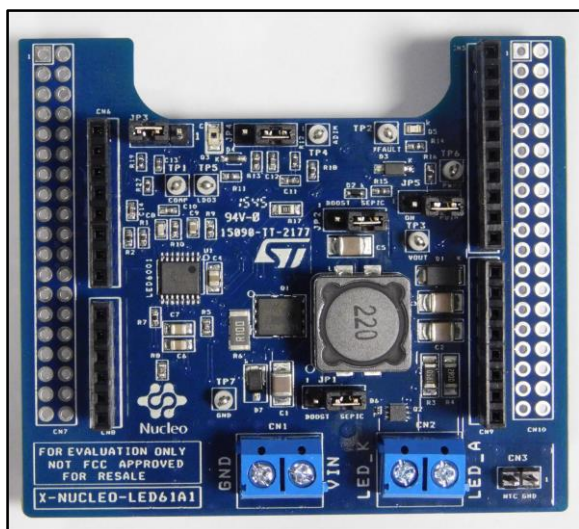


DC-DC LED driver expansion board based on LED6001 for STM32 Nucleo

Data brief



Description

The X-NUCLEO-LED61A1 is an expansion board designed to provide a sample application for the compact LED driver based on LED6001. The expansion board is equipped with a single-channel, constant-current LED driver for boost or SEPIC topologies. The X-NUCLEO interfaces with the STM32 microcontroller. It is compatible with the Arduino™ UNO R3 connector.

The brightness of the LED string connected to its output can be controlled through a PWM signal (0 % - 100 % dimming) or a control voltage (analog dimming). Open/Short LED fault, feedback disconnection, LED overcurrent and output-to-ground short-circuit (SEPIC only) faults are detected and managed through the LED driver.

The expansion board is designed to provide examples for applications involving several LEDs arranged in a single string (e.g., indoor and architectural LED lighting, off-grid street lighting, emergency LED lighting, white goods, gaming, etc.).

Features

- Single channel LED Driver, 350 mA constant current
- PWM and analog brightness control with the STM32 Nucleo board
- Selectable boost or SEPIC converter topology
- Up to 92% efficiency (boost converter)
- Open LED, feedback disconnection, LED overcurrent and output-to-ground short-circuit (SEPIC only) fault detection and management
- Onboard photo-transistor for ambient light switch function (analog dimming)
- Wide DC input voltage range: 8 V – 24 V
- Compatible with Arduino™ UNO R3 connectors
- Compatible with STM32 Nucleo boards
- RoHS compliant



Figure 1: X-NUCLEO-LED61A1 board schematic (1 of 3)

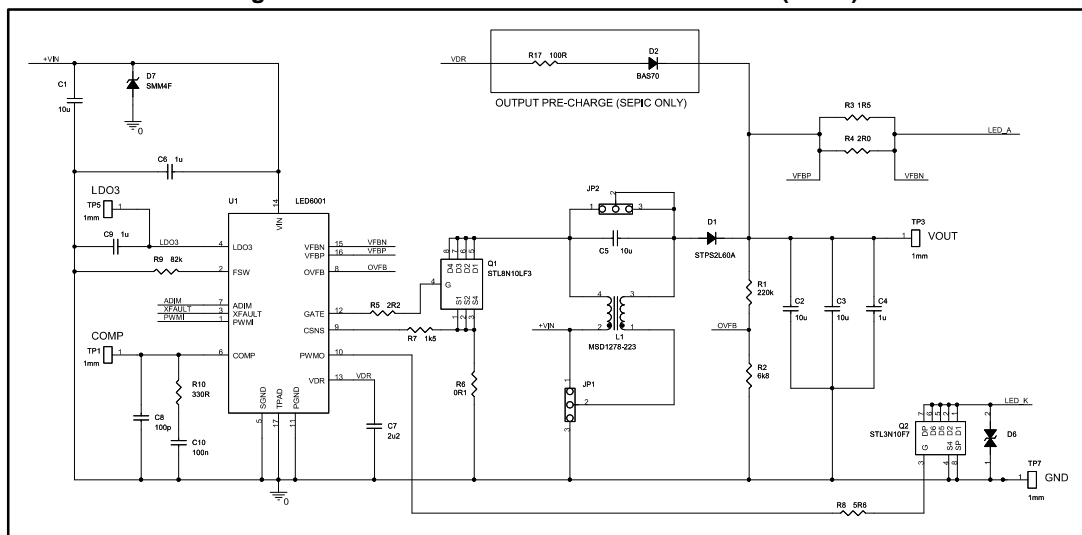


Figure 2: X-NUCLEO-LED61A1 board schematic (2 of 3)

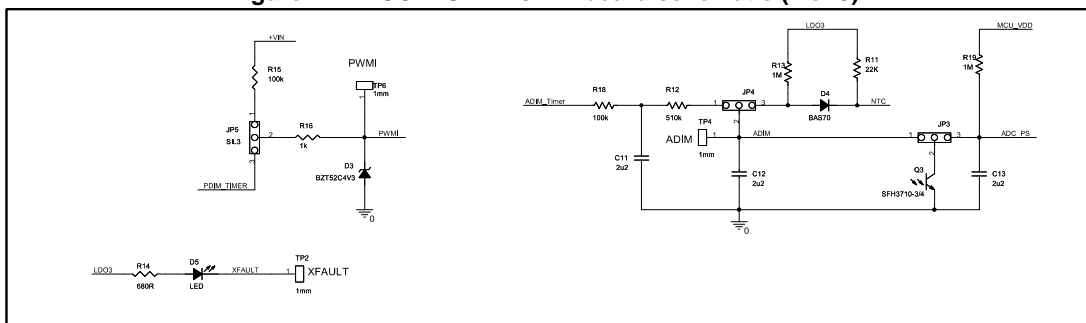
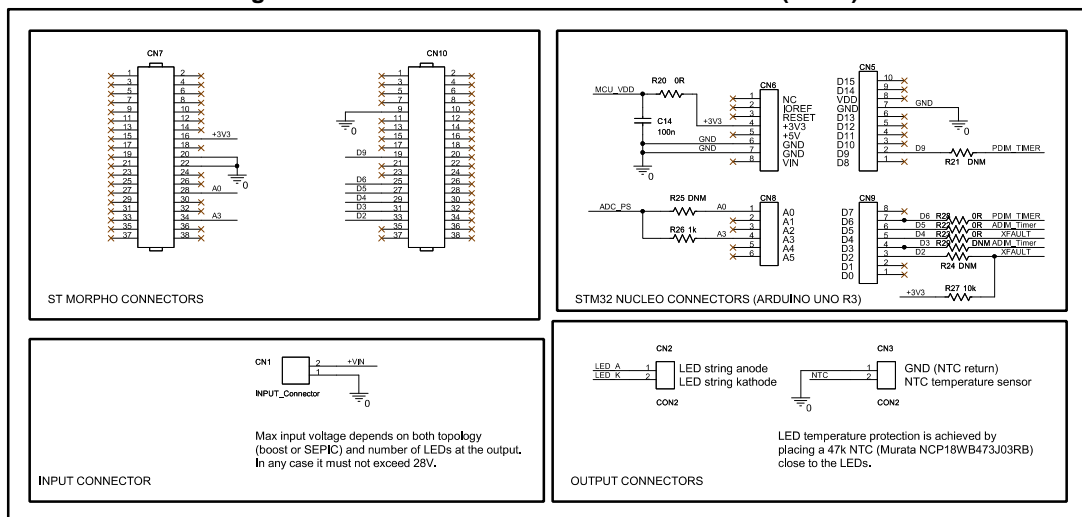


Figure 3: X-NUCLEO-LED61A1 board schematic (3 of 3)



Revision history

Table 1: Document revision history

Date	Version	Changes
11-Dec-2015	1	Initial release.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2015 STMicroelectronics – All rights reserved

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[STMicroelectronics:](#)

[X-NUCLEO-LED61A1](#)