BROADBAND LOW NOISE AMPLIFIER
ABL1800-01-1525

Features:

- Broad band operation from 0.1 to 18GHz with low noise figure
- Low VSWR, unconditional stable
- SMA female connector RF I/O
- Single DC power supply required, built-in voltage regulator and reverse polarity protection
- Operating temperature -40~+85°C, storage temperature -55~+85°C

General Description

ABL1800-01-1525 is a single stage GaAs MMIC based broadband low noise amplifier module operating in the frequency range from 0.1 to 18.0GHz. The amplifier provides 15dB of small signal gain with 2.5 dB typical noise figure and excellent gain flatness. The amplifier requires only a single positive DC power supply. Its built-in DC voltage regulator and reverse polarity protection circuitry allows the amplifier to function at different DC supply voltages without affecting the RF performances.

Electrical Specifications

Parameters	Units	Specifications		
		Minimum	Typical	Maximum
Frequency Range	GHz	0.1		18.0
Nominal Gain @25°C base plate temperature	dB	13.0	15.0	17.0
Gain flatness	dB		±1.0	±1.5
Gain Variation over Temperature Range	dB		±0.75	±1.0
Noise Figure @25°C base plate temperature 0.1~3.0GHz 3.0~15.0GHz 15.0~18.0GHz	dB		 3.5 2.5 3.0	 5.0 3.5 4.0
P-1dB Compression Point	dBm	14.0	15.0	
Psat at Output	dBm	15.0	19.0	
Output IP3	dB m	24.0	27.0	
Reverse Isolation	dB	28.0		
Input VSWR	-		1.5:1	2.0:1
Output VSWR	-		1.7:1	2.0:1
Spurious	dBc			-60.0
Operating Temperature	°C	-40.0		+85.0
Survival Temperature	°C	-45.0		+125.0
DC Power Supply Voltage	V	+10.0	+12.0	+15.0
DC Power Supply Current	mA	60.0	70.0	90.0
RF In/Out connectors		50 ohm SMA female		
DC Input Connector		Feedthru Pin		
Size	inches	1.20×1.00×0.40		

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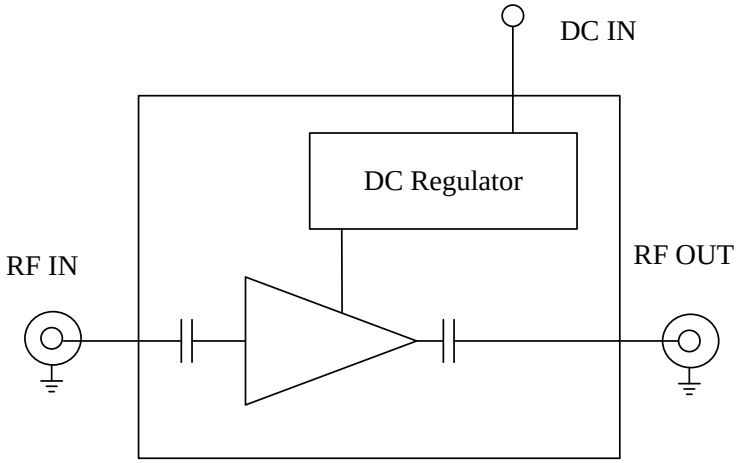
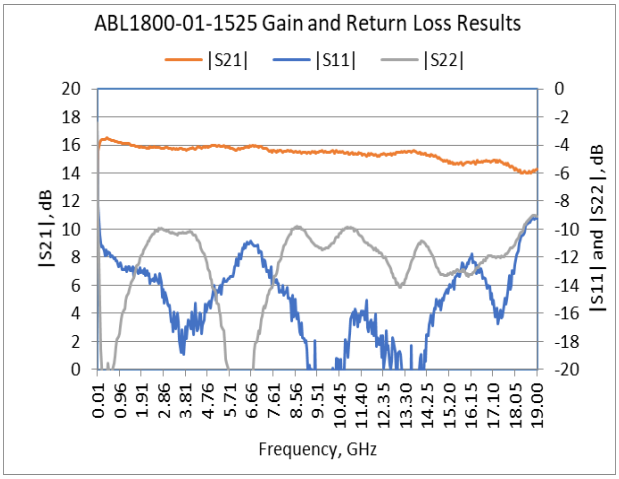
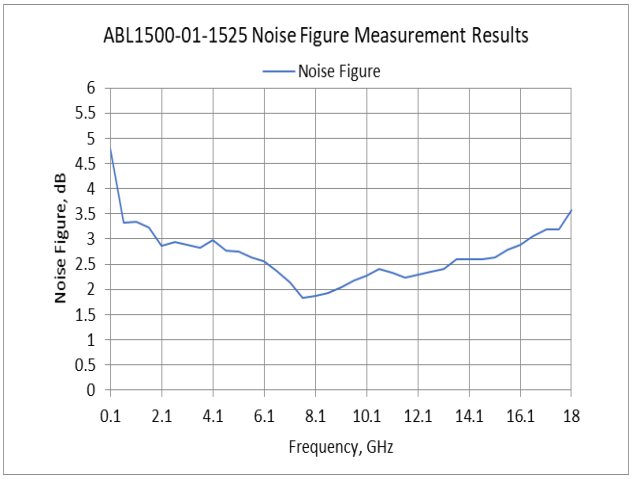
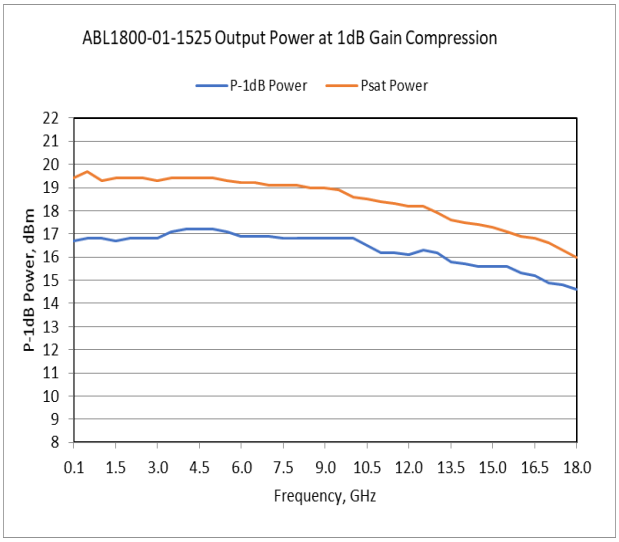
Functional Diagram

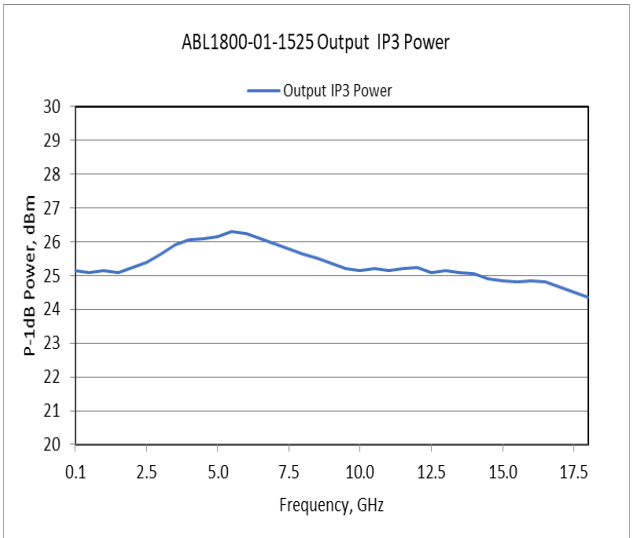


Typical Test Results:









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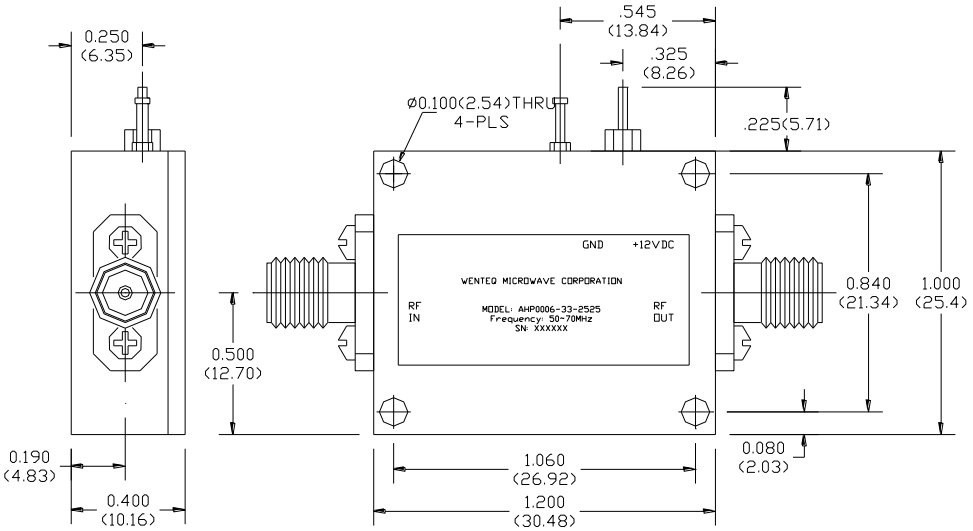
Mechanical Structure:



Note: All units in inches (mm).

Housing Material and Surface Finish:

Body and cover material: aluminum
Surface finish: nickel plated
Connector material: Stainless Steel
Connector surface finish: Passivated

Absolute Maximum Ratings

DC Voltage	+16.0V
RF Input Power	+20 dBm
Storage Temperature	-55~+125°C
Operating Temperature	-40~+85°C

Revision History:

Revision	Date	Description	Comments
A00	12/12/2019	Initial Release	

Electrostatic sensitive device, please observe precautions for handling this amplifier.

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