BROADBAND LOW NOISE AMPLIFIER
ABL1800-01-4525

Features:

- Broad band, low noise, high gain
- Low VSWR, unconditional stable
- SMA female connector RF I/O
- Single DC power supply required
- Optional heatsink available
- Operating temperature -40~+85°C, storage temperature -55~+85°C

General Description

ABL1800-01-4525 is a three stage GaAs pHEMT MMIC based broadband low noise amplifier module operating in the frequency from 100MHz to 18.0GHz. The amplifier provides 45dB of small signal gain with 2.5dB typical noise figure at 10GHz. The amplifier offers excellent gain flatness, as well as good VSWR at both input and output. It requires only a single positive DC power supply. Its built-in DC voltage regulator allows the amplifier to functional at different DC supply voltages without affecting the RF performances.

Electrical Specifications

Parameters		Specifications		
		Minimum	Typical	Maximum
Frequency Range	GHz	0.1		18.0
Nominal Gain @25°C base plate temperature	dB	41.5	45.0	48.5
Noise Figure 0.1~0.5GHz 0.5~15.0GHz 15.0~18.0GHz	dB		 4.0 2.5 3.5	 6.5 3.5 4.5
P-1dB Compression Point	dBm	+18.0	+20.0	
Psat at Output	dBm	+19.0	+22.0	
Output IP3	dB m	+25.0	+30.0	
Gain flatness	dB		+/-1.75	+/-2.5
Gain Variation over Temp.	dB		+/-2.5	
Reverse Isolation	dB	50.0		
Input VSWR	-		1.5:1	2.2:1
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	400.0	450.0	500.0
RF In/Out connectors		50 ohm SMA female		
DC Input Connector		Feedthru Pin		
ABL1800-01-4525 amplifier without heatsink	inches	1.90×1.00×0.40		
ABL1800-01-4525-X1 Amplifier with heatsink	inches	5.00×3.00×2.50		

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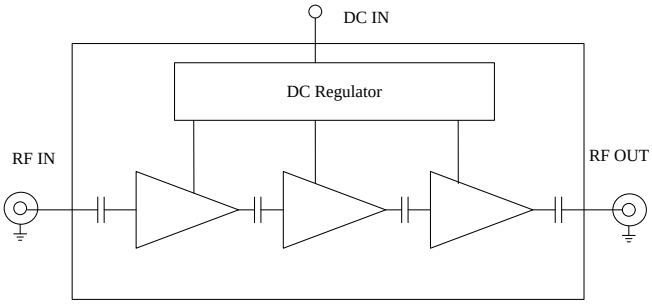
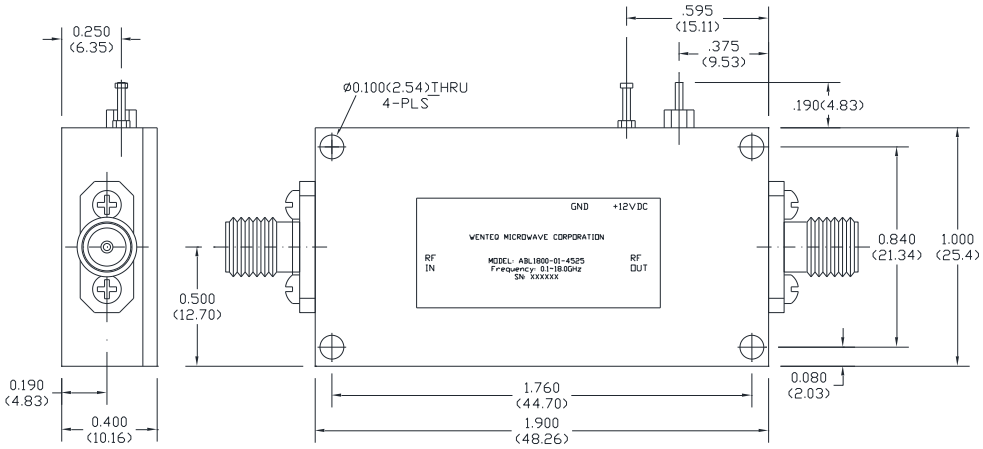
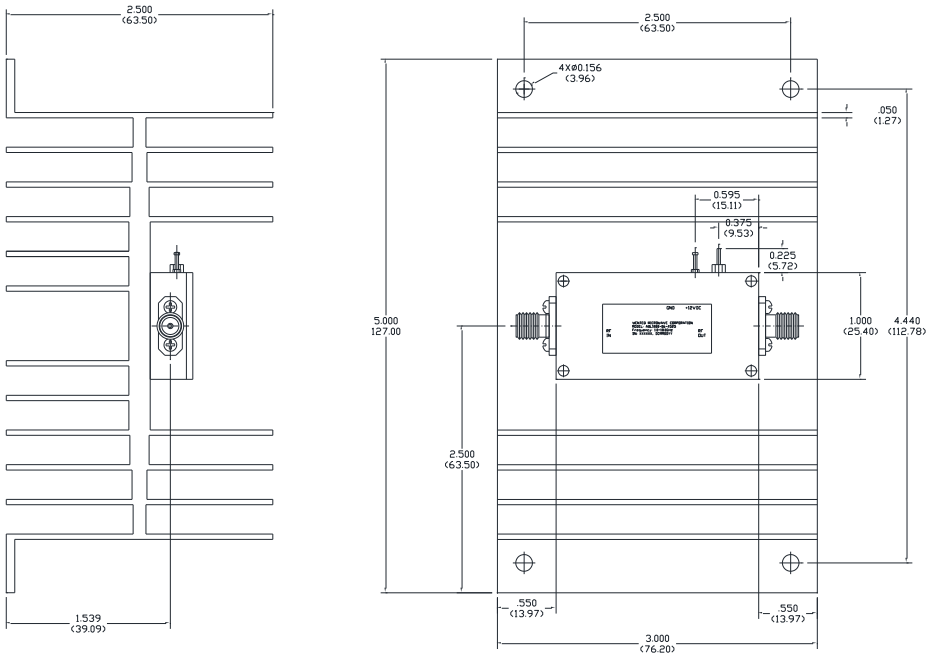
Functional Diagram



Mechanical Structure:



(a) ABL1800-01-4525 amplifier without heatsink



(b) ABL1800-01-4525-X1 amplifier with heatsink

Note: All units are in inches(mm), and all tolerances are +/-0.005 inch unless otherwise specified

Housing Material and Surface Finish:

Body and cover material: aluminum
Surface finish: nickel plated
Connector material: Stainless Steel
Connector surface finish: Passivated
Heatsink material: Aluminum, surface finish: Black anodized

Absolute Maximum Ratings

DC Voltage	+18V
RF Input Power	+15 dBm
Storage Temperature	-55~+125°C
Operating Temperature	-40~+85°C

WARNING: This device is electrostatic sensitive, please observe precautions for safe handling of this amplifier.

WARNING: This product can expose you to chemicals including Nickel (Metallic) and Gallium Arsenide which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to **www.P65warnings.ca.gov**.