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## LED flashlight evaluation board based on the L6920DA

Data Brief

### Features

- High efficiency step-up converter
- Powered from two cell batteries
- Output voltage  $V_{out} = 3.5\text{ V}$
- Minimum operating input voltage  $V_{in} = 1\text{ V}$

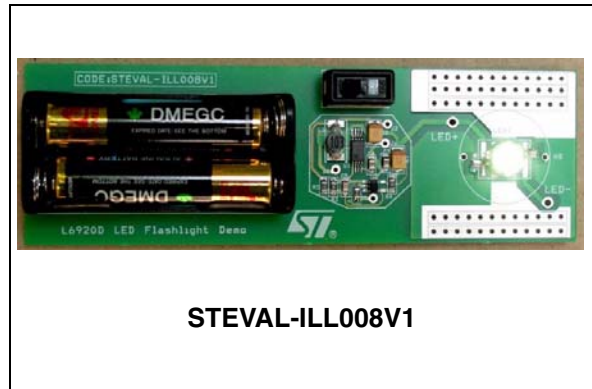
### Description

White LEDs are gaining popularity as sources of illumination due to their high efficiency and reliability.

Typical forward voltage drop across a white LED is approximately 3.5 V. When these LEDs are powered from a single or two cell batteries, a boost converter is needed to boost the voltage to drive the LEDs.

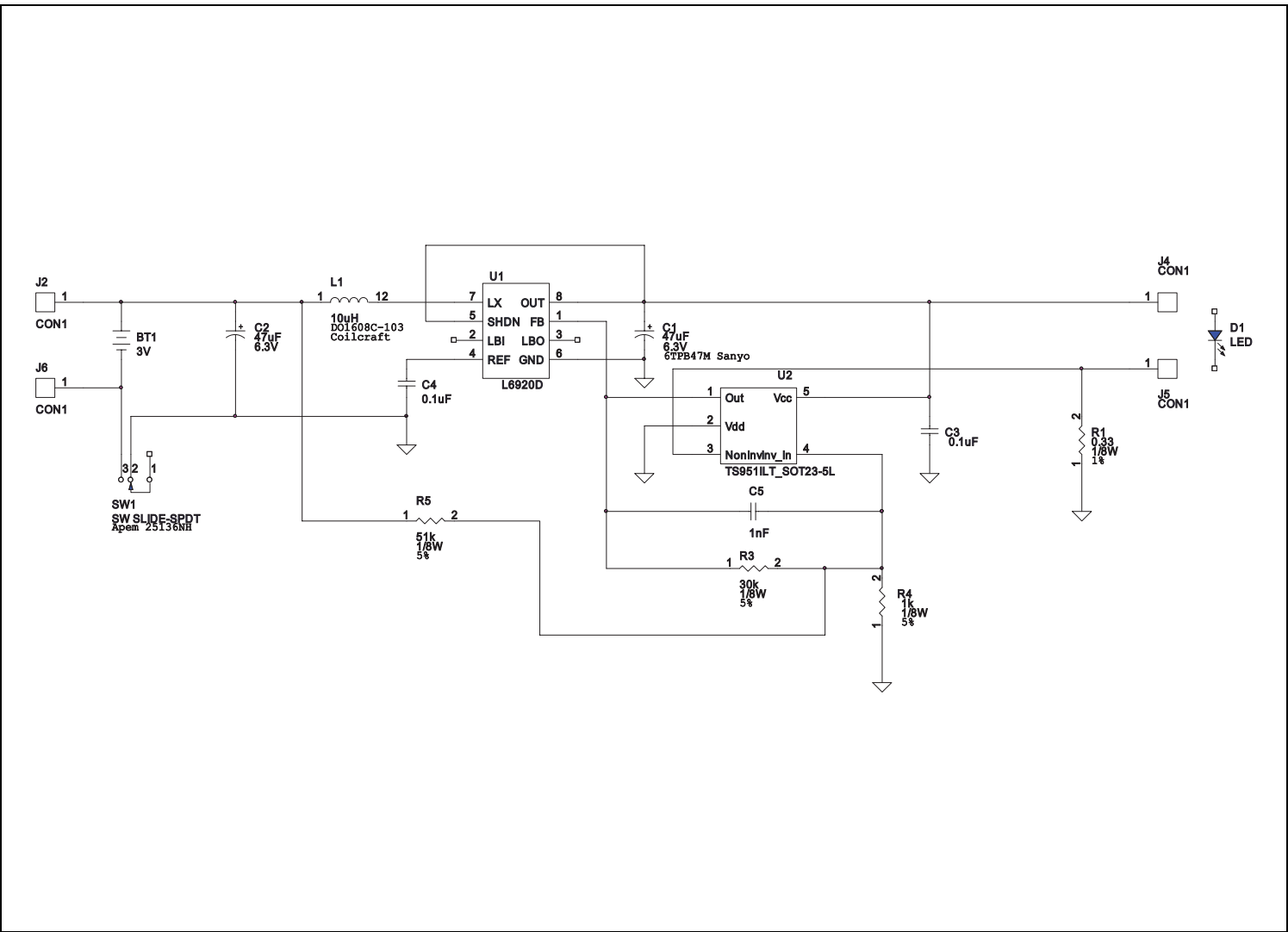
This evaluation board, based on the L6920DA, implements a high efficiency step-up converter which requires very few passive components to perform the conversion from the battery voltage to the selected output voltage or current. Startup is guaranteed at 1 V and the device operates down to 0.6 V. The device has a very low quiescent current of only 10  $\mu\text{A}$ .

An internal synchronous rectifier is implemented with a 120 m $\Omega$  P-channel MOSFET, replacing the conventional boost diode, to improve efficiency. This also could reduce the cost of the application since no external diode required.



# 1 Circuit schematic

Figure 1. Schematic



## 2 Revision history

Table 1. Document revision history

Date	Revision	Changes
27-Feb-2008	1	Initial release.

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