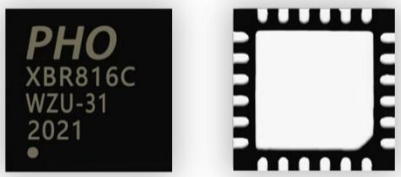
Introduction

The XBR816C is highly integrated X band Radar transceiver device in RF CMOS technology. The device is optimized for applications at higher temperatures and it is rated of operating up to 70℃.



PHO-XBR816C

Key Features

- 1.2V supply voltage
- Typical 60mA current for default mode
- Fully integrated 10.525 GHz CMOS transceiver
- Single-ended transmitter and receiver
- Max 1dBm transmit output power
- < -95dBm receiver sensitivity
- Harmonic rejection: > 40dBc
- Output noise voltage: max 0.5uVrms for low gain and max 45uVrms for high gain
- Operation condition: -40℃~ 70℃
- QFN 24 pins, 4mm x 4mm package

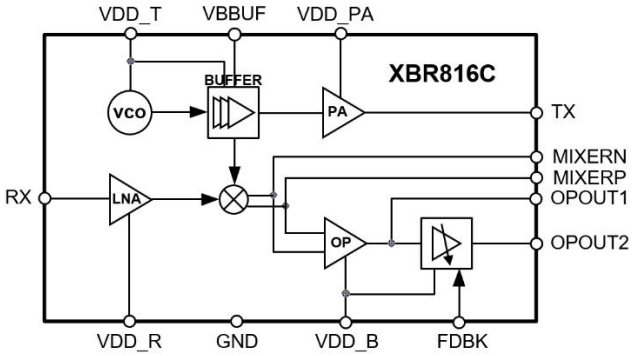
Key Benefits

- Low power consumption
- Small system size
- Low system cost

Applications

- Smart Radar Sensor
- Lighting Controller
- Security & Surveillance Products
- Industrial Applications
- Consumer Appliances

System Diagram

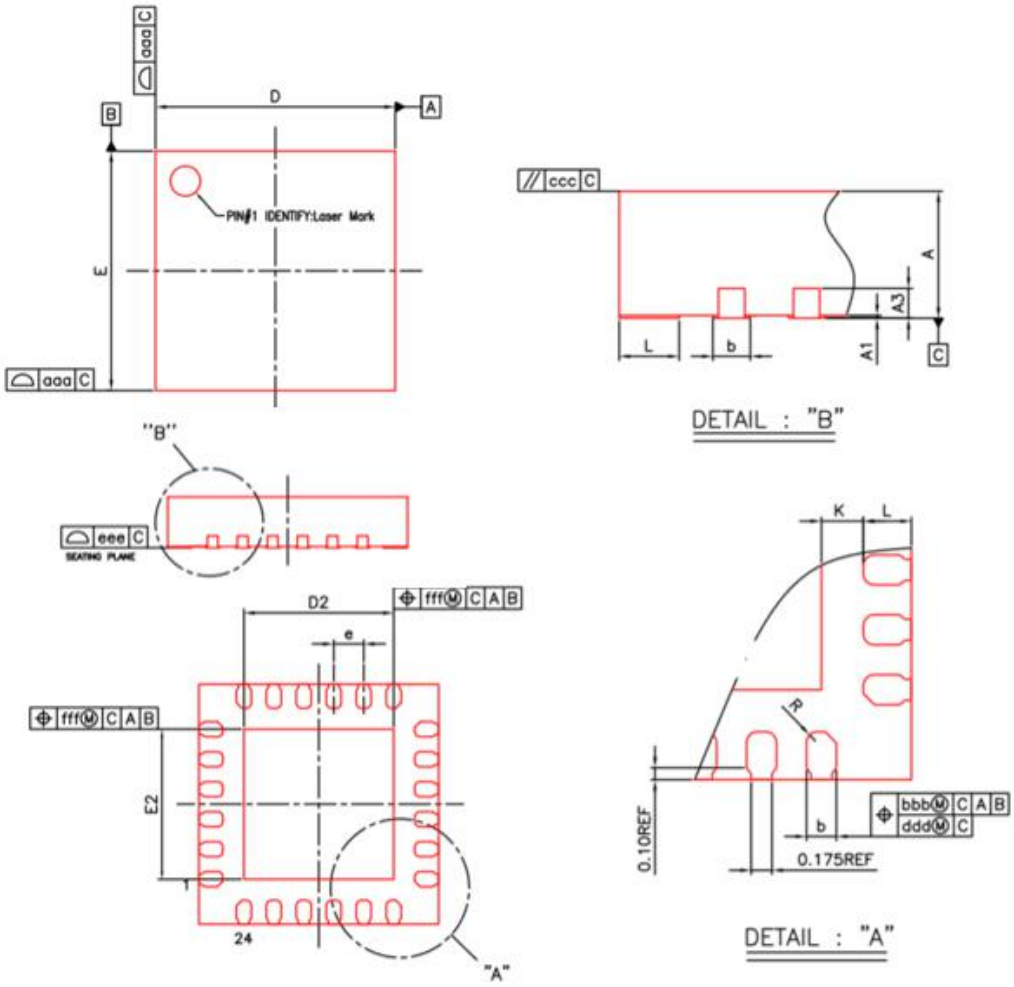


Pin assignment

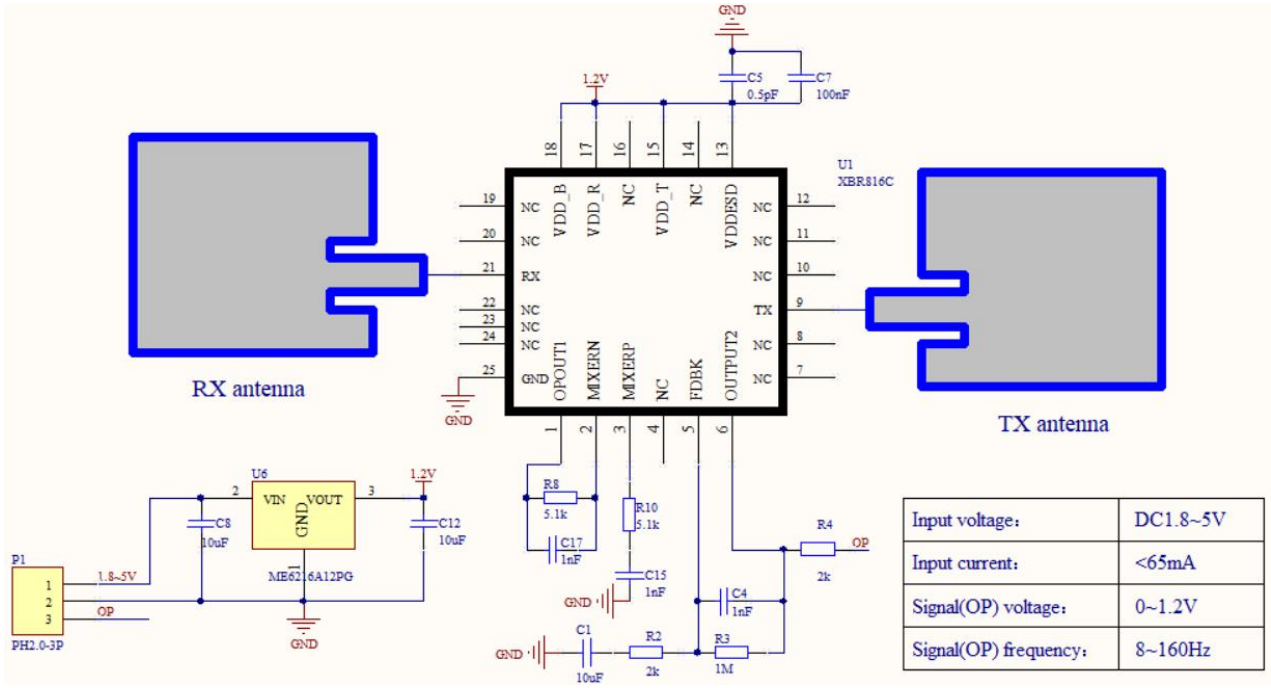
PIN Number	PIN Name	Function
1	OPOUT1	First stage OP IF output
2	MIXERN	Raw IF Signal output N
3	MIXERP	Raw IF Signal output P
5	FDBK	OP Feedback Loop
6	OPOUT2	Second stage OP IF output
9	TXN	RF Signal OUT
13	VDDPA	1.2V supply for power amplifier
15	VDD_T	1.2V supply for transmitter
17	VDD_R	1.2V supply for receiver
18	VDD_B	1.2V supply for baseband
21	RX	RF Signal IN
4,7,8,10,11,12,14,16 19,20,22,23,24	NC	Not connected
25	VSS	Ground

Package information

Symbol	Dimension in mm			Dimension in inch		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.85	0.90	0.031	0.033	0.035
A1	0.00	0.02	0.05	0.000	0.001	0.002
A3		0.20 REF			0.008 REF	
b	0.18	0.25	0.30	0.007	0.010	0.012
D/E		4.00 BSC			0.157 BSC	
D2/E2	2.35	2.50	2.65	0.093	0.098	0.104
e		0.50 BSC			0.020 BSC	
L	0.30	0.40	0.50	0.012	0.016	0.020
K	0.20	---	---	0.008	---	---
R	0.09	---	---	0.004	---	---
aaa	---	---	0.15	---	---	0.006
bbb	---	---	0.10	---	---	0.004
ccc	---	---	0.10	---	---	0.004
ddd	---	---	0.05	---	---	0.002
eee	---	---	0.08	---	---	0.003
fff	---	---	0.10	---	---	0.004



■ Reference Design



Input voltage:	DC1.8~5V
Input current:	<65mA
Signal(OP) voltage:	0~1.2V
Signal(OP) frequency:	8~160Hz

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