

## High Performance PWM DC/DC Regulated

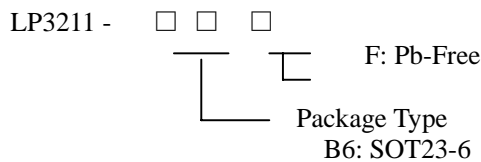
### General Description

The LP3211 is a 1.2MHz high performance PWM DC/DC converter that produces a regulated 5V output. No external inductor and diode 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

- ✧ 280mA Output current
- ✧ No Inductor and diode
- ✧ Soft Start Function
- ✧ Built-In Short-Circuit Protection
- ✧ Built-in Thermal Protection
- ✧ Over Current Protection Function
- ✧  $I_q < 1\mu A$  in Shutdown
- ✧ SOT23-6 Package
- ✧ RoHS Compliant and 100% Lead (Pb)-Free

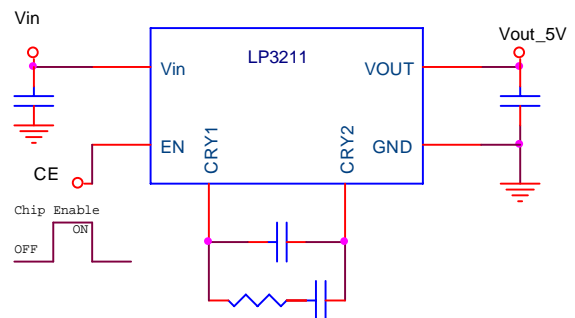
### Order Information



### Applications

- ✧ LCD Panel
- ✧ Cellular and Smart mobile phone
- ✧ PDA/DSC
- ✧ USB Host power

### Typical Application Circuit



### Marking Information

Please see website.

## Functional Pin Description

Package Type		Pin Configurations																				
SOT23-6																						
		<table border="1"> <thead> <tr> <th>PIN</th> <th>NAME</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>EN</td> <td>Chip Enable (Active High)</td> </tr> <tr> <td>2</td> <td>CRY1</td> <td>CRYSTAL INPUT1.</td> </tr> <tr> <td>3</td> <td>GND</td> <td>Ground</td> </tr> <tr> <td>4</td> <td>VOUT</td> <td>5V Output Voltage</td> </tr> <tr> <td>5</td> <td>VIN</td> <td>Power Input Voltage</td> </tr> <tr> <td>6</td> <td>CRY2</td> <td>CRYSTAL INPUT2.</td> </tr> </tbody> </table>		PIN	NAME		1	EN	Chip Enable (Active High)	2	CRY1	CRYSTAL INPUT1.	3	GND	Ground	4	VOUT	5V Output Voltage	5	VIN	Power Input Voltage	6
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3	GND	Ground																				
4	VOUT	5V Output Voltage																				
5	VIN	Power Input Voltage																				
6	CRY2	CRYSTAL INPUT2.																				

## Absolute Maximum Ratings

- ◇ Input Voltage to GND ( $V_{IN}$ ) ----- 6V
- ◇ EN to GND Voltage ( $V_{en}$ ) ----- 0.3V to  $V_{in}+0.3V$
- ◇ Maximum DC Output Current( $I_{out}$ ) ----- 350mA
- ◇ Operating Junction Temperature Range ( $T_j$ ) -----40°C to 150°C
- ◇ Maximum Soldering Temperature (at leads, 1 0sec) -----260°C

## Electrical Characteristics

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

Symbol	Parameter	Conditions	LP3211			Unit
			Min.	Typ.	Max.	
$V_{IN}$	Input Voltage		2.8		Vout	V
$V_{OUT}$	Output Voltage Range			5.0		V
$I_Q$	Quiescent Current	No Load		2	4	mA
$I_{SHDN}$	Shutdown Current	EN = GND		1	5	$\mu A$
$F_{OSC}$	Oscillator Frequency		0.9	1.2	1.5	MHz
$I_{SC}$	Output short Circuit Current Limit	$V_{out}<0.5V$	350	450	500	mA
$V_{EN(L)}$	Enable Threshold Low				0.4	V
$V_{EN(H)}$	Enable Threshold High		1.5			V
$I_{EN}$	Input Low Current	$V_{IN} = V_{EN} = 5.5V$	-1		1	$\mu A$

Typical Application Circuit

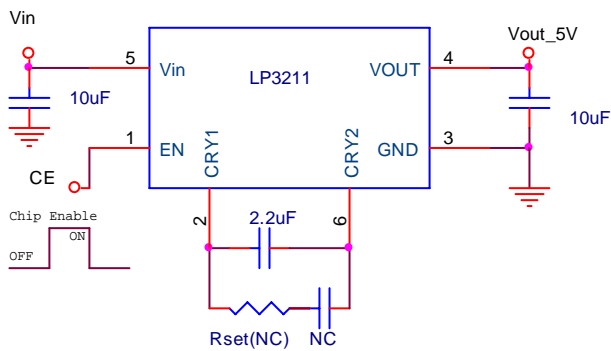


Fig1. Step up to 5V Circuit

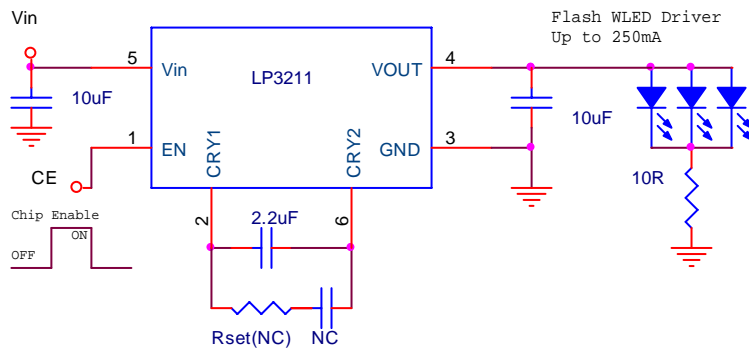


Fig1. Step up to 5V for Flash LED Driver

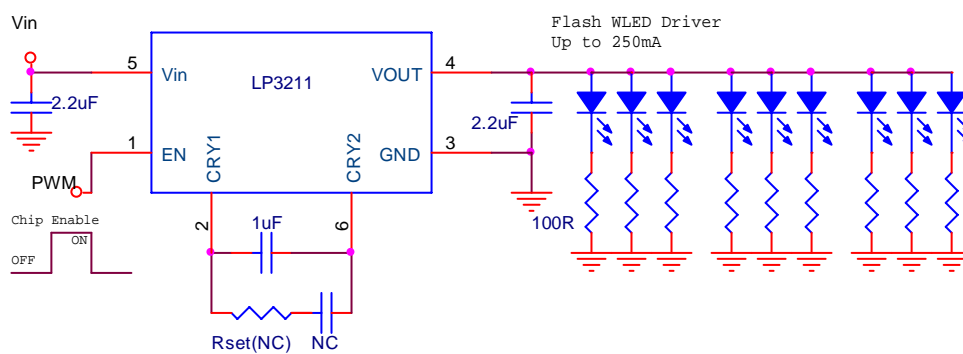
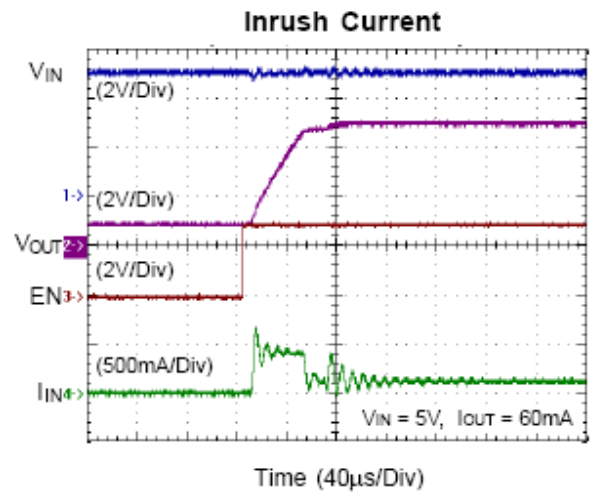
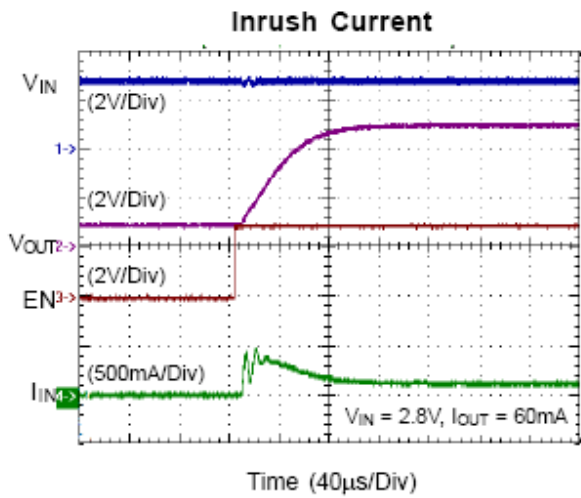
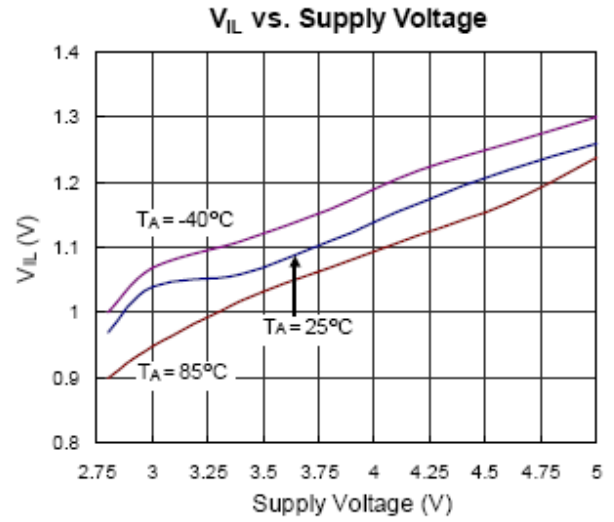
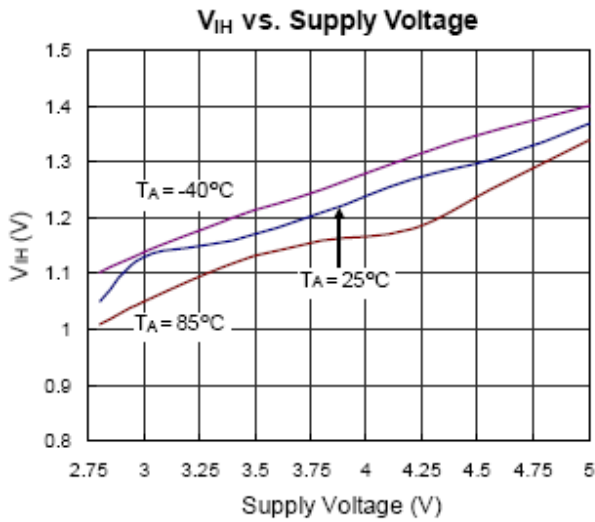
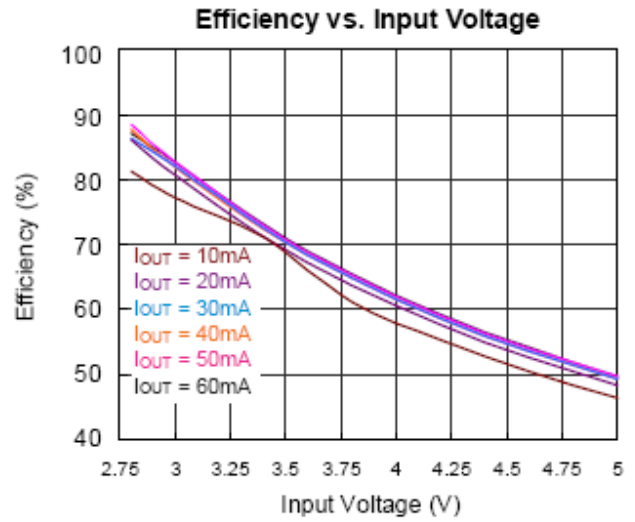
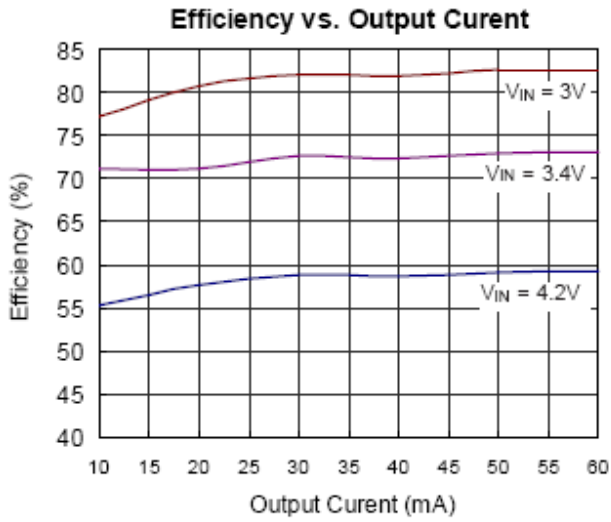
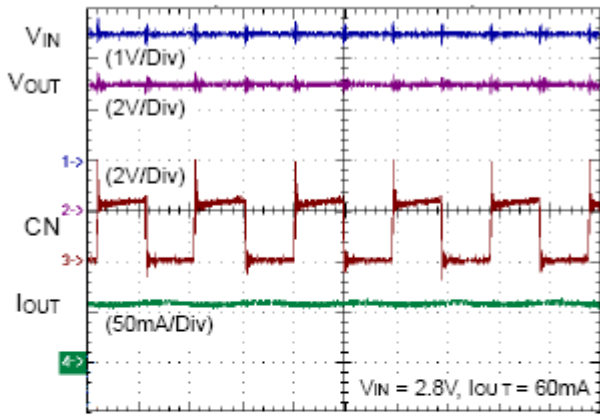


Fig1. Step up to 5V for white LED Driver

Typical Operating Characteristics

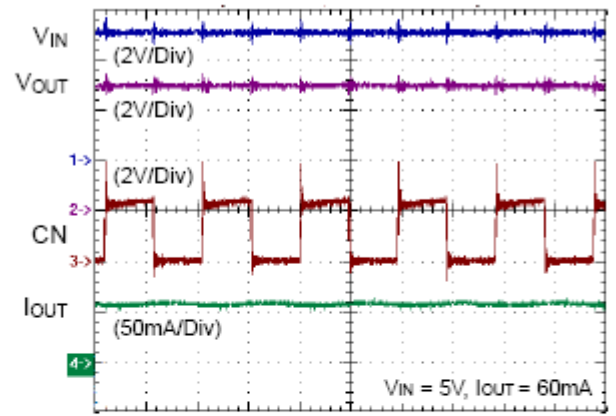


Normal Operation



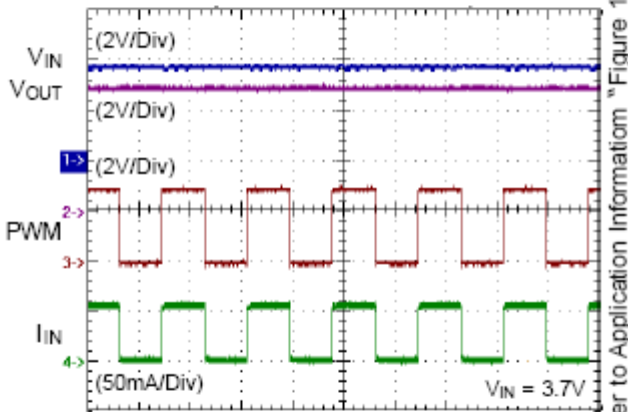
Time (400ns/Div)

Normal Operation



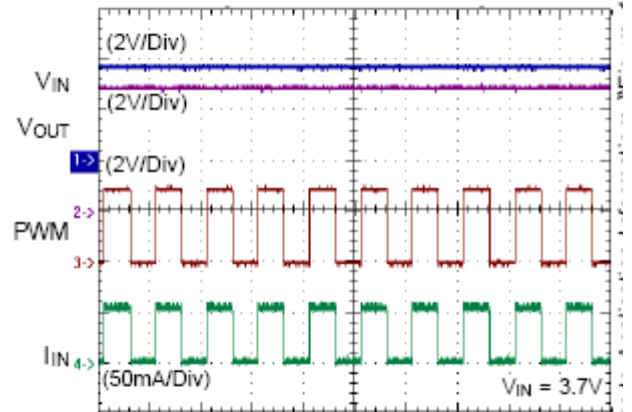
Time (400ns/Div)

Dimming Operation



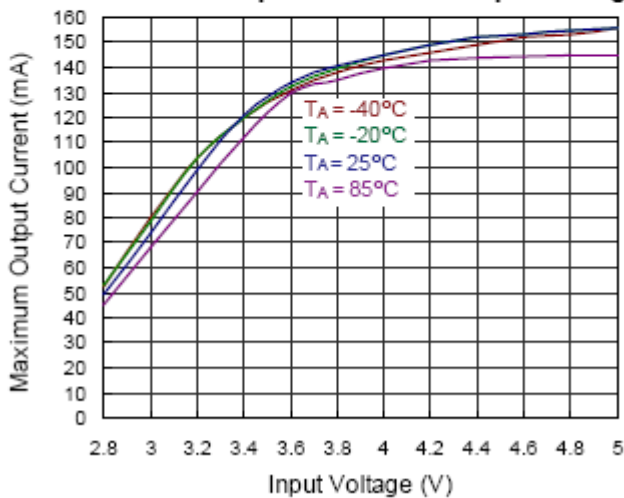
Time (40μs/Div)

Dimming Operation

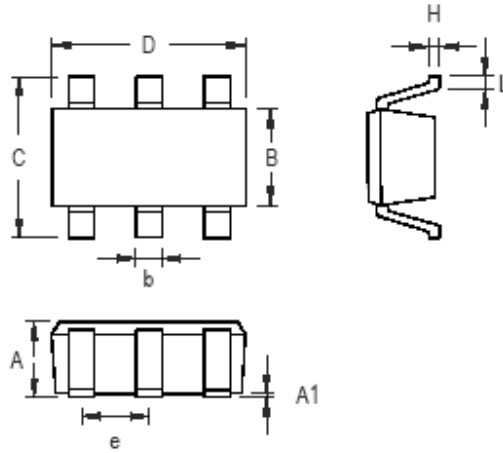


Time (10ms/Div)

Maximum Output Current vs. Input Voltage



## Packaging Information



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