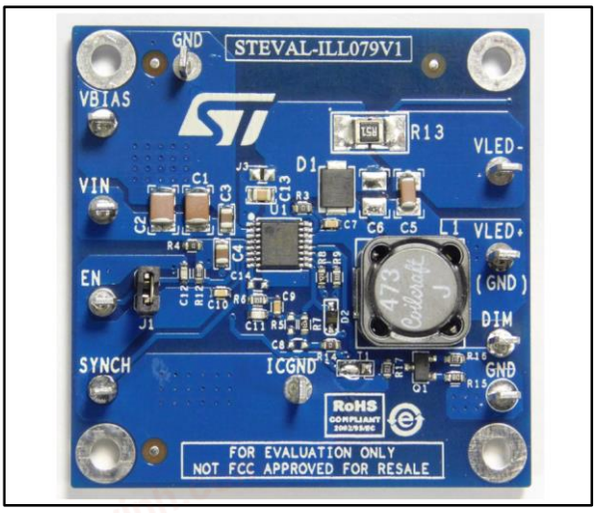
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STEVAL-ILL079V1

0.5 A, inverting buck-boost LED driver board based on the LED6000

Data brief



Features

- 15 V to 30 V input voltage
- Negative buck-boost topology
- 8 white LEDs, 0.5 A programmed current
- 500 kHz switching frequency
- Digital dimming
- Compliant with ceramic output capacitors
- 180° out of phase synchronization available
- Auto recovery overcurrent and thermal protection
- RoHS compliant

Description

The STEVAL-ILL079V1 product evaluation board is based on LED6000 monolithic current source for high power LED driving. Thanks to the wide device input voltage range, alternative topologies like inverting buck-boost can be effectively implemented. Eight white LED (30 V max.) can be powered by 0.5 A programmed current. Digital dimming is implemented by driving the dedicated DIM pin and the necessary level shifting is achieved with inexpensive external circuitry.

The LED6000 is a 61 V asynchronous switching regulator, with an embedded power MOSFET, designed to source up to 3 A DC current depending on the application conditions. The 250 mV typical RSENSE voltage drop, the embedded switch-over feature on the VBIAS pin and the light load management (pulse skipping) are intended to maximize power conversion efficiency across the entire load range.

The current limit threshold and the switching frequency are adjustable for application optimization. The device includes an internal 250 kHz oscillator that can be externally adjusted up to 1.5 MHz. The size of the overall application is minimized thanks to the high switching frequency and its compatibility with ceramic output capacitors. Two LED6000 regulators can be synchronized in a 180° out-of-phase configuration for reduced total input RMS current.

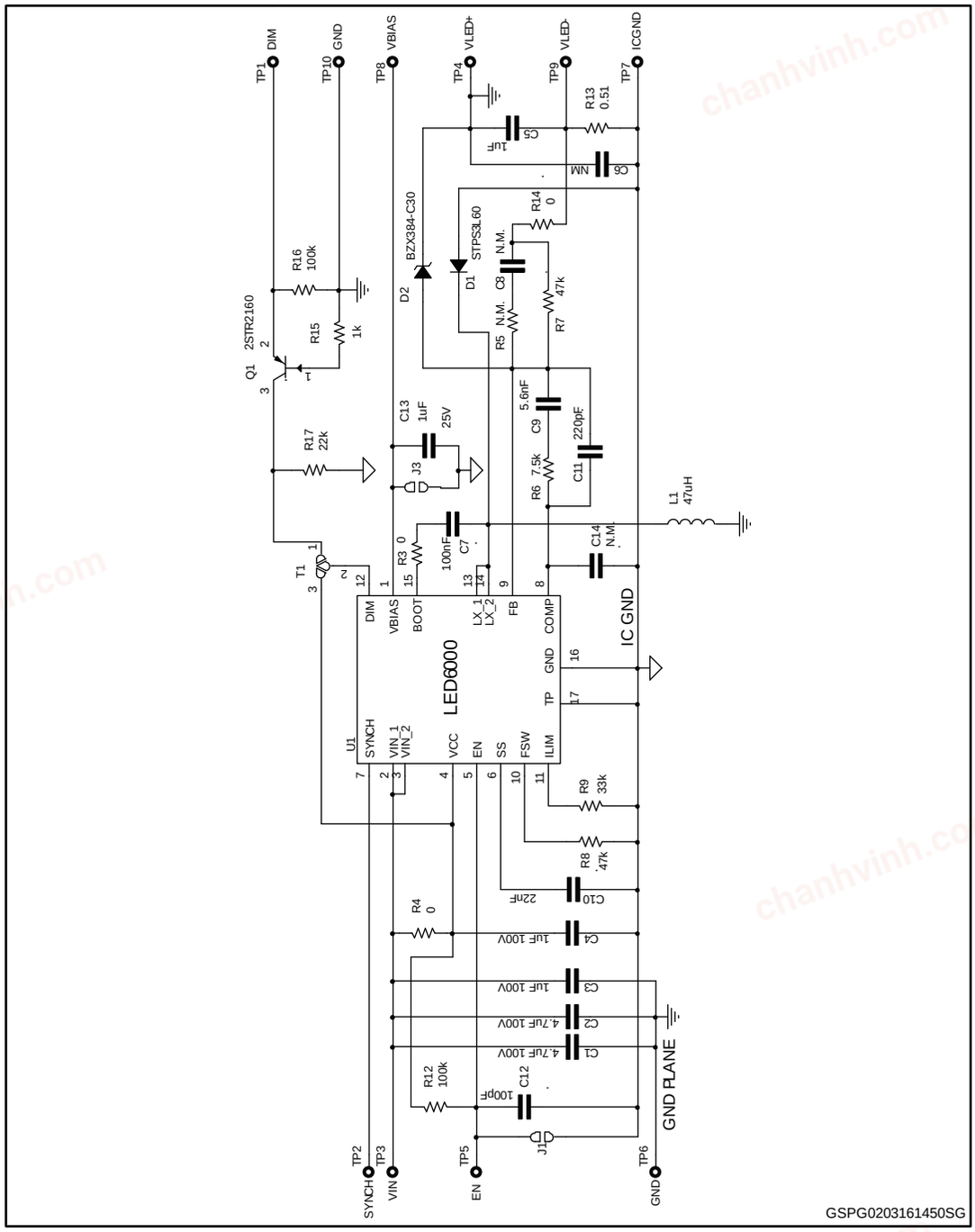
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1 Schematic diagram

Figure 1: STEVAL-ILL079V1 circuit schematic



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2 Revision history

Table 1: Document revision history

Date	Version	Changes
04-Mar-2016	1	Initial release.

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