

High Performance Regulated Charge Pump

General Description

The LP3211 is a high performance charge pump DC/DC converter that produces a regulated 5V output. No external inductor is required for operation. The operating voltage range is 2.8V to V_{OUT} . Internal soft-start circuitry effectively reduces the in-rush current both while start-up and mode change.

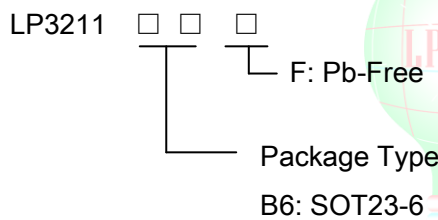
The LP3211 features very low quiescent current, over current protection and short circuit protection.

The LP3211 is available in SOT-23-6 package.

Features

- ◆ 2.8V to V_{OUT} Range Input Voltage
- ◆ Soft Start Function
- ◆ Built-In Short-Circuit Protection
- ◆ Built-in Thermal Protection
- ◆ Over Current Protection Function
- ◆ 340KHz Fixed frequency
- ◆ $I_Q < 1\mu A$ in Shutdown
- ◆ SOT23-6 Package
- ◆ RoHS Compliant and 100% Lead (Pb)-Free

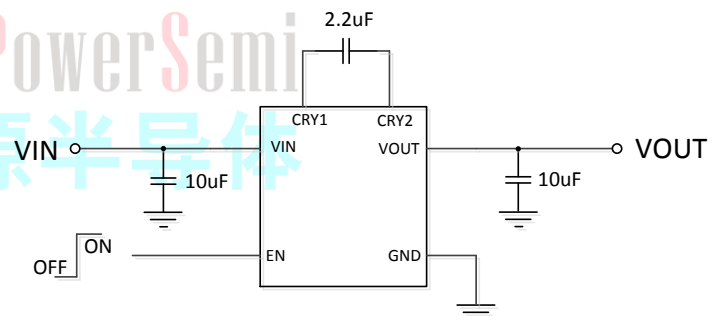
Order Information



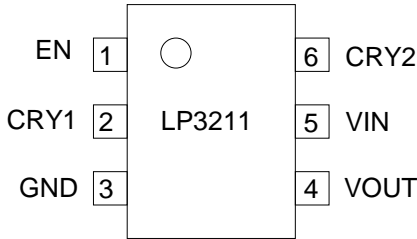
Applications

- ◇ LCD Panel
- ◇ Cellular and Smart mobile phone
- ◇ PDA/DSC
- ◇ Flash LED Driver

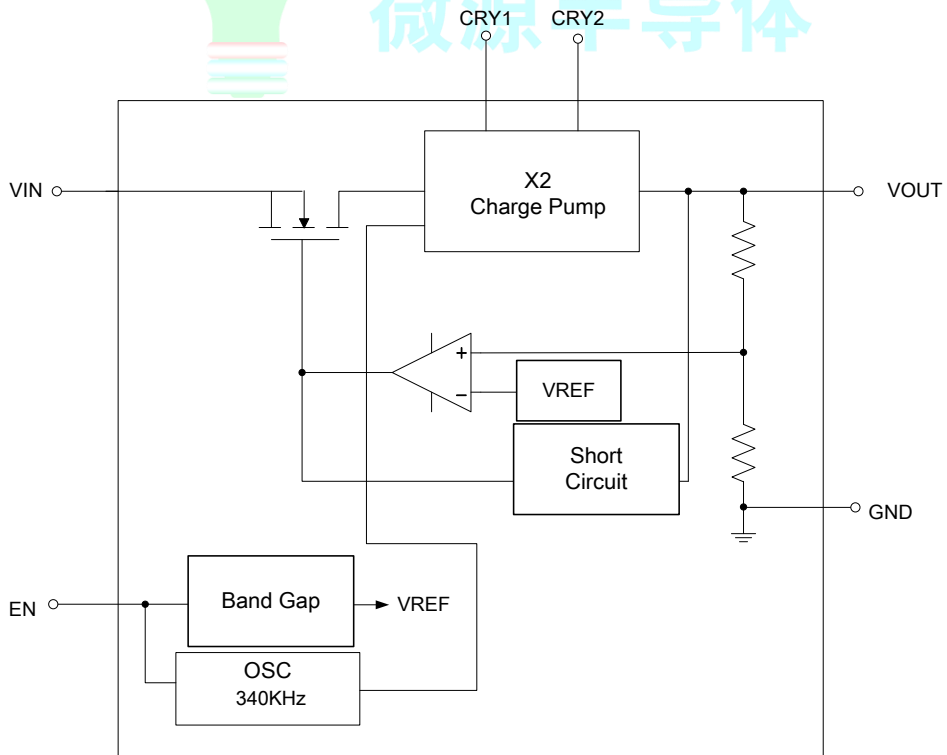
Typical Application Circuit



Functional Pin Description

Package Type		Pin Configurations
SOT23-6		
Pin	Name	Description
1	EN	Chip Enable (Active High)
2	CRY1	Flying Capacitor Negative Terminal
3	GND	Ground
4	VOUT	Output Voltage
5	VIN	Power Input Voltage
6	CRY2	Flying Capacitor Positive Terminal

Function Block Diagram



Typical Application Circuit

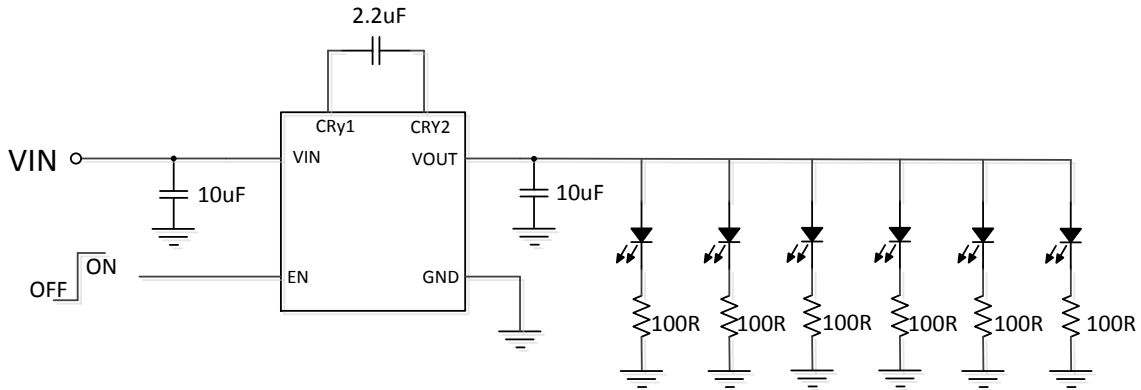


Figure1: Up to 6pcs White/Blue LED Driver from Li-Ion Battery Source

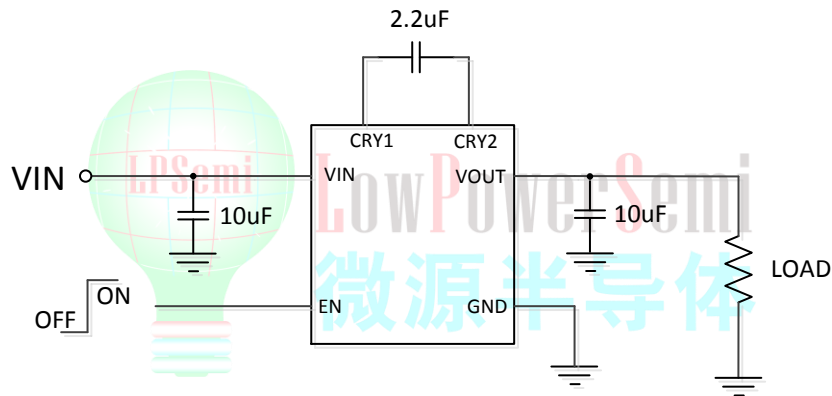


Figure2: Step-up to 5V with loading application from Li-Ion Battery Source

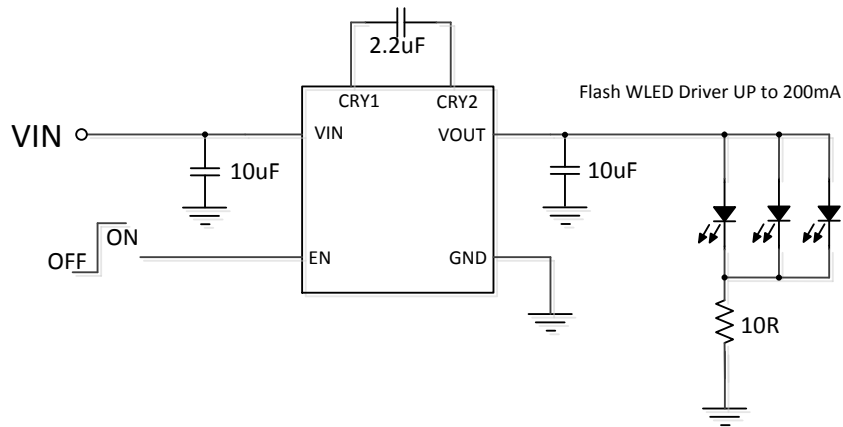


Figure3: Large Current Flash LED Driver from Li-Ion Battery Source

Absolute Maximum Ratings ^{Note 1}

- ◇ Input Voltage to GND (V_{IN}) ----- 6V
- ◇ EN to GND Voltage (V_{EN}) ----- 0.3V to $V_{IN}+0.3V$
- ◇ Maximum Power Dissipation (P_D) ----- 0.45W
- ◇ Thermal Resistance ----- 250°C/W
- ◇ Operating Junction Temperature Range ----- 125°C
- ◇ Maximum Soldering Temperature (at leads, 10sec) ----- 260°C

Note 1. Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

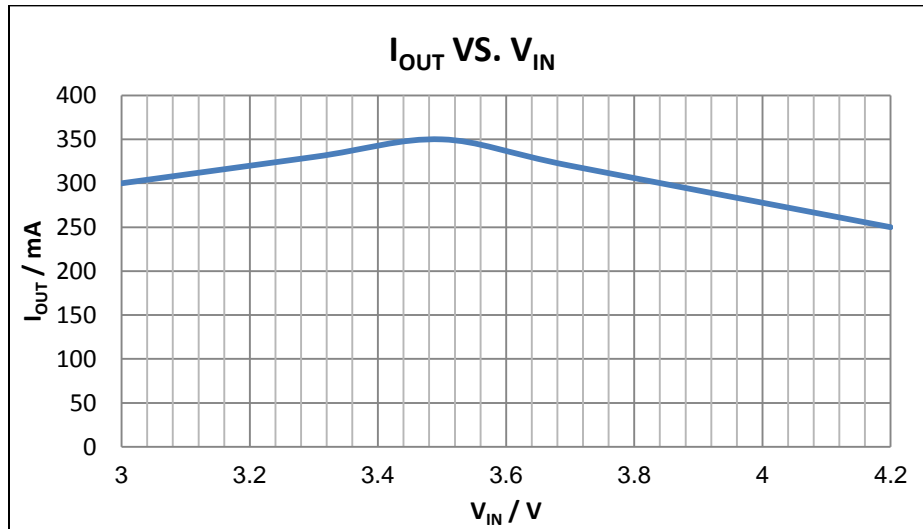
Recommended Operating Conditions

- ◇ Ambient Temperature Range ----- -20°C to 85°C

Electrical Characteristics

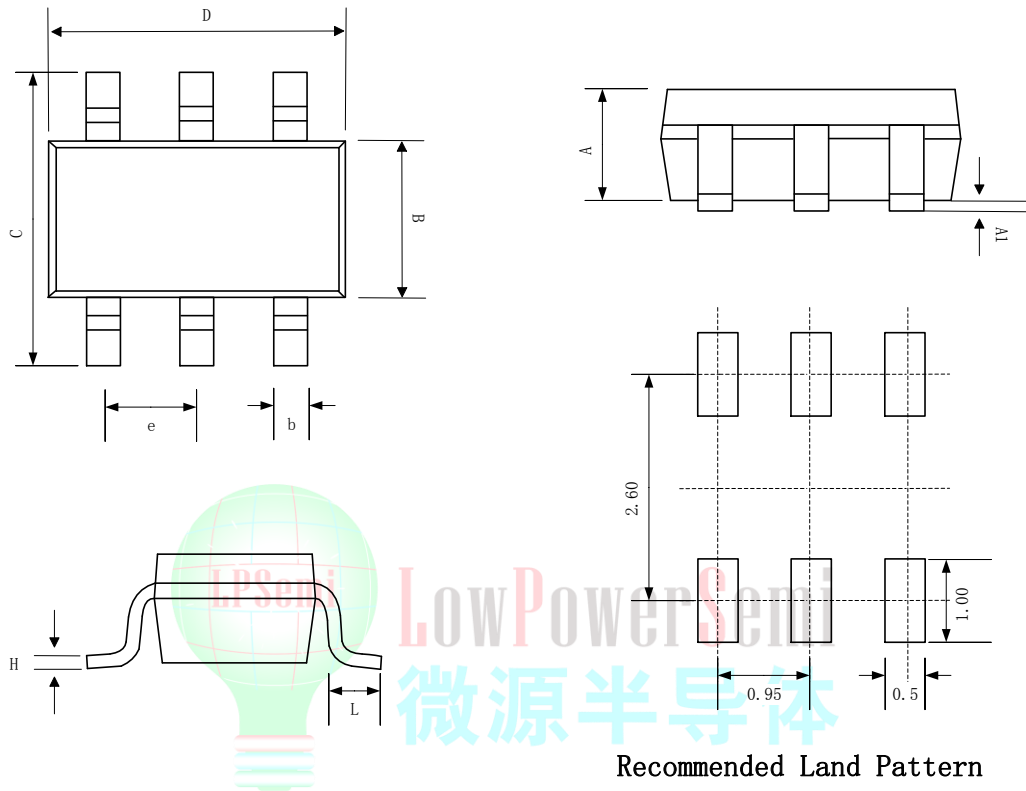
(Over recommended operating conditions unless specified otherwise) $V_{IN}=3.6V, V_{EN}=High, T_A=25^\circ C$)

Parameter	Symbol	Condition	Min	Typ	Max	Units
Input Voltage	V_{IN}		2.8		V_{OUT}	V
Output Voltage Range	V_{OUT}			5.0		V
Quiescent Current	I_Q	No Load		2		mA
Shutdown Current	I_{SHDN}	$V_{EN} = GND$			1	uA
Oscillator Frequency	f_{OSC}			340		KHz
Output short Circuit Current Limit	I_{SC}	$V_{OUT} < 0.5V$	300	350	450	mA
Enable Threshold Low	$V_{EN(L)}$				0.4	V
Enable Threshold High	$V_{EN(H)}$		1.4			V
Enable Current	I_{EN}	$V_{IN} = V_{EN} = 5.5V$	-1		1	μA



Packaging Information

SOT23-6



Recommended Land Pattern

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.889	1.100	1.295
A1	0.000	0.050	0.152
B	1.397	1.600	1.803
b	0.28	0.35	0.559
C	2.591	2.800	3.000
D	2.692	2.920	3.120
e	0.95BSC		
H	0.080	0.152	0.254
L	0.300	0.450	0.610