IS31BL3231 FLASH LED DRIVER

DESCRIPTION

IS31BL3231 flash LED driver demo board is used to demonstrate and evaluate the IS31BL3231. The IS31BL3231 is a current-regulated charge pump and ideal for powering high brightness LEDs for camera flash and torch applications. The charge pump can be set to regulate two current levels for Flash Mode and Torch Mode.

FEATURES

- Supply voltage range from 2.7V to 5.5V
- Output current up to 750mA
- Adjustable output current in Flash Mode
- Automatic boost mode
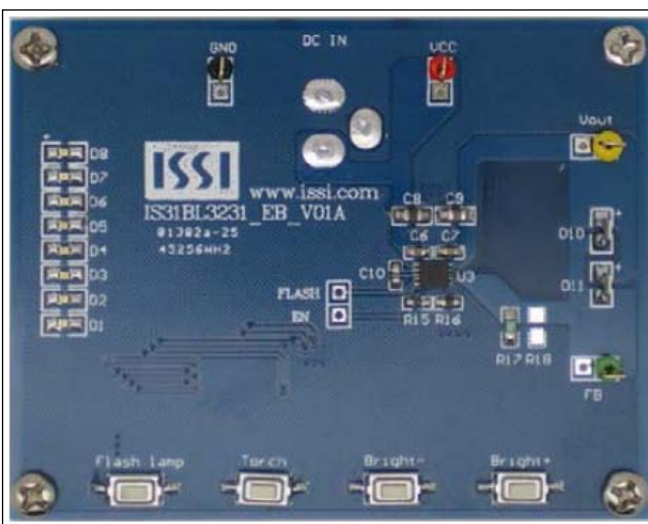- Available in DFN-10 (3mm × 3mm) package

QUICK START

Figure 1: Photo of IS31BL3231 Evaluation Board

RECOMMENDED EQUIPMENT

- 5.0V, 2A power supply

ABSOLUTE MAXIMUM RATINGS

- ≤ 5.5V power supply

Caution: Do not exceed the conditions listed above, otherwise the board will be damaged.

PROCEDURE

The IS31BL3231 evaluation board is fully assembled and tested. Follow the steps listed below to verify board operation.

Caution: Do not turn on the power supply until all connections are completed.

1) Connect the ground terminal of the power supply to the GND pin and the power supply's positive terminal to the VCC pin.
2) Alternatively, a DC source can be connected directly to the (DC IN) connector.
3) Turn on the power supply and pay attention to the supply current. If it is over 2A, please check evaluation board for any faults; if errors are evident please contact Lumissil immediately.
4) Switch between Torch Mode and Flash Mode via corresponding push button on board.

PERFORMANCE DISPLAY

The IS31BL3231 Flash LED Driver can function in Flash Mode or Torch Mode. Torch is set as the default mode.

1) Torch Mode: The White LEDs are working in the Torch Mode when power on. There are 8 blue LEDs showing the intensity level. The intensity of LEDs will be increased at 8 steps by pressing the Bright+ button, and decreased by pressing the Bright- button. Press the Torch button in this mode to operating in the Flash Mode.
2) Flash Mode: The Flash Mode is activated when shut down the Torch Mode. The high brightness LEDs will flash once by clicking the Flash button.

SOFTWARE SUPPORT

Please refer to the integrated evaluation board software. It is pre-programmed for easy set-up and demonstration.

For more information on IS31BL3231, please refer to the device's datasheet.

ORDERING INFORMATION

Part No.	Temperature Range	Package
IS31BL3231-DLS2-EB	-40°C ~ +85°C (Industrial)	DFN-10, Lead-free

Table1: Ordering Information

For pricing, delivery, and ordering information, please contacts Lumissil's analog marketing team at analog@Lumissil.com or (408) 969-6600.
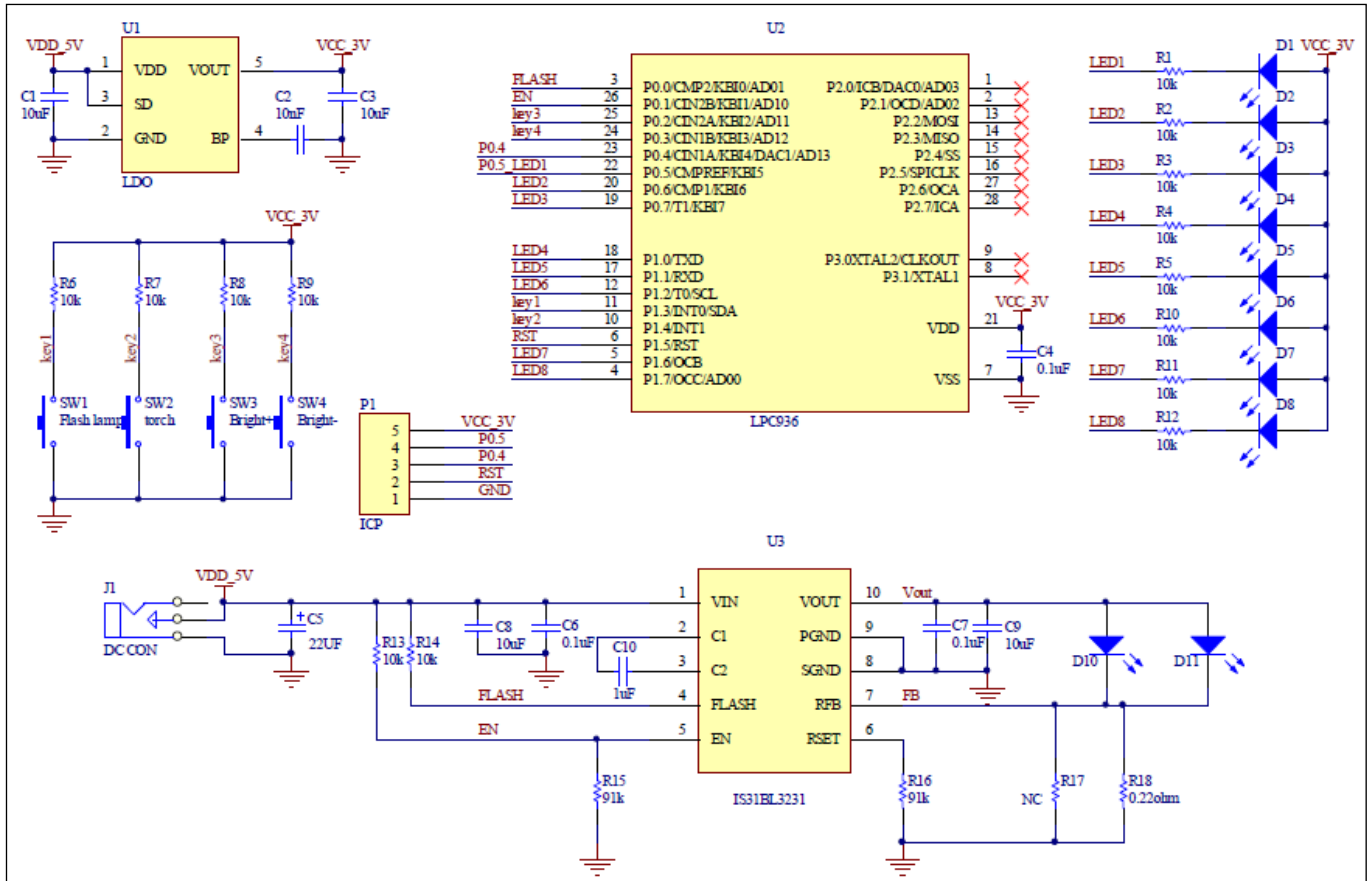

Figure 2: IS31BL3231 Application Schematic

Bill of Materials

Name	Symbol	Description	Qty	Supplier	Part No.
LDO	U1	Low-dropout regulator	1	PAM	PAM3101DAB300
MCU	U2	Microcontroller	1	NXP	P89LPC936
LED Driver	U3	LED Backlighting Driver	1	Lumissil	IS31BL3231
Diode	D1~D8	Diode, LED Blue, SMD	8	Everlight	19-217/BHC-ZL1M2RY/3T
Diode	D10~D11	Diode, LED White, SMD	2	Everlight	EHP-C04/UT01-P01/TR
Resistor	R1~R14	RES,10k,1/16W,±5%,SMD	14		
Resistor	R15,R16	RES,91k,1/16W,±5%,SMD	2		
Resistor	R17	Not Connected	1		
Resistor	R18	RES,0.22R,1/16W,±5%,SMD	1		
Capacitor	C1,C3,C8,C9	CAP,10µF,16V,±20%,SMD	4		
Capacitor	C2	CAP,10nF,16V,±20%,SMD	1		
Capacitor	C4, C6, C7	CAP,0.1µF,16V,±20%,SMD	3		
Capacitor	C5	CAP,22µF,25V,±20%,SMD	1		
Capacitor	C10	CAP,1µF,16V,±20%,SMD	1		

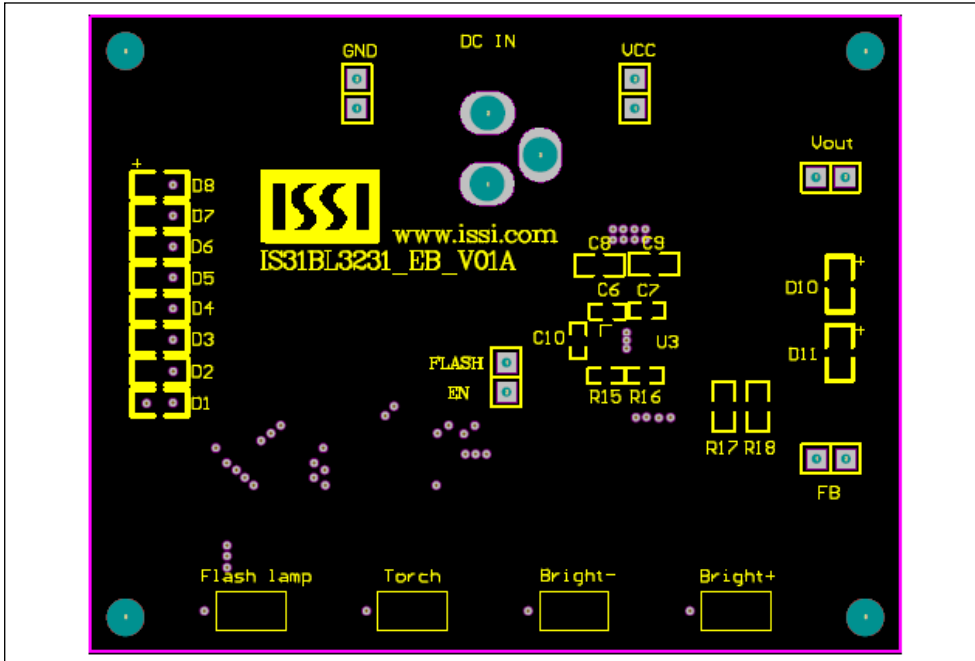*Bill of materials, refer to Figure 2 above.*

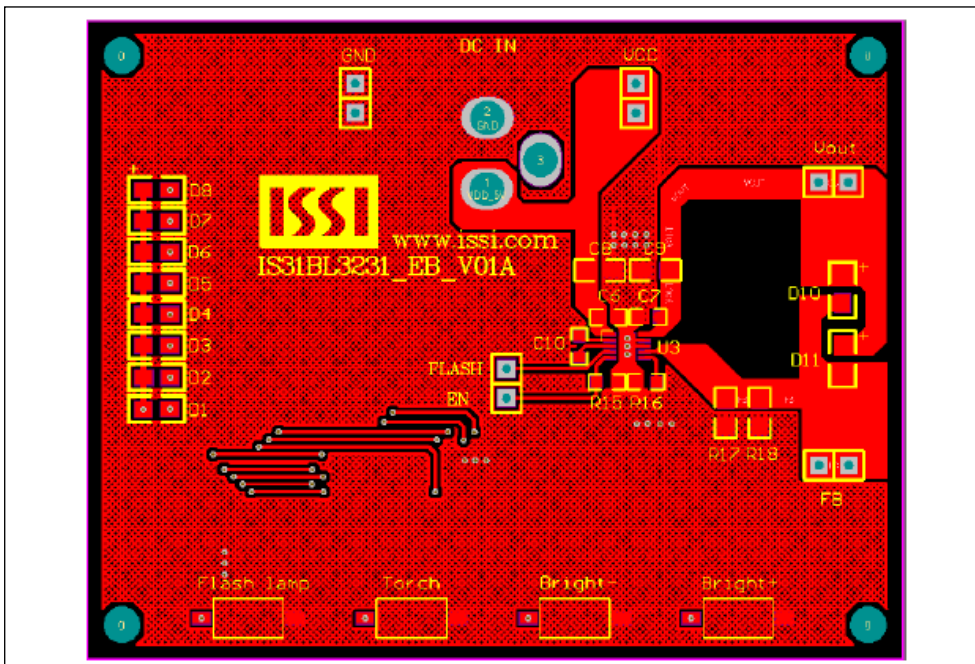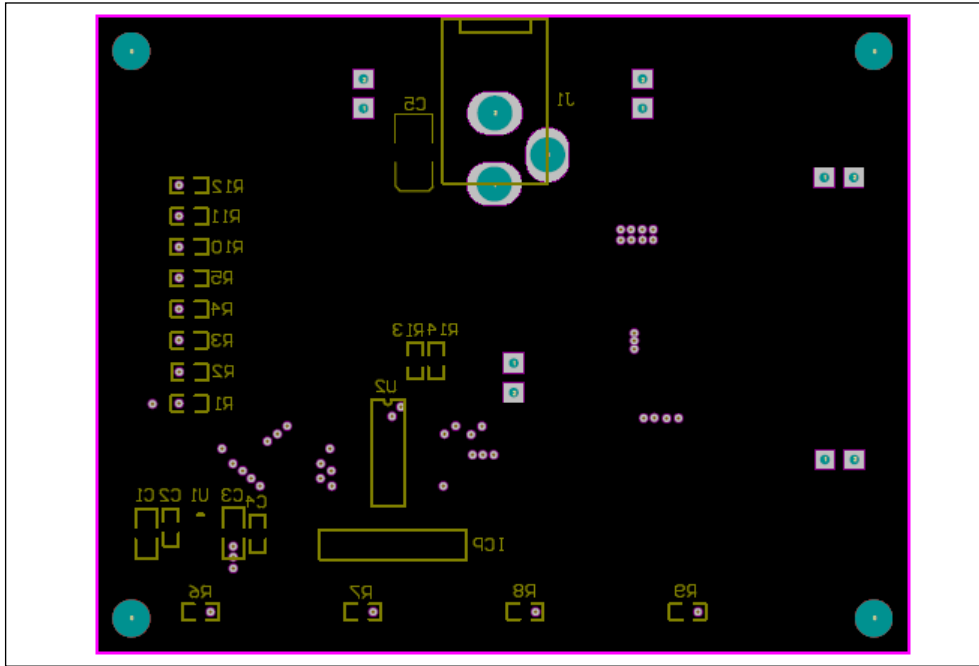*Figure 3: Board Component Placement Guide -Top Layer*

Figure 4: Board PCB Layout- Top Layer

Figure 5: Board Component Placement Guide -Bottom Layer

Figure 6: Board PCB Layout-Bottom Layer