Block Up/Down Converter 2G~14GHz with Fixed LO

Case PN: 4GN6H44C5A2

Features:

- **Up conversion or Down conversion**
- **RF Frequency 2GHz to 14 GHz**
- **IF Frequency 500MHz to 6 GHz**
- **Integrated LO (no External Reference/LO needed)**
- **Fixed LO Frequency (1G~12.8GHz)**
- **8.0dB Conversion Loss at 5.8 GHz**
- **Low LO-RF Leakage: <-30dBm**
- **Power by +5~6V Terminal/235mA current**
- **Operating Temperature: -40°C to +60°C**
- **ROHS Compliant**

Applications:

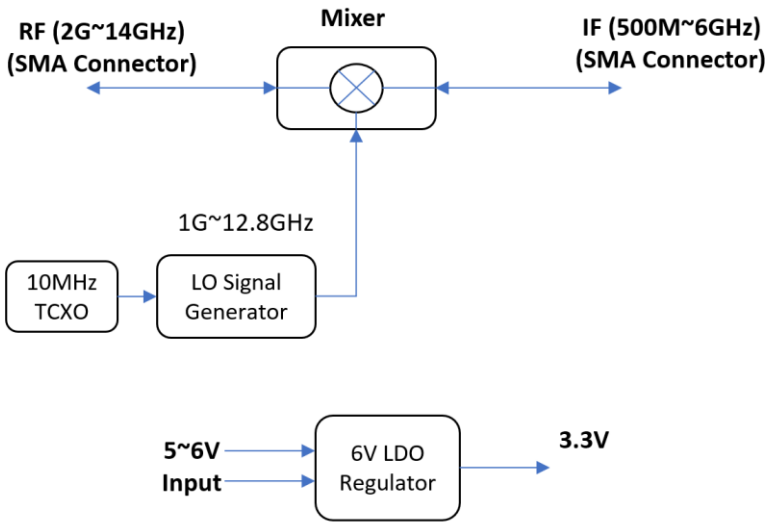
- **Test Instrumentation**
- **Satellite Block Up/Down Conversion**
- **Wireless and Optical Communication**

General Description:

BUDC2G14GF is a 2G~14 GHz block up/down converter that can be used for upconversion or downconversion. RF frequency range is 2GHz to 14GHz and IF frequency range is 500MHz to 6GHz. A fixed low phase noise LO supports LO frequencies from 1GHz to 12.8GHz. It has 8.0dB conversion loss at 5.8GHz with low LO-RF leakage <30dBm. It can be powered +5~6V terminal with 235mA current draw. It has dimension of 2.25"x1.313"x0.52".

The converter has broad applications for up and down conversion.

Block Diagram:



Electrical Specifications:

Item	Parameter	Conditions	Min	Typ	Max	Units
1	LO Frequency Range			1 to 12.8		GHz
2	RF Frequency Range			2 to 14		GHz
3	IF Frequency Range			500 to 6000		MHz
4	RF Return Loss	2GHz to 13.6GHz		>9		dB
5	LO Input Return Loss	1GHz to 12.8GHz		>10		dB
6	IF Return Loss	0.7GHz to 6GHz		>10		dB
7	Downmixer Conversion Loss	RF=2GHz, LO=4GHz		7.8		dB
		RF=5.8GHz, LO=4GHz		8.0		dB
		RF=9GHz, LO=7GHz		9.9		dB
		RF=12GHz, LO=10GHz		12		dB
8	Downmixer Noise Figure	RF=2GHz, LO=4GHz		7.9		dB
		RF=5.8GHz, LO=4GHz		8.1		dB
		RF=9GHz, LO=7GHz		10.7		dB
		RF=12GHz, LO=10GHz		12.6		dB
9	Downmixer LO to RF Leakage	f_{LO} = 1GHz to 12.8GHz		<-30		dBm
10	Downmixer LO to IF Leakage	f_{LO} = 1GHz to 12.8GHz		<-27		dBm
11	Downmixer RF to LO Isolation	F_{RF} = 2GHz to 14GHz		>45		dB
12	Downmixer RF to IF Isolation	F_{RF} = 2GHz to 14GHz		>35		dB
13	Downmixer Input 1dB Compression	RF=5.8GHz, LO=4GHz		14.3		dBm
14	Upmixer Conversion Loss	RF=2GHz, LO=4GHz		7.7		dB
		RF=5.8GHz, LO=4GHz		7.8		dB
		RF=9GHz, LO=7GHz		9.2		dB
		RF=12GHz, LO=10GHz		10.7		dB
15	Upmixer Noise Figure	RF=2GHz, LO=4GHz		7.8		dB
		RF=5.8GHz, LO=4GHz		8.8		dB
		RF=9GHz, LO=7GHz		10.4		dB
		RF=12GHz, LO=10GHz		11.1		dB
16	Upmixer LO to RF Leakage	f_{LO} = 1GHz to 12.8GHz		<-30		dBm
17	Upmixer LO to IF Leakage	f_{LO} = 1GHz to 12.8GHz		<-27		dBm
18	Upmixer IF to LO Isolation	F_{IF} = 500MHz to 6GHz		>45		dB
19	Upmixer IF to RF Isolation	F_{IF} = 500MHz to 6GHz		>40		dB
20	Upmixer Input 1dB Compression	RF=5.8GHz, LO=4GHz		15.5		dBm

Test Conditions: V_{DD}=+5V, I_{dd} = 235 mA Temp = +25 °C, 50Ω system.

Absolute Maximum Ratings

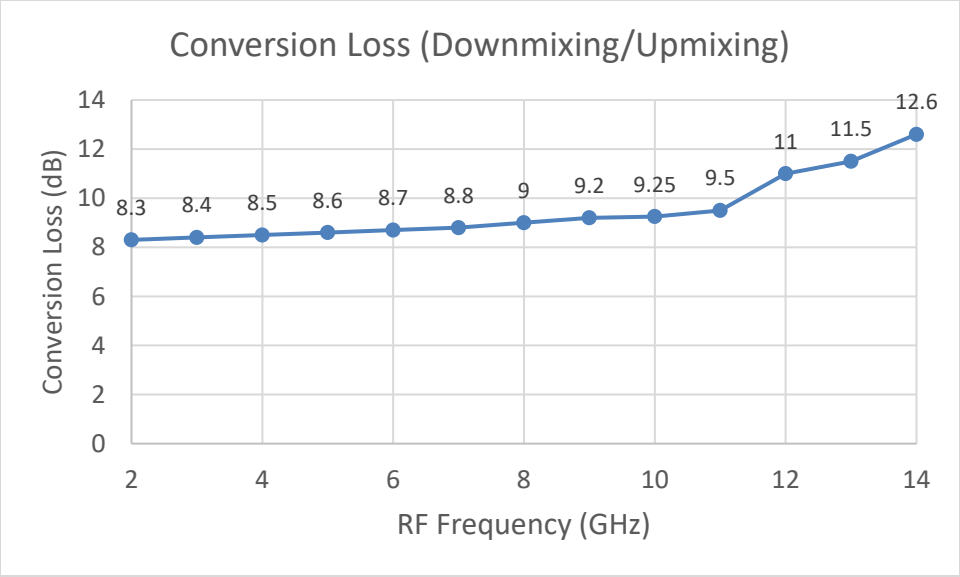
Item	Parameter	Rating	UNITS
1	Max Device Voltage	+6	V
2	Max RF Power (2G~14GHz)	+20	dBm
3	Max IF Power (0.5G~6GHz)	+20	dBm
4	Operating Temperature	-40 to +60	°C
5	Max Storage Temperature	-65 to +150	°C

Note: ESD Sensitive Material, Transport material in ESD bags and handle only in ESD Workstation.

Mechanical Specifications:

Size:
Length: 2.25 in
Width: 1.3125 in
Height: 0.52 in
Weight: 1.5 Oz (42 g)
Body Material and Plating: Aluminum with Electroless Nickel Plating

Typical Conversion Loss:



Outline Drawing: