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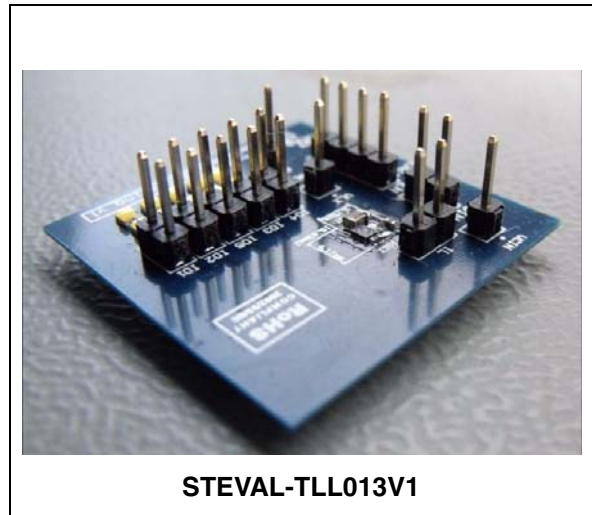
STEVAL-TLL013V1

5-channel (2 LEDs in series per channel) step-up white LED driver demonstration board based on the STLED25

Data brief

Features

- Operating input voltage range from 2.3 V to 5.5 V
- $\pm 7.5\%$ LED current accuracy
- Two LEDs in series per channel
- High-side current source
- Up to 125 mA of total LED current
- 86% efficiency at 100 mA
- PWM dimming with automatic shutdown time window
- 2.5 MHz switching frequency
- RoHS compliant



Description

The STEVAL-TLL013V1 demonstration board was designed to demonstrate the performance of the STLED25, a fixed frequency, high-efficiency, boost DC-DC converter with five parallel high-side current sources.

The STLED25 is able to provide 125 mA of total current with a maximum voltage of 7.5 V on each channel.

Each current source supports single or dual LED connections. The output voltage of the step-up converter is automatically set at 100 mV above the highest voltage required on any driver to guarantee the proper operation of the linear current sources. The device implements a self-test feature to detect any failure of the LEDs and to disable the related channel.

The failure status is reset as soon the IC is disabled. This mode of failure detection allows the device to continue operating driver channels that are operating normally, while avoiding excessive power consumption or associated thermal issues.

1 Schematic circuit

Figure 1. Application schematic

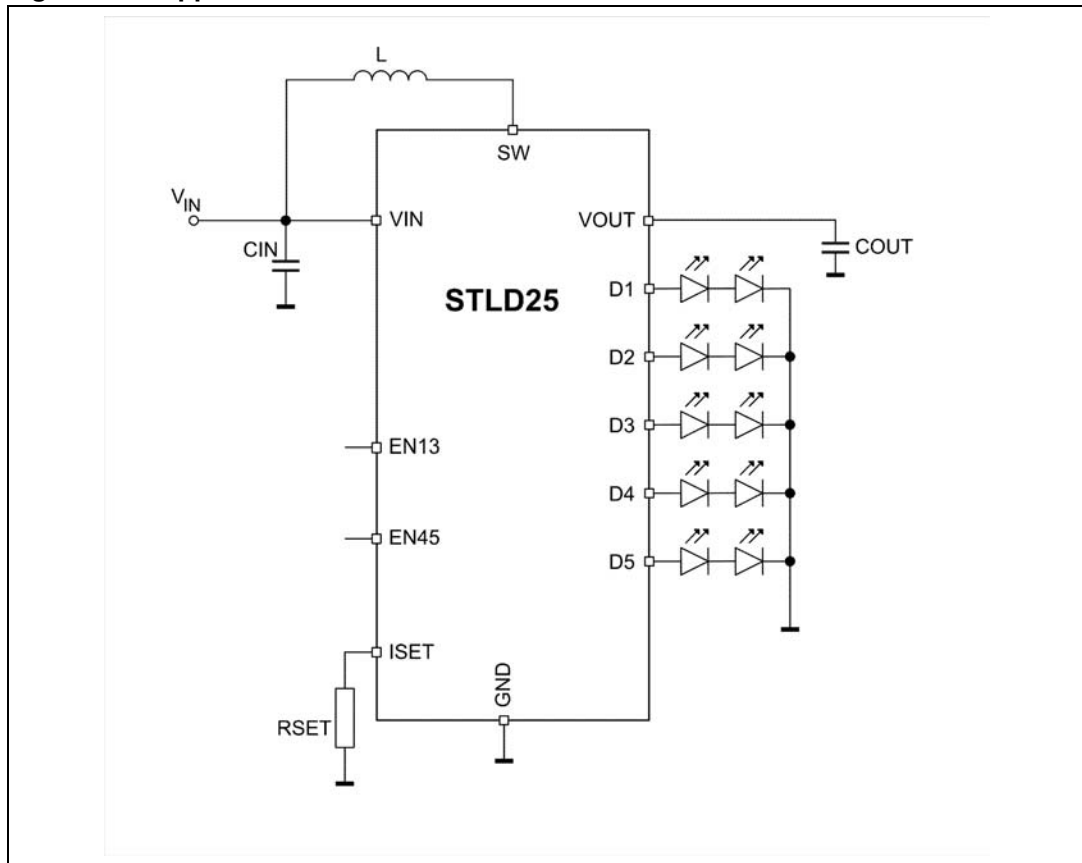


Table 1. Typical external components

Component	Manufacturer	Part number	Value	Size
C_{IN}	Murata	GRM155R60J155M	1.5 μ F	0402
C_{OUT}	Murata	GRM219R61A116U	10 μ F	0805
L	Samsung	CIG21K4R7SCE	4.7 μ H	0805
R_{SET}			25 k ⁽¹⁾	0402

1. For 20 mA per branch.

2 Revision history

Table 2. Document revision history

Date	Revision	Changes
21-Sep-2011	1	Initial release.

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