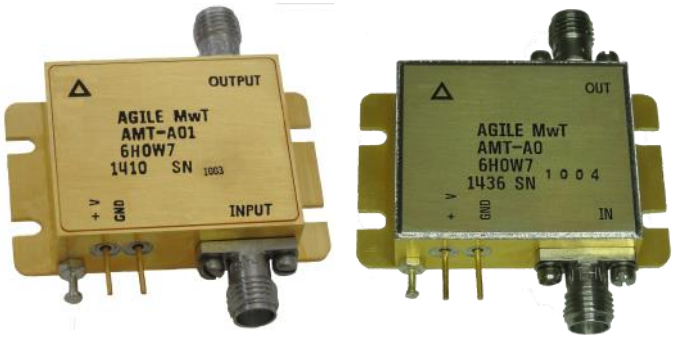
AMT-A0253 0.1 GHz to 20 GHz
Broadband LNA with Medium Power & Flat Gain

Data Sheet

Features

- 0.1 GHz to 20 GHz Frequency Range
- Typical P1dB power > +22 dBm
- Gain 33 dB Typical
- Gain Flatness ± 1.5 dB Typical
- 2.7 dB Typical Noise Figure
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable
- Available in Hermetic Laser sealed version



Laser Sealed Hermetic

Description

The AMT-A0253 is a +22 dBm P1dB Broadband medium power amplifier with Low Noise Figure 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-A0253 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
- Communication Systems
- EW Systems
- Lab Applications
- Radar

MAXIMUM RATINGS[1] **EAR99 NLR**

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T_{MO}	° C	-40	+85
Storage Temperature - Case	T_{MS}	° C	-40	+125
RF Input power (CW)	Pin	dBm		+15
Die $T_{Junction}$	T_J	° C		+150
Positive Supply Voltage	V_{+SS}	V		+15

Appropriate Heat sink must be used

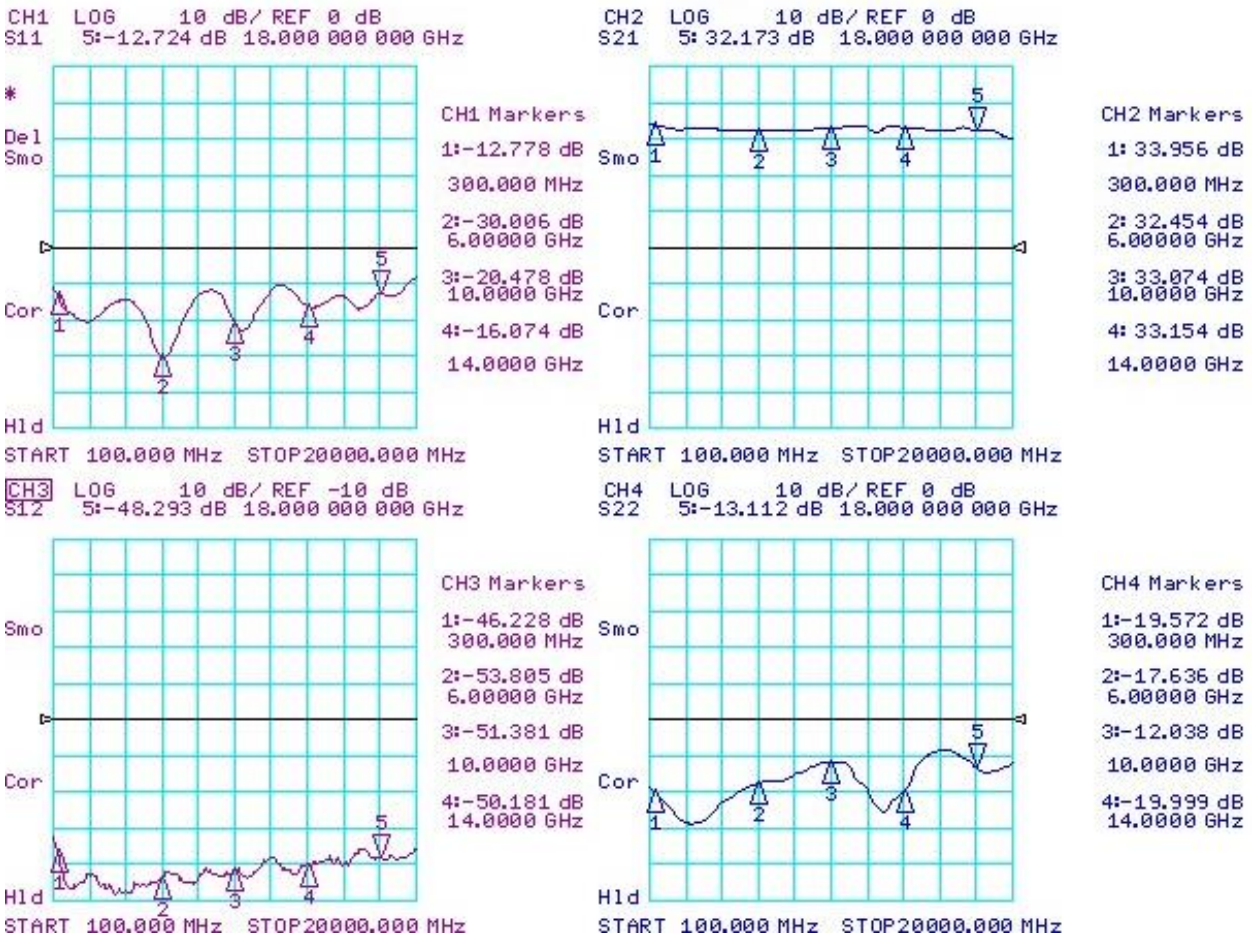
1.Stresses above those listed under "Absolute Maximum Rating" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL SPECIFICATIONS @ 23ºC

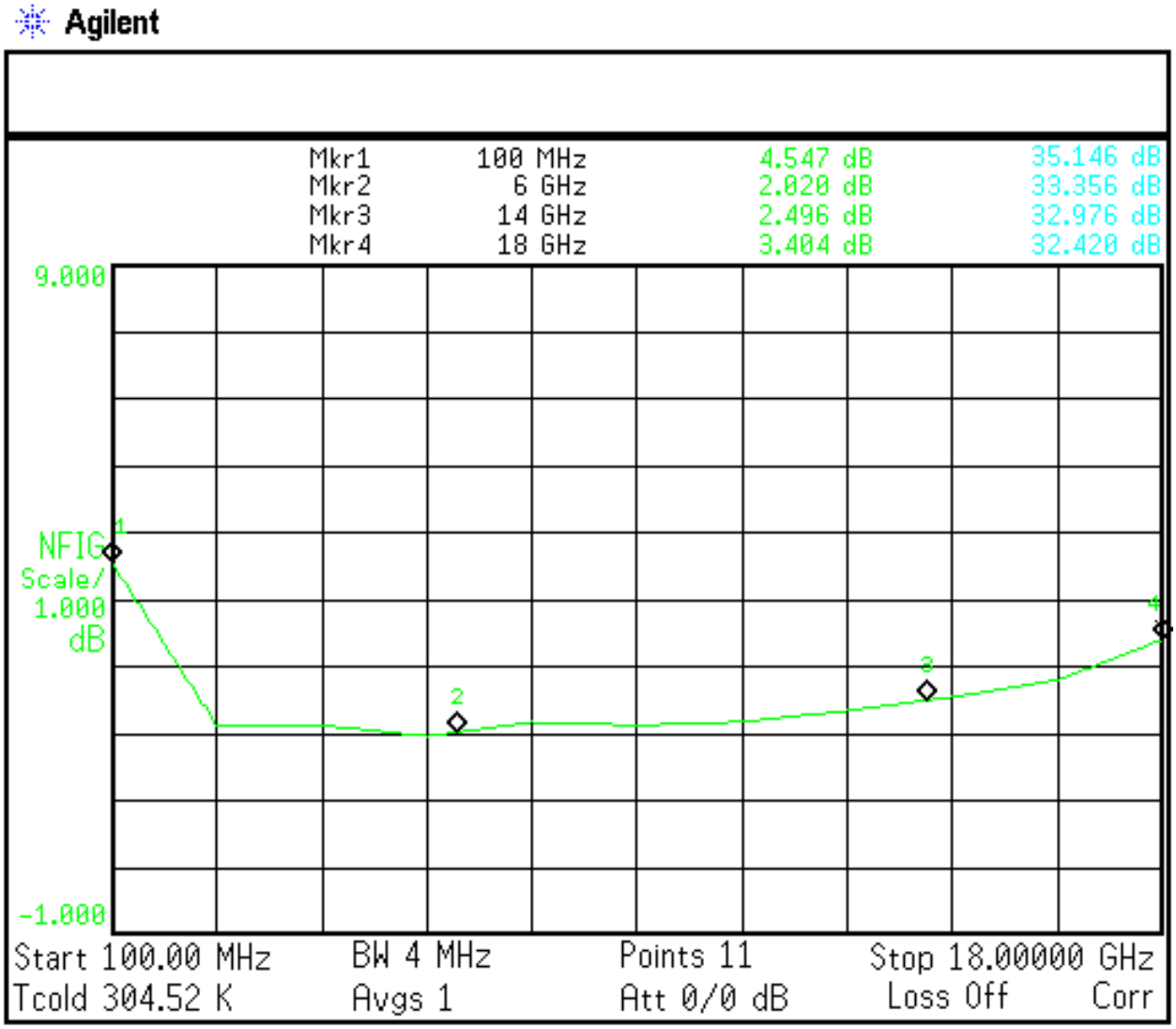
Parameter	Conditions	Units	MIN	Typical	MAX
Frequency Range		GHz	0.1		20
Gain[2]	Small Signal	dB	29	33	
Gain Flatness[2]		dB		±1.5	±2.5
Noise Figure[2]	0.1 to 20 GHz	dB		2.7	5
Output Power (P1dB)	0.1 to 16 GHz, measured @10GHz	dBm	+20	+22	
Output Power (P1dB)	16 to 20 GHz	dBm	+19.5	+21	
OIP3	OPI3 @ 10 GHz Two tone F1-F2= 10MHz	dB		30	
RF Input Impedance[2]	Reference to 50 ohms VSWR			1.8:1	2.3:1
RF Output Impedance[2]	Reference to 50 ohms VSWR			1.8:1	2.3:1
Supply Voltage Positive:		V		+12	
Supply Current Positive:	Small signal	mA		270	350

Notes:
1/ Unconditional Stability
2/ Maybe higher below 300 MHz and above 18 GHz
NF Above 18 GHz Guaranteed by design
Customized configurations of the above specifications are available

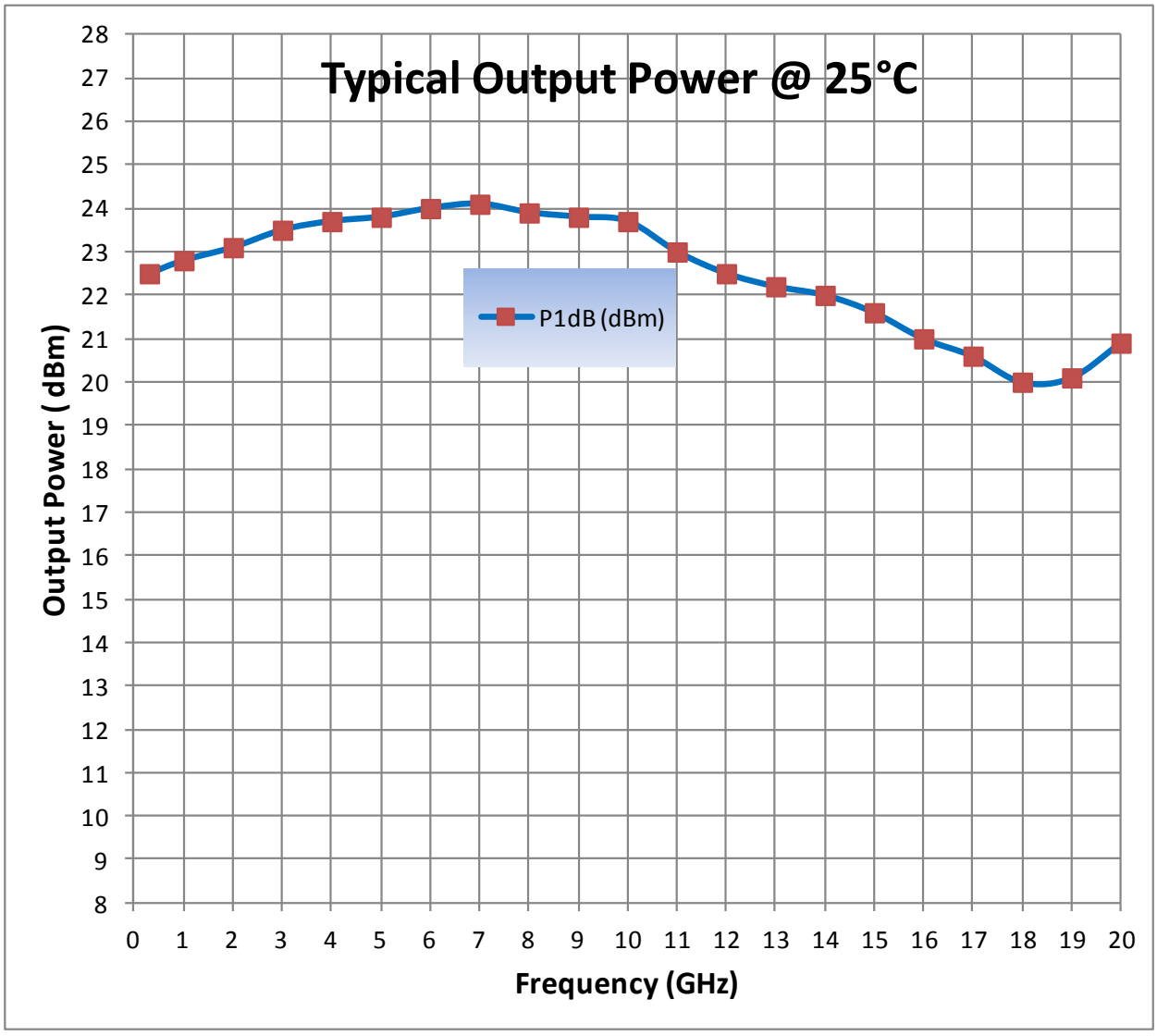
Typical S-Parameters @ 25ºC



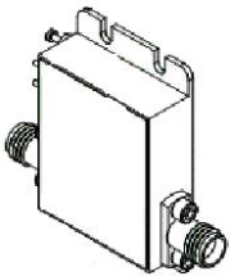
Typical Noise Figure @ 23ºC

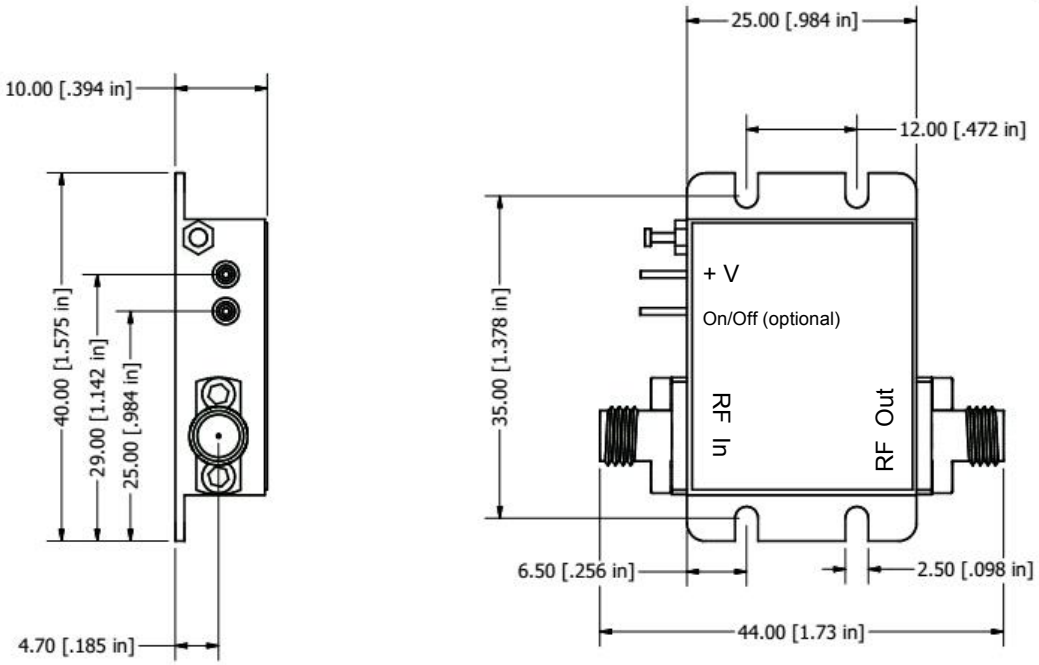


Typical P1dB @ 23ºC



Package Outline M020: 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-A0253	SMA Female	Non-Hermetic	Outline: M020
AMT-A0253-H	SMA Female	Hermetic Laser Weld Tested to Leak Rate $<2.0x10^{-8}$	Outline: M020

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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