



## 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.

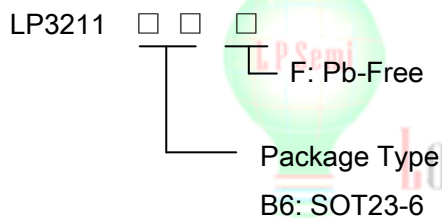
The LP3211 features very low quiescent current, over current protection and short circuit protection.

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

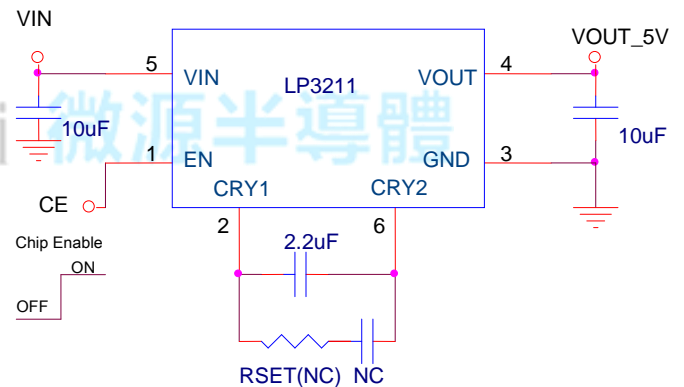
### Order Information



### Applications

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

### Typical Application Circuit



### Marking Information

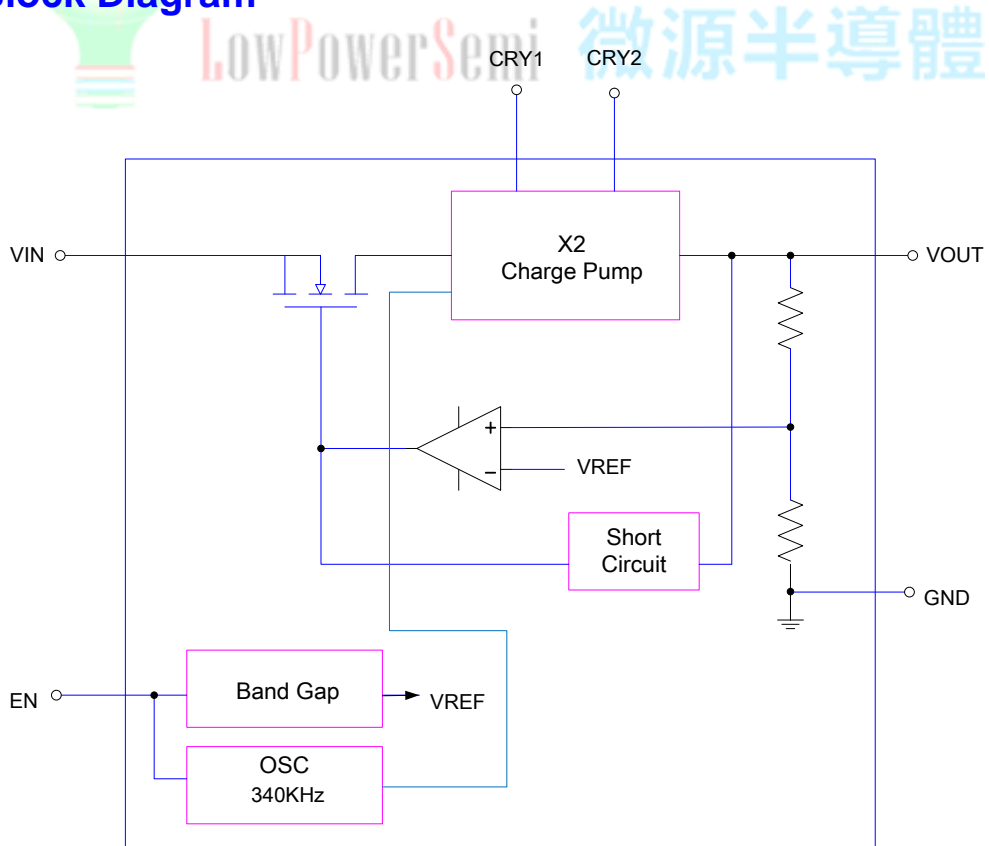
Device	Marking	Package	Shipping
LP3211		SOT23-6	3K/REEL



### 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

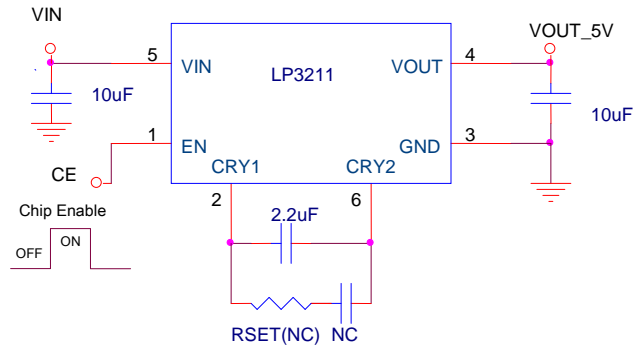


Figure1.LP3211 Step up to 5V Circuit

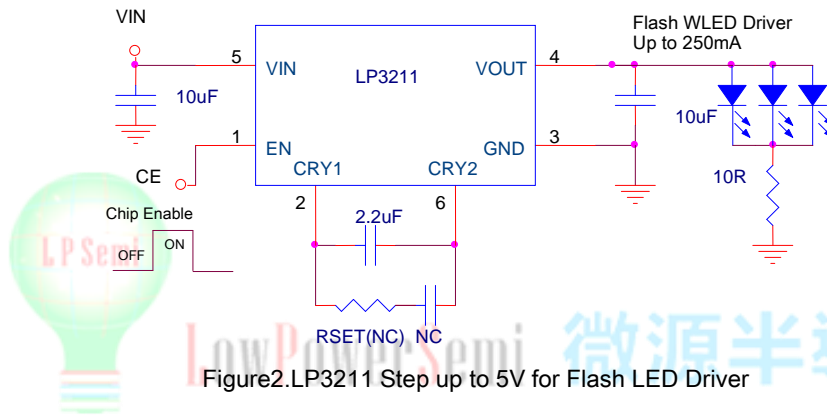


Figure2.LP3211 Step up to 5V for Flash LED Driver

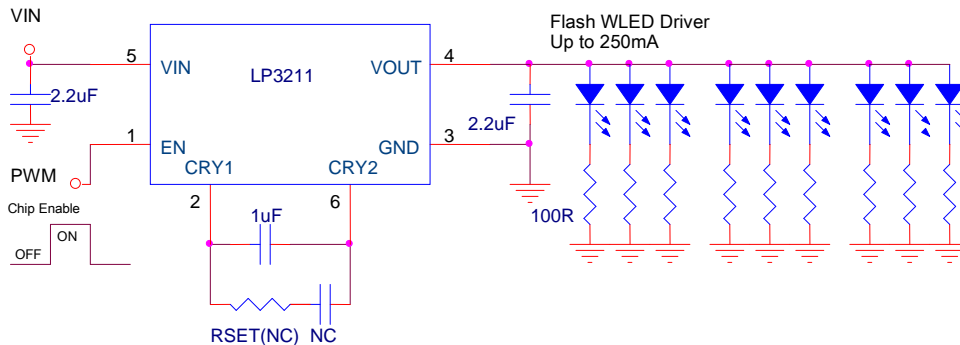


Figure3.LP3211 Step up to 5V for white LED Driver



### Absolute Maximum Ratings Note 1

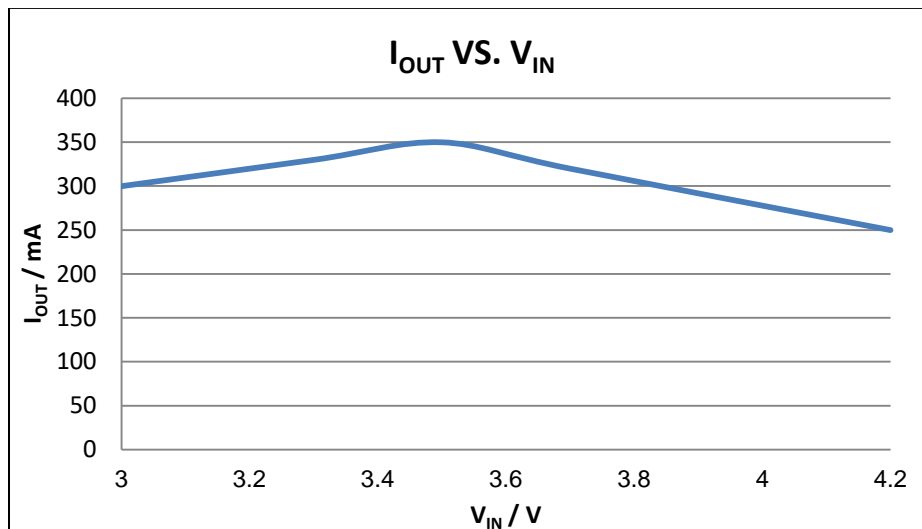
- ✧ Input Voltage to GND ( $V_{IN}$ ) ----- 5.5V
- ✧ EN to GND Voltage ( $V_{EN}$ ) ----- 0.3V to  $V_{IN}+0.3V$
- ✧ Maximum Power Dissipation ( $P_D$ ) ----- 0.45W
- ✧ Thermal Resistance ----- 250°C/W
- ✧ Operating Junction Temperature Range ----- 125°C
- ✧ Operation Ambient Temperature Range ----- -20°C to 85°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.

### Electrical Characteristics

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

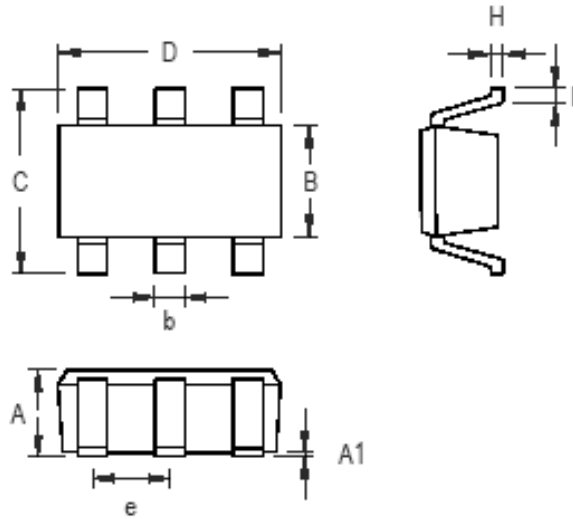
Parameter	Symbol	Condition	Min	Typ	Max	Units
Input Voltage	$V_{IN}$		2.8		$V_{OUT}$	V
Output Voltage Range	$V_{OUT}$			5.0		V
Quiescent Current	$I_Q$	No Load		2		mA
Shutdown Current	$I_{SHDN}$	$V_{EN} = GND$		1	5	uA
Oscillator Frequency	$f_{OSC}$			340		KHz
Output short Circuit Current Limit	$I_{SC}$	$V_{OUT} < 0.5V$	300	350	450	mA
Enable Threshold Low	$V_{EN(L)}$				0.4	V
Enable Threshold High	$V_{EN(H)}$		1.4			V
Input Low Current	$I_{EN}$	$V_{IN} = V_{EN} = 5.5V$	-1		1	uA





### Packaging Information

### SOT23-6



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.889	1.295	0.031	0.051
A1	0.000	0.152	0.000	0.006
B	1.397	1.803	0.055	0.071
b	0.250	0.560	0.010	0.022
C	2.591	2.997	0.102	0.118
D	2.692	3.099	0.106	0.122
e	0.838	1.041	0.033	0.041
H	0.080	0.254	0.003	0.010
L	0.300	0.610	0.012	0.024

SOT-23-6 Surface Mount Package

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