INPUT PROTECTED BROADBAND LNA
ABL1800-01-3330DP

Features:

- Wide band operation from 0.1GHz to 18.0GHz
- Input PIN diode limiter protected to avoid accidental input over drive damage
- SMA female connector RF I/O
- Single DC power supply required, built-in voltage regulator and reverse polarity protection circuitry
- Operating temperature -40~+85°C, storage temperature -55~+85°C

General Description

ABL1800-01-3330DP is a two stage GaAs pHEMT MMIC based broadband low noise amplifier module with input PIN diode limiter protection. The amplifier operates in the frequency range from 100MHz to 18.0GHz and provides 33dB of small signal gain, 3.0dB typical noise figure. It requires only a single positive DC power supply to function. Its built-in DC voltage regulator and reverse polarity protection circuitry allows the amplifier to functional 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	dB	30.0	33.0	36.0
Noise Figure 0.1~2.5GHz 2.5~16.5GHz 16.5~18.0GHz	dB		 4.0 3.0 3.5	 5.5 4.5 5.5
P-1dB Compression Point 0.1~12.0GHz 16.0~18.0GHz	dBm	 20.0 18.0	 23.0 20.0	
Output Psat	dBm	23.0	25.0	
Output IP3	dB m	24.0	30	
Gain flatness	dB		+/-1.5	+/-2.0
Gain Variation over Temp.	dB		+/-2.0	
Reverse Isolation	dB	40.0	50.0	
Input No Damage Power	dBm	+30.0		
Input VSWR	-		1.5:1	2.0:1
Output VSWR	-		1.8:1	2.5:1
Spurious	dBc			-70.0
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	240.0	280.0	350.0
RF In/Out connectors		50 ohm SMA female		
DC Input Connector		Feedthru Pin		
Size	inches	1.50×1.0×0.4		

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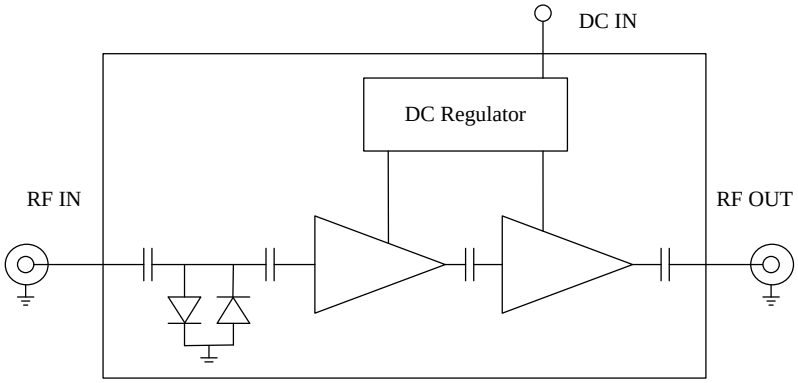
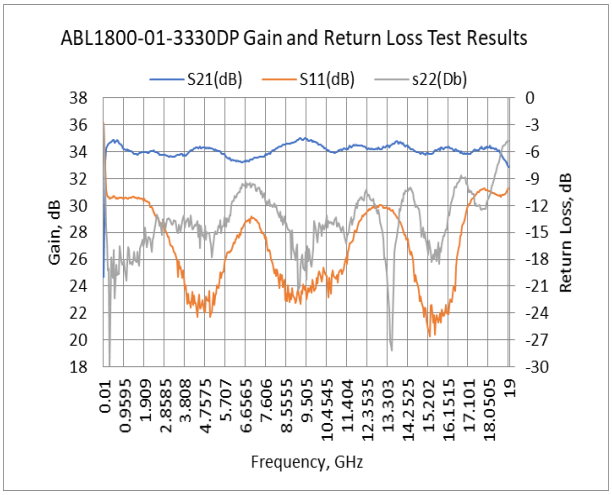
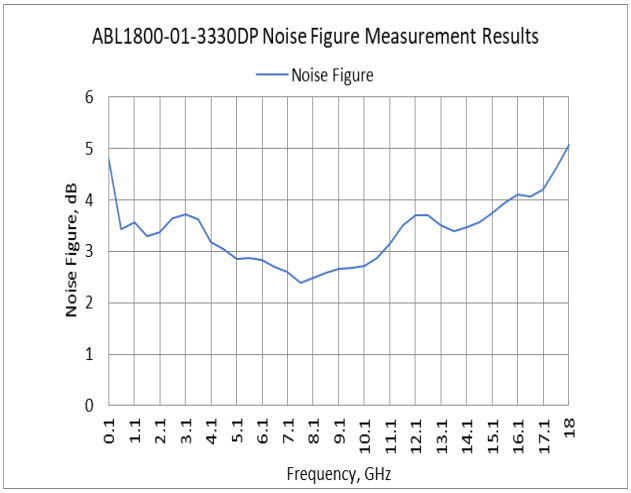
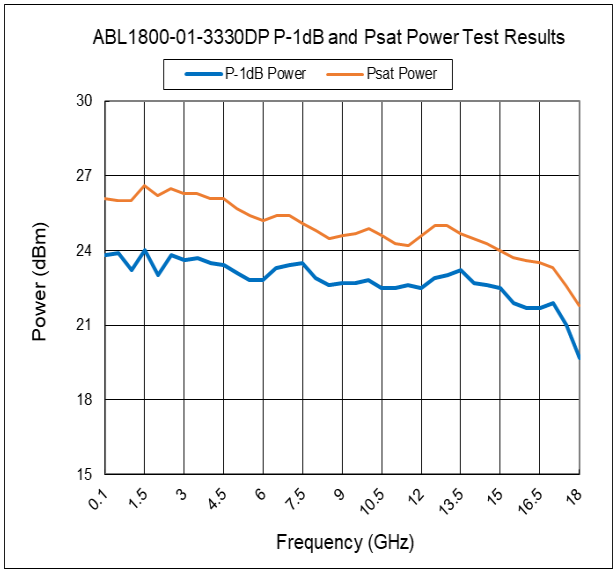
Functional Diagram

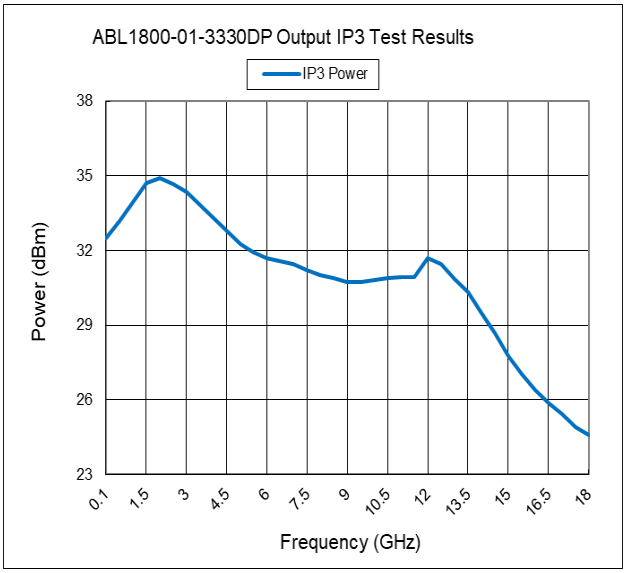


Typical Test Results









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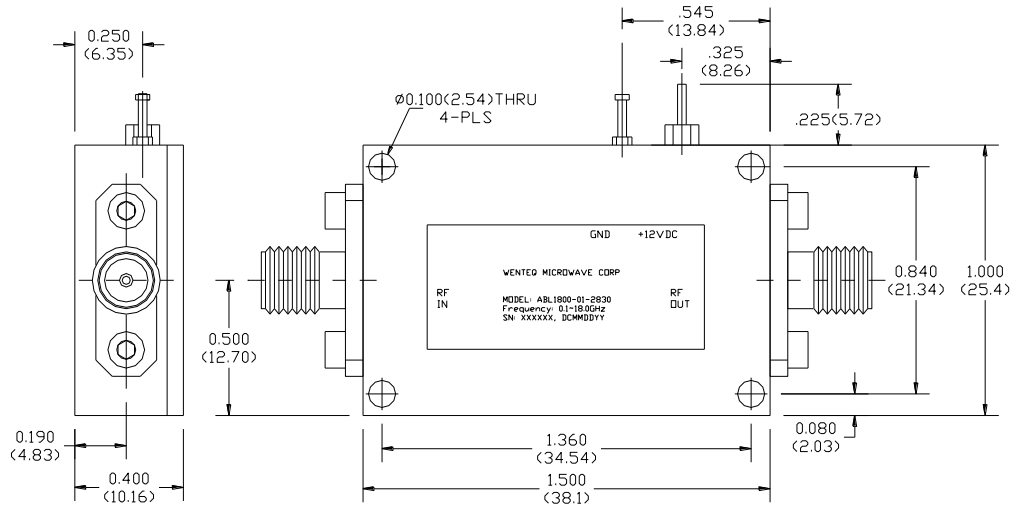
Mechanical Structure:



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	+18V
RF Input Power	+30 dBm
Storage Temperature	-55~+125°C
Operating Temperature	-40~+85°C

Revision History:

Revision	Date	Description	Comments
A00	09/19/2019	Initial Release	

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

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