Product Features

- Surface Mount Hybrid Type
- No matching circuit needed
- High Linearity
- 1W Output Power
- Aluminum Substrate
- Push-pull Amplifier
- Pb Free / RoHS Standard

Applications

- Radio Systems
- Telecom
- CATV
- RF Sub-Systems

Package Type : CP-6C

Description

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 4GHz. All LNA hybrids are possible to have custom frequency & spec without any additional NRE cost involved.

Electrical Specifications @ Vds =12V, Ta=25℃

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Operating Frequency	MHz	20	-	520	ZS = ZL = 50 ohm
Gain	dB	17.5	19.5	-	-
Gain Flatness	dB	-	1.0	1.5	20 ~ 520MHz
Input Return Loss	dB	-8	-15	-	-
Output Return Loss	dB	-8	-15	-	-
1dB Compression Point	dBm	-	31	-	20 ~ 520MHz
Output IP3	dBm	40	43	-	20MHz
		40	44	-	520MHz
Noise Figure	dB	-	2.5	3.0	20MHz
		-	3.0	3.5	520MHz
DC Current	mA	-	360	410	Vdd = 12V

Note

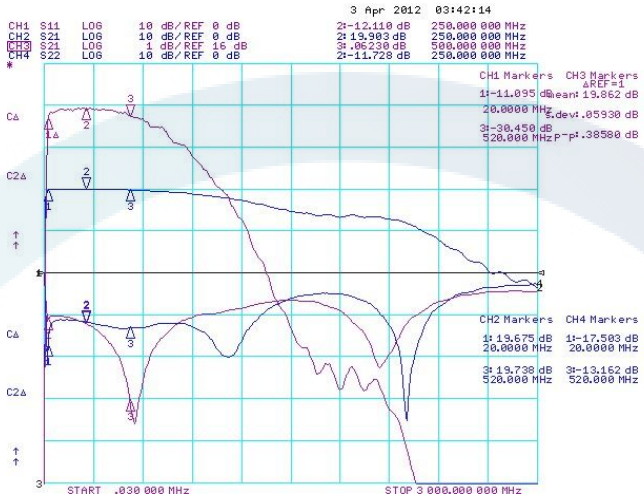
1. Test conditions unless otherwise noted. Test Freq = 1-500MHz, T=25℃, Vdd=12V, 50Ω system
2. OIP3 measured with 2 tones at an output power of +5dBm/tone separated by 1MHz, Test Freq = 20MHz and 520MHz

Absolute Maximum Ratings

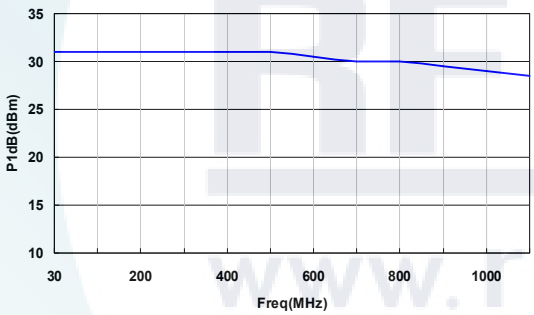
PARAMETER	UNIT	MIN	TYP	MAX	Condition
Supply Voltage	VDC	-	12	15	-
Supply Current	mA	-	-	600	-
Operating Temperature	℃	-40	-	85	-
Storage Temperature	℃	-50	-	125	-

Typical Performance @ VDD=12V, IDS=360mA, T=25℃, 50ohm System

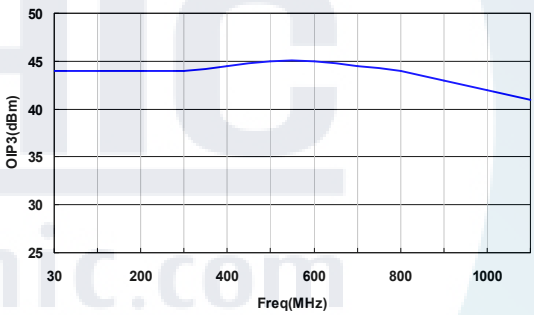
S-Parameter



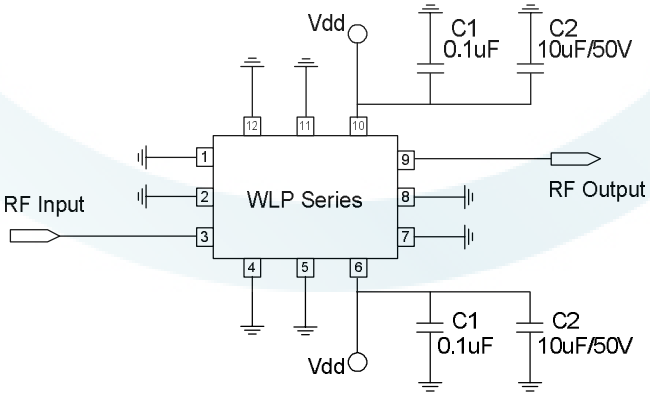
Frequency vs. P1dB



Frequency vs. OIP3



Block Diagram

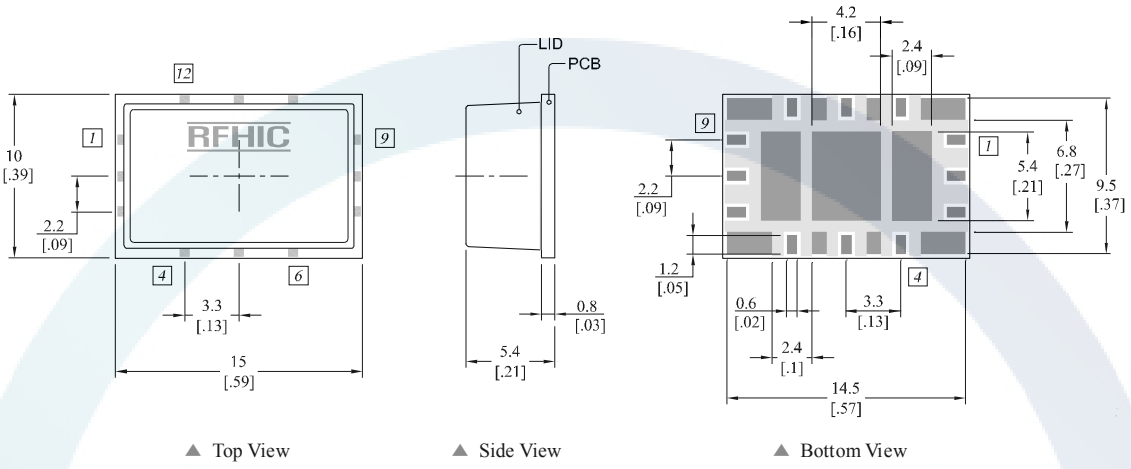


Note

1. WLP Series Have internal DC blocking capacitors at the RF input and output ports.

Package Dimensions (Type: CP-6C)

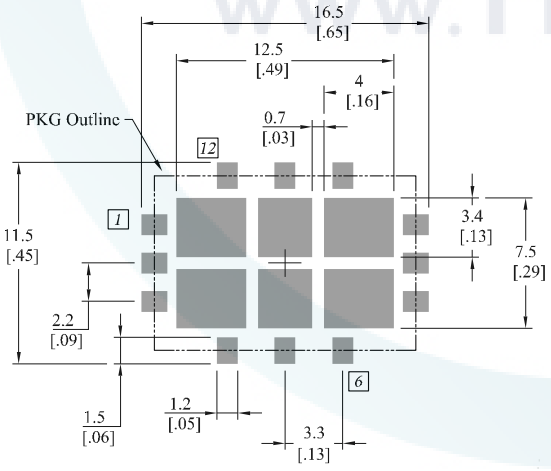
* Unit: mm[inch] | Tolerance: ±0.15[.006]



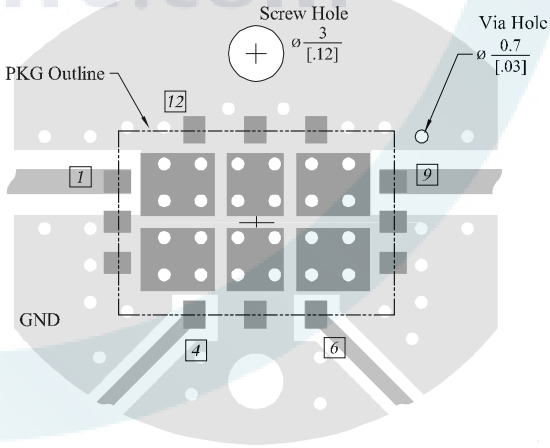
▲ Top View ▲ Side View ▲ Bottom View

Pin Description							
Pin No	**Function**	**Pin No**	**Function**	**Pin No**	**Function**	**Pin No**	**Function**
1	GND	4	GND	7	GND	10	Vdd
2	GND	5	GND	8	GND	11	GND
3	RF Input	6	Vdd	9	RF Output	12	GND

Recommended Pattern



Recommended Mounting Configuration



*** Mounting Configuration Notes**

1. Ground / thermal via holes are critical for the proper performance of this device.
2. Add as much copper as possible to inner and outer layers near the part to ensure optimal thermal performance.
3. Mounting screws can be added near the part to fasten the board to a heatsink. Ensure that the ground / thermal via hole region contacts the heatsink.
4. Do not put solder mask on the backside of the PCB in the region where the board contacts the heatsink.
5. RF trace width depends upon the PCB material and construction.
6. Use 1 oz. Copper minimum.

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
WLP0640	20121227	1.0	Changed Specifications	-
WLP0640	20121010	0.5	Changed Document	Preliminary
WLP0640	20120803	0.4	Changed Specifications	Preliminary