

# DIO5141B

## 1A Buck/Boost Charge Pump LED Driver

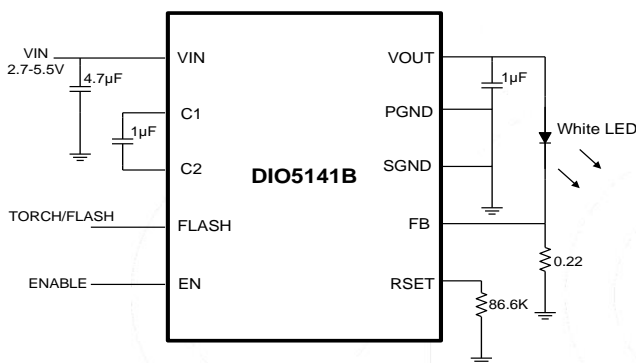
### Features

- Output Current up to 1A
- Up to 90% Efficiency in Torch Mode
- Adjustable FLASH Mode Current
- 1x and 2x Automatic Modes for High Efficiency
- Input Voltage Range: 2.7V to 5.5V
- Minimum External Components: No Inductors
- High Frequency Operation: 2MHz
- Low 47mV Reference for Low Loss Sensing
- $I_q < 1\mu A$  in Shutdown
- Built-In Soft Start Limits Inrush Current
- Low Input and Output Ripple and Low EMI
- Output Over Voltage Protection
- Over-current and Over-temperature Protection
- Available in Green DFN3x3-10L Package

### Applications

- Cellular Telephones
- Digital Still Cameras
- Mobile Internet Devices
- USB Bus-Powered Chargers

### Block Diagram



### Descriptions

The DIO5141B is a current-regulated charge pump ideal for powering high brightness LEDs for camera flash applications. The charge pump can be set to regulate two current levels for FLASH and TORCH modes.

The DIO5141B automatically switches modes between step-up and step-down ensuring that LED current does not depend on the forward voltage. It switches at 2MHz, allowing the use of tiny components. The supply voltage ranges from 2.7V to 5.5V and is ideally suited for all applications powered by a single Li-Ion battery cell or three to four NiCd, NiMH, or Alkaline battery cells.

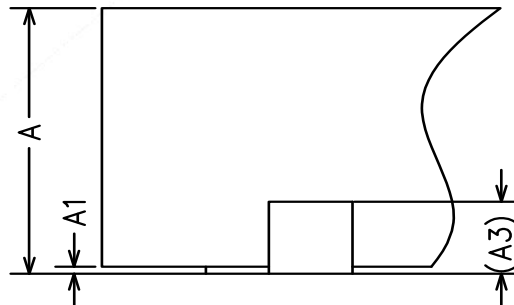
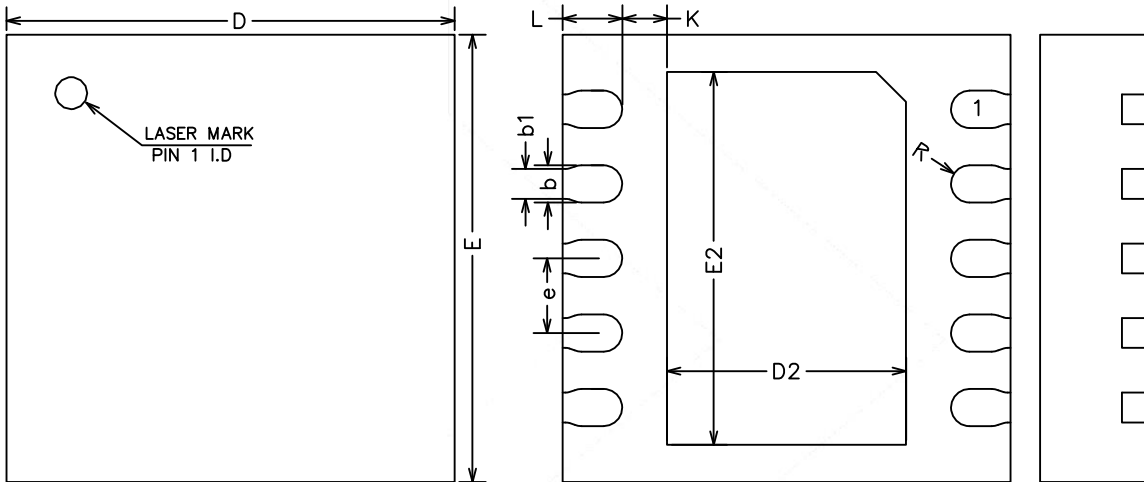
The DIO5141B also features a very low shutdown current, an automatic soft-start mode to limit inrush current, as well as over current, over voltage and over thermal shutdown control. A low current sense reference voltage (47mV) allows the use of small 0603 current sensing resistors.

The DIO5141B is available in Green DFN3x3-10L package and is specified over an ambient temperature range of -40°C to +85°C.

## Ordering Information

Order Part Number	Top Marking		T <sub>A</sub>	Package	
DIO5141BCD10	D51B	Green	-40 to +85°C	DFN-10	Tape & Reel, 5000

## Physical Dimensions: DFN-10 3\*3



COMMON DIMENSIONS (UNITS OF MEASURE=MILLIMETER)			
Symbol	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0	0.02	0.05
A3	0.20REF		
b	0.20	0.25	0.30
b1	0.20REF		
D	2.90	3.00	3.10
E	2.90	3.00	3.10
D2	1.50	1.60	1.70
E2	2.40	2.50	2.60
e	0.40	0.50	0.60
K	0.20	-	-
L	0.30	0.40	0.50
R	0.13	-	-

