DESCRIPTION

The RTC6610 is a wide band low noise amplifier to operate between 2.4 GHz to 2.5 GHz. The device is made in high performance Silicon Germanium technology. It delivers 14dB gain while giving noise figure 1.7dB at 2.45GHz. No external components are required for input and output RF matching. The device is housed in small & thin package 6L QFN-1.5x1.5x0.55mm.

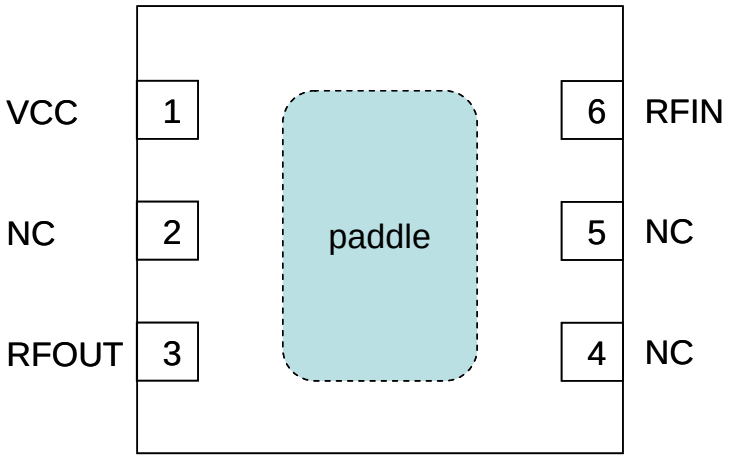
FEATURE

- Operating frequency : 2.4 GHz to 2.5 GHz
- Single supply voltage : 3.3V
- High gain : 14dB at 2.45GHz
- Low noise figure : 1.7dB
- On-chip input & output matching
- Small and thin plastic package 6L QFN-1.5x1.5x0.55mm
- RoHS, Pb-free, Halogen Free Compliant
- Moisture Sensitivity Level : MSL-3

APPLICATION

- LNA for WLAN, Bluetooth, ISM

PINOUT (Top View)



PIN FUNCTION DESCRIPTION

Pin	Function	Description
1	VCC	Voltage supply
2	NC	No connect
3	RFOUT	RF output
4	NC	No connect
5	NC	No connect
6	RFIN	RF input
Paddle	GND	Ground

ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNITS
Voltage at pin VCC	4.0	V
Current into pin VCC	16	mA
RF input power	6	dBm
Operating Ambient Temperature	-40~+85	^{o}C
Storage Temperature	-40~+150	^{o}C

Notes : Exceeding these ranges might cause damage to the device

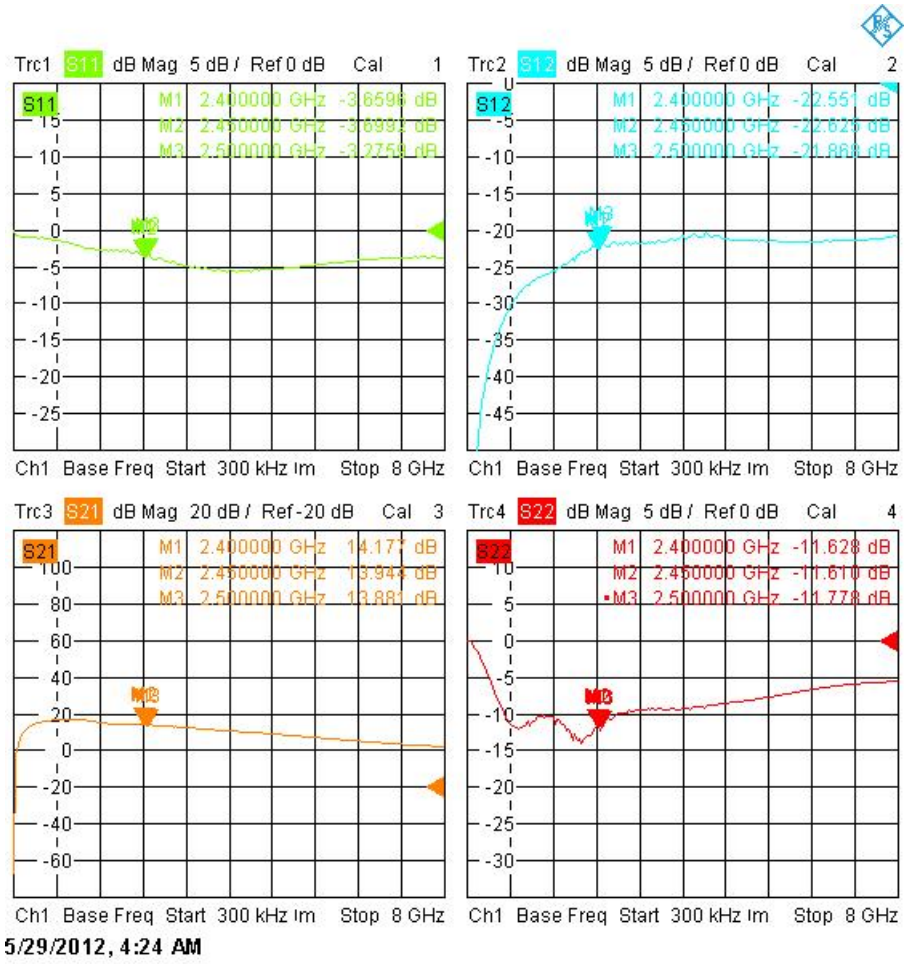
ELECTRICAL CHRACTERISTICS

T=25℃, Vcc=3.3V, Freq=2.45GHz

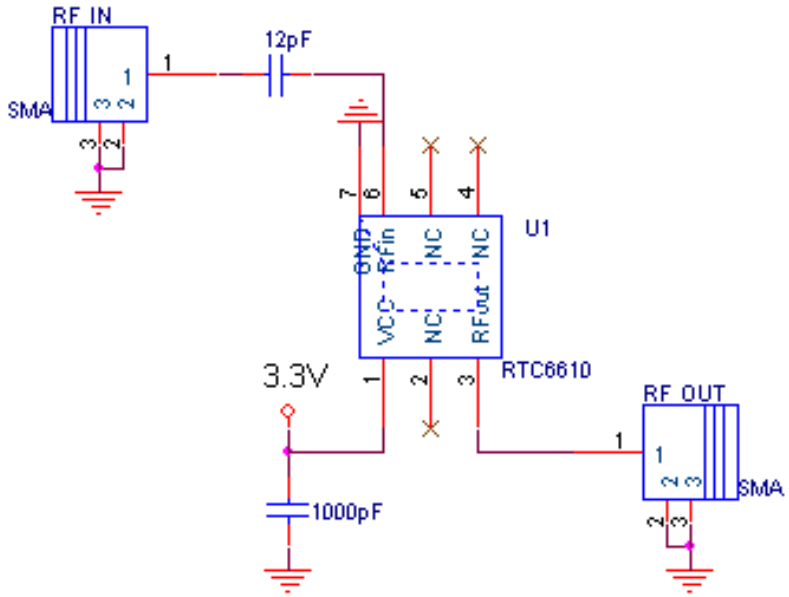
PARAMETER	CONDITION	MIN	TYP	MAX	UNITS
Frequency Range		2.4	-	2.5	GHz
Idc		-	10	13	mA
Small Signal Gain		12	14	-	dB
Noise Figure	Zs=50ohm	-	1.7	1.9	dB
IP1dB		-	-13	-	dBm
Input Return Loss		-	-5	-	dB
Output Return Loss		-	-10	-	dB

S-PARAMETERS

T=25℃, Vcc=3.3V

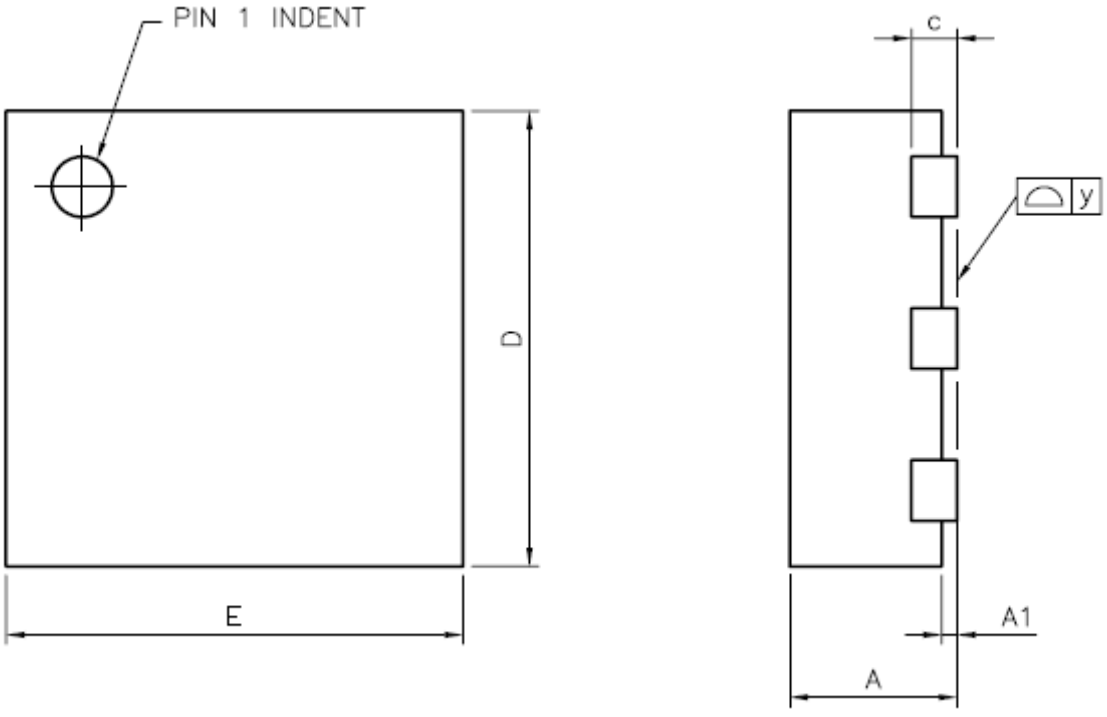


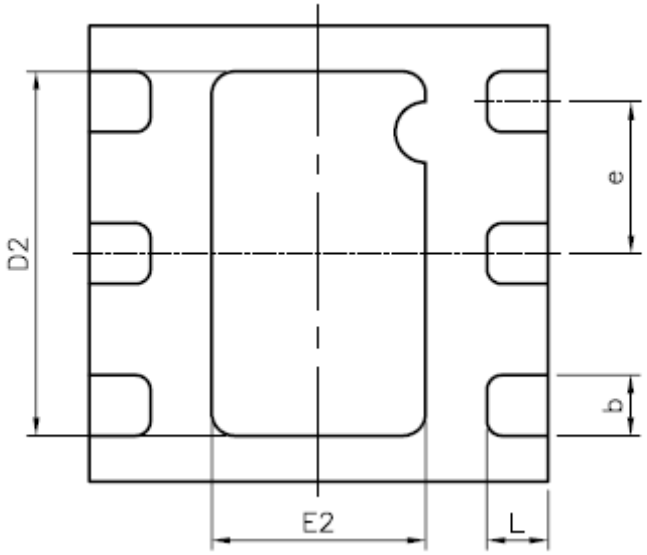
APPLICATION CIRCUIT



PACKAGE

6L QFN-1.5x1.5x0.55mm





SYMBOLS	DIMENSIONS IN MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.55	0.60
A1	0.00	0.02	0.05
c	——	0.15 REF.	——
b	0.15	0.20	0.25
D	1.40	1.50	1.60
D2	1.15	1.20	1.25
E	1.40	1.50	1.60
E2	0.65	0.70	0.75
e	——	0.50	——
L	0.15	0.20	0.25
y	0.00	——	0.075

RECOMMENDED SOLDER REFLOW PROFILES

Average ramp-up rate (200˚C to peak)	3˚C/second max.
Preheat temperature 175 (+/-25) ˚C	60~120secs
Temperature maintained above 217˚C	60~150secs
Time within 5˚C of actual peak temperature	30 seconds min.
Peak temperature range	(260 +2/-2)˚C
Ramp down rate	6˚C/second max.
Time 25˚C to peak temperature	8 minutes max.

* Follow JEDEC spec J-STD-020D