Wideband LNA

WL1008-L / WL2208-L
WL1015-L / WL2215-L

RFHIC

Product Features

- GaAs p-HEMT chip on board
- No matching circuit needed
- High Maximum input power(+25dBm)
- High IP3 & Low Noise
- Single Supply Voltage (+5V)
- Surface Mount Hybrid Type
- Tape & Reel Packaging
- Small Size, High Heatsink
- Alumina Substrate
- Pb Free / RoHS Standard

Applications

- 2G & 3G Repeater
- Base Station
- PCS, CDMA, W-CDMA
- GSM, DCS, UMTS
- RF Sub-Systems

Package : CP-16A

Descriptions

RFHIC's LOW Noise Amplifier series are all hybrid LNA type products which includes all matching for the convenience of customers. WL series are a wideband LNA used for up to 50~2200MHz. The structure of the device is built with GaAs p-HEMT die attached on a ceramic thick film substrate. The device is still smaller than the area one would use for the application notes all together. Depending on the part number, one can use this in different frequency applications. All LNA hybrids are possible to have custom frequency & spec without any additional NRE cost involved.
All RFHIC products are RoHS compliant.

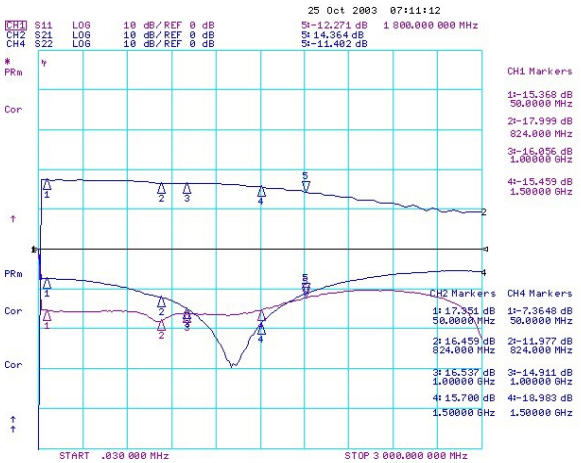
Electrical Specifications

Parameter	Units	WL1008-L	WL2208-L	WL1015-L	WL2215-L
Frequency Range	MHz	50~1000	50~2200	50~1000	50~2200
Small Signal Gain (S_{21})	dB	16	15	16	15
Gain Flatness	dB	±1.0	±2.0	±1.0	±2.0
Input Return Loss (S_{11})	dB	-15	-10	-15	-10
Output Return Loss (S_{22})	dB	-5	-5	-5	-5
1dB Compression Point (P_1dB)	dBm	19	20	21	21
Output 3rd Order Intercept Point (OIP3) (TYP.)	dBm	31	31	35	35
Noise Figure (TYP.)	dB	1.5	1.5	1.7	1.7
DC Supply Current (Vdc=+5V)	mA	100	100	160	160

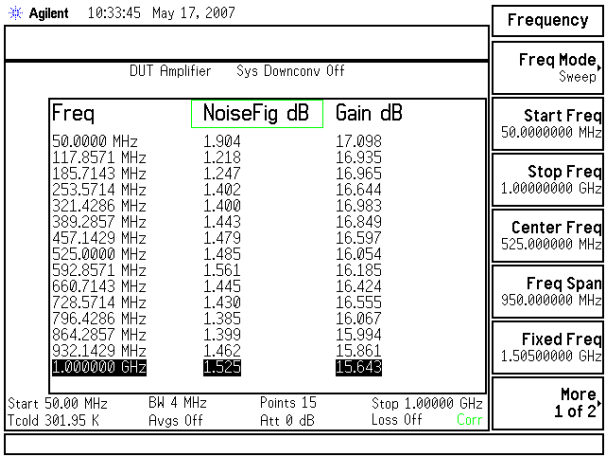
Test Condition
① Supply voltage = +5V, 50ohm System, Ta = 25℃
② OIP3 is measured with two tones, at an output power of +0dBm/tone separated by 1MHz.

WL1008-L

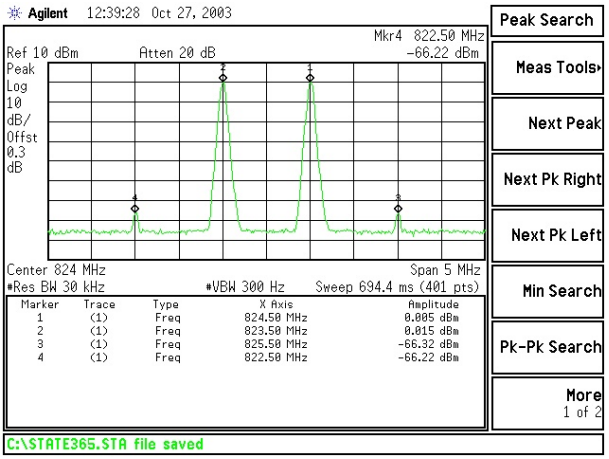
S-Parameter



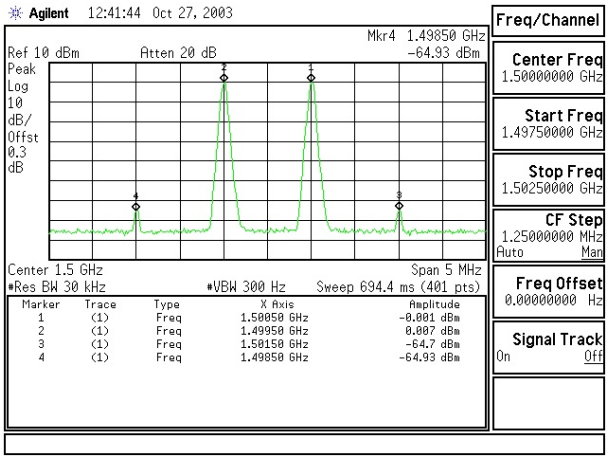
Noise Figure



OIP3(824MHz)

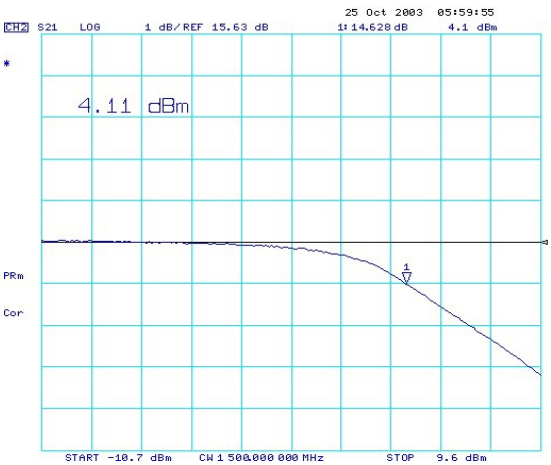


OIP3(1500MHz)



P1dB(824MHz)

P1dB(1500MHz)

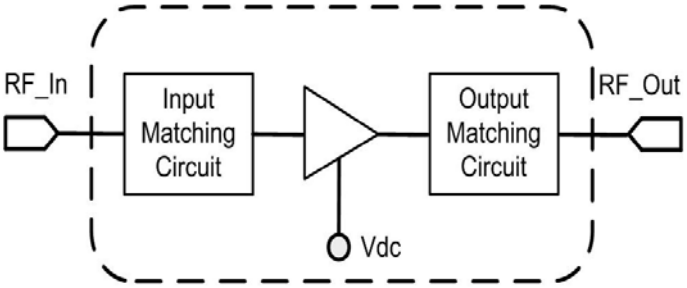


Absolute Maximum Ratings*

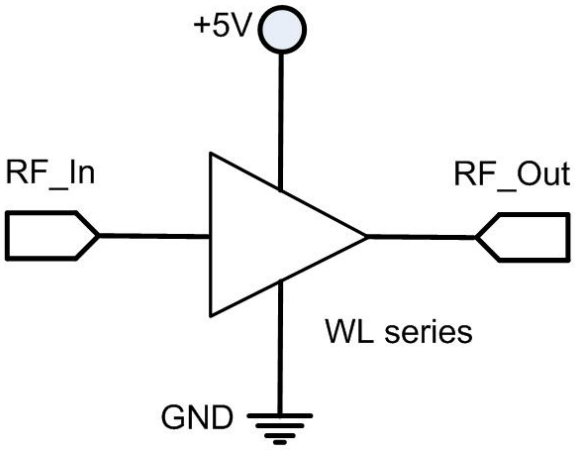
PARAMETER	Unit	Rating	Remark
Device Voltage	V	+8	
RF Input Power	dBm	+25	
Operating Temperature	℃	-40 to +85	
Storage Temperature	℃	-50 to +125	

*** Operation of this device in excess of any one of these parameters may cause permanent damage.**

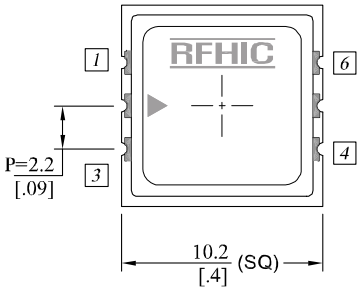
Functional Diagram



Application Circuit



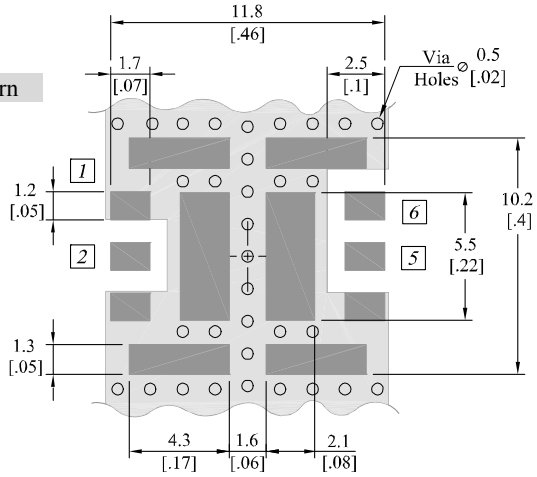
Package Dimensions (Type: CP-16A)



Unit : mm [inch] | Tolerance : ±0.2 .008

Pin No.	Function
1, 3, 4	Ground
2	Input
5	Output
6	Vcc

Recommended Pattern



ESD Protection

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices. Some of the precautions recommended are;

- Person at a workbench should be earthed via a wrist strap and a resistor.
- All mains-powered equipment should be connected to the mains via an earth-leakage switch.
- Equipment cases should be grounded.
- Relative humidity should be maintained between 40% and 50%.
- An ionizer is recommended.
- Keep static materials, such as plastic envelopes and plastic trays etc. away from the workbench.