

2 A, high efficiency single inductor buck-boost DC-DC converter and high brightness white LED driver based on the STBB3JCC

Data brief



Description

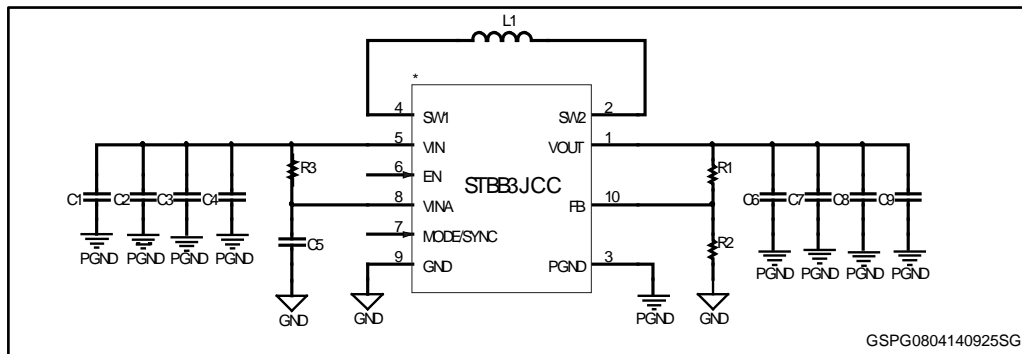
The STEVAL-ISA141V2 is a product evaluation board based on the STBB3JCC fixed frequency, high efficiency, buck-boost DC-DC converter. The STBB3JCC is capable of driving a HB WLED from a 1.8 V to 5.5 V input voltage supplied by a one cell Li-Ion battery. Thanks to its high switching frequency (2 MHz) it is possible to reduce the size and cost of the external power components. Low FB voltage (100 mV) reduces power dissipation across the external sensing resistor and maximizes the LED current.

Features

- 100 mV voltage feedback
- Input voltage range from 1.8 V to 5.5 V
- 2 A output current at 3.3 V in buck mode ($V_{IN} = 3.6 V$ to 5.5 V)
- 800 mA output current at 3.3 V in boost mode ($V_{IN} 2.0 V$)
- Typical efficiency greater than 94%
- $\pm 2\%$ DC feedback voltage tolerance
- Automatic transition between step-down and boost mode
- Adjustable output voltage from 1.2 V to 5.5 V
- Power save mode (PS) at light load
- 2.0 MHz fixed switching frequency
- Adjustable switching frequency up to 2.4 MHz (by external synchronous square signal)
- Device quiescent current less than 50 A
- Load disconnect during shutdown
- Shutdown function and soft-start
- Shutdown current $< 1 A$
- Available in Flip Chip 20, pitch = 0.4 mm
- RoHS compliant

1 Schematic diagram

Figure 1: STEVAL-ISA141V2 circuit schematic



2 Revision history

Table 1: Document revision history

Data	Revision	Changes
27-May-2014	1	Initial release

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