or where ultra broadband amplification are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

Applications

- Receiver LNA
- Radar
- Phased Array
- Lab Applications
- Wideband Gain Block

MAXIMUM RATINGS¹

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T_{MO}	$^{\circ}C$	-40	+85
Storage Temperature - Case	T_{MS}	$^{\circ}C$	-40	+100
RF Input power (CW)	P_{in}	dBm		+33
Die $T_{Junction}$	T_J	$^{\circ}C$		+150
Positive Supply Voltage	V_{+SS}	V		+15

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

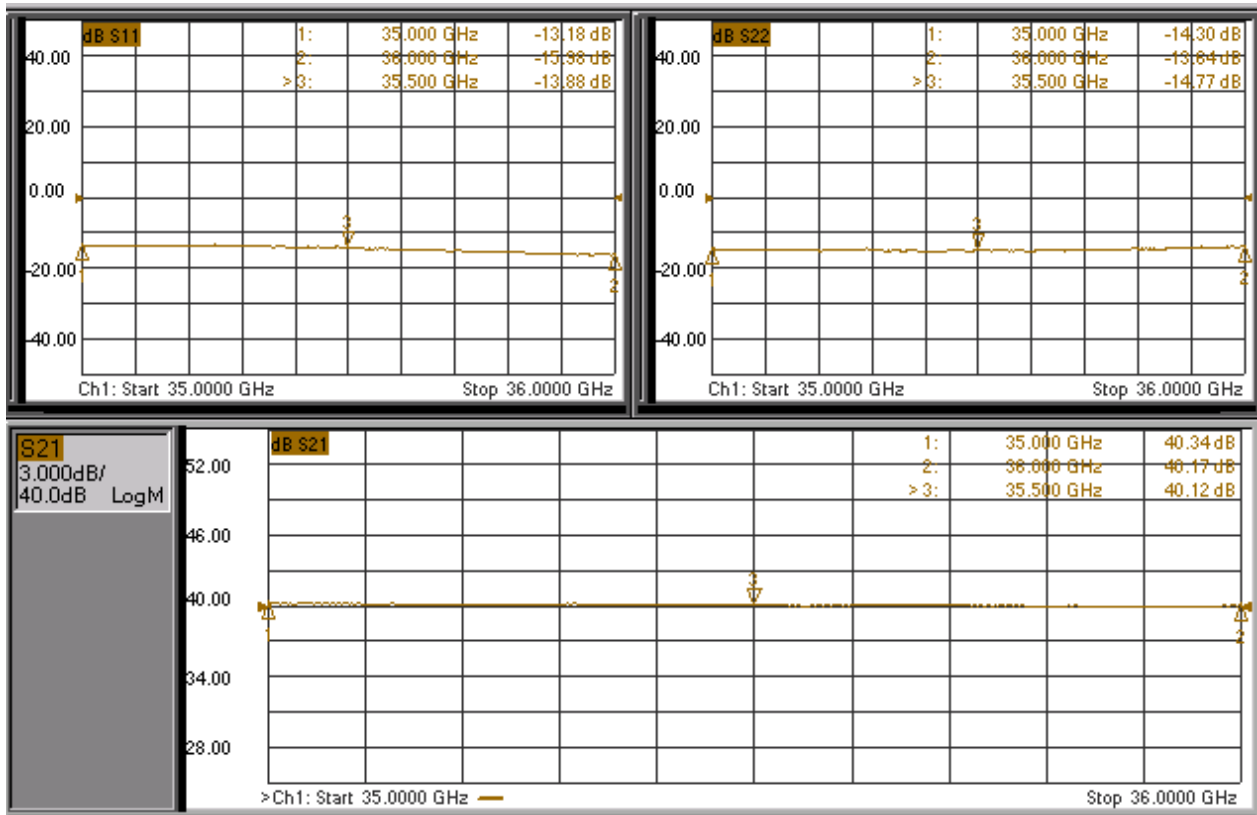
Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	35		36
Gain	Small Signal	dB	38	40	44
Gain Flatness		dB		±0.5	±0.9
Noise Figure		dB		3	3.5
Output Power (P1dB)	@ 36 GHz	dBm	+19	+19.5	
OIP3	OIP3 @ 36 GHz Two tone F1-F2= 10MHz	dB	27		
RF Input power Limiter	No damage CW for short period	dBm	Up to max +33 dBm (2W)		
RF Input power Limiter	No damage Pulsed 10% duty cycle 20 uS max pulse length	dBm	Up to max +40 dBm (10W)		
RF Input Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
RF Output Impedance	Reference to 50 ohms VSWR			1.8:1	2.2:1
Supply Voltage Positive:	Small signal	V		+ 12	
Supply Current Positive:		mA		350	400

Notes:

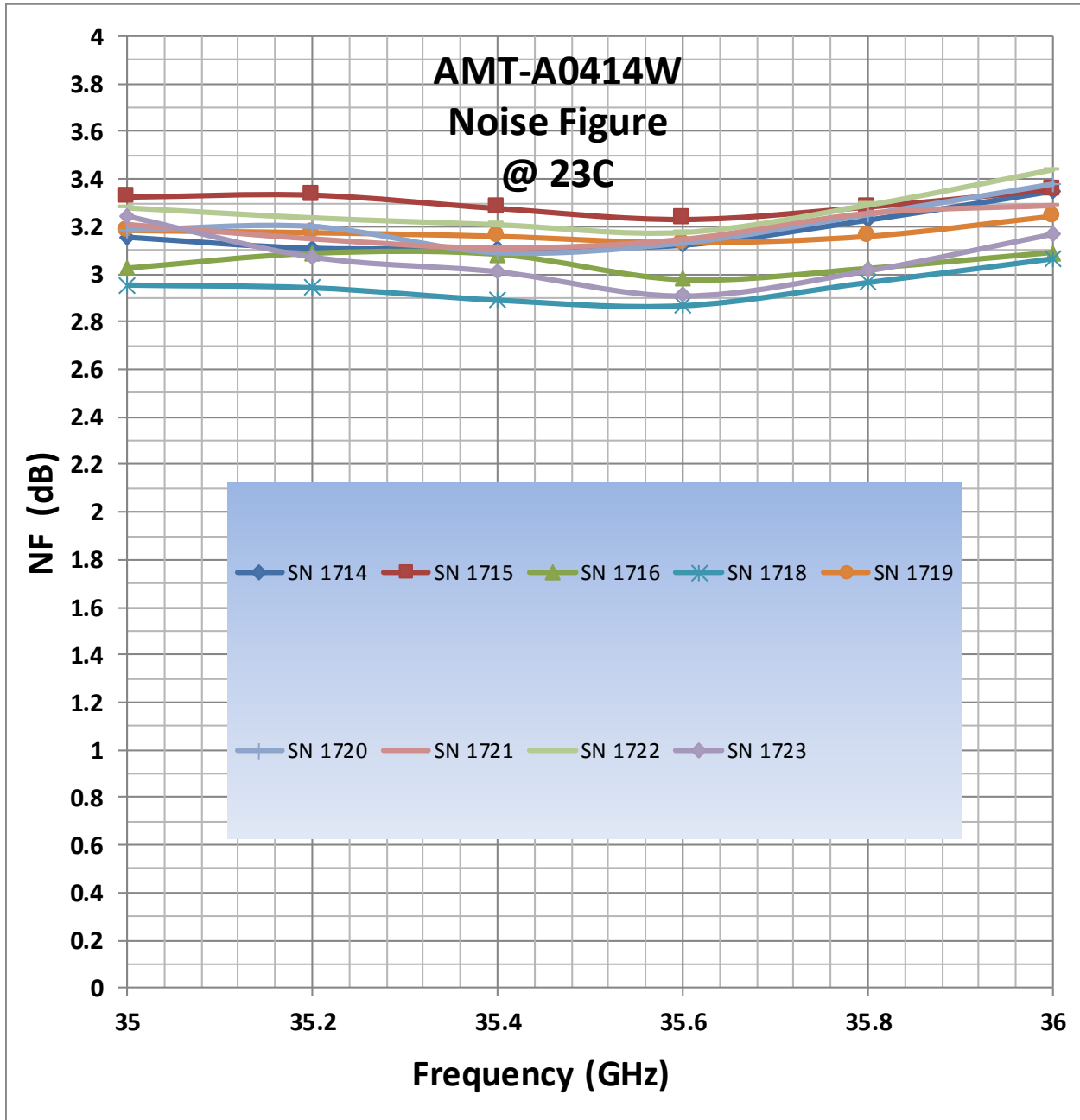
1/ Unconditional Stability

Customized configurations of the above specifications are available

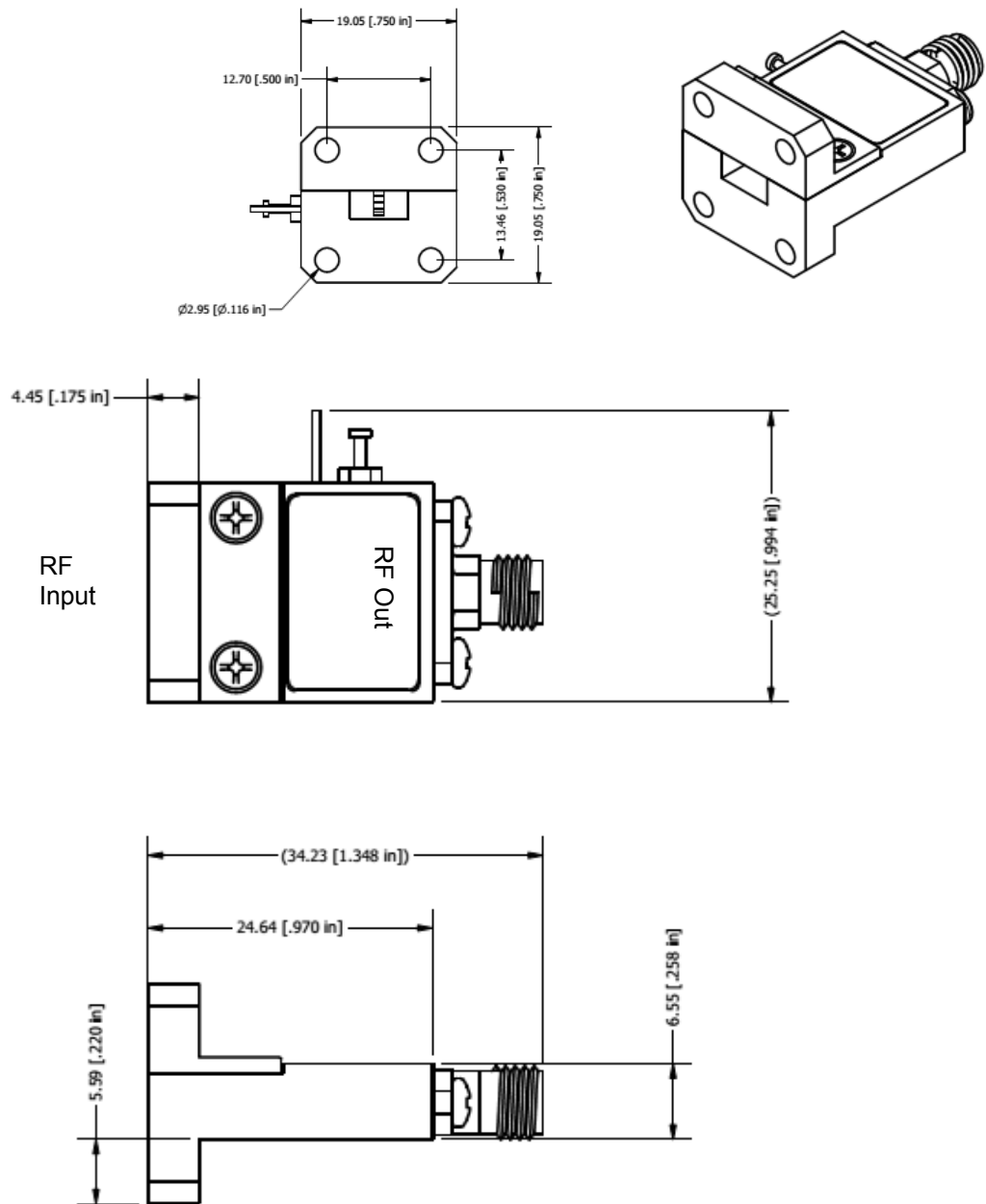
Typical S-Parameters @ 25°C



Typical Noise Figure @ 23°C



Package Outline M414: WR-28 waveguide Input (inches)



Field replaceable 2.92mm SMA Connector at output

Model Number	Description	Hermeticity	Package
AMT-A0414W	WR-28 RFin 2.92mm Female RFout	Non-Hermetic	Outline: M414

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.

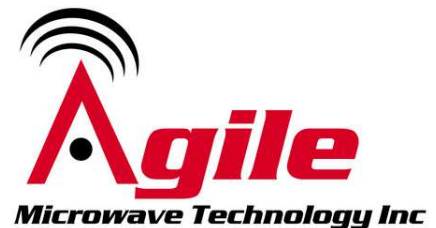
- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others
- Integrated: Filters, Switches, Limiter, Digital 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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