STEVAL-ILL038V2

LED resonant driver evaluation board based on the L6585DE

Data brief



Features

- Extended input mains range: 90 ~ 265 V_{AC}, frequency 50/60 Hz
- Output voltage: 48 V @ 2.08 A
- Long life, electrolytic capacitors not used
- Mains harmonics: in accordance with EN61000-3-2 Class-D
- Efficiency at full load: greater than 90%
- RoHS compliant

Description

The STEVAL-ILL038V2 is a product evaluation board that implements a 100 W LED switched-mode power supply (SMPS) based on the L6585DE. This device embeds a high performance transition mode (TM) power factor correction (PFC) controller, half-bridge (HB) controller and all the relevant drivers required to build a combo IC.

The device embeds a wide range of features to provide an energy saving and cost-effective solution for LED SMPS.

The PFC section of this IC has superior performance in terms of harmonic content mitigation. High power factor (PF) and total harmonic distortion (THD) reduction are obtained as required by international standards, especially concerning universal input voltage operation. The TM PFC operation and highly efficient performance of the half-bridge topology provide very good overall circuit efficiency.

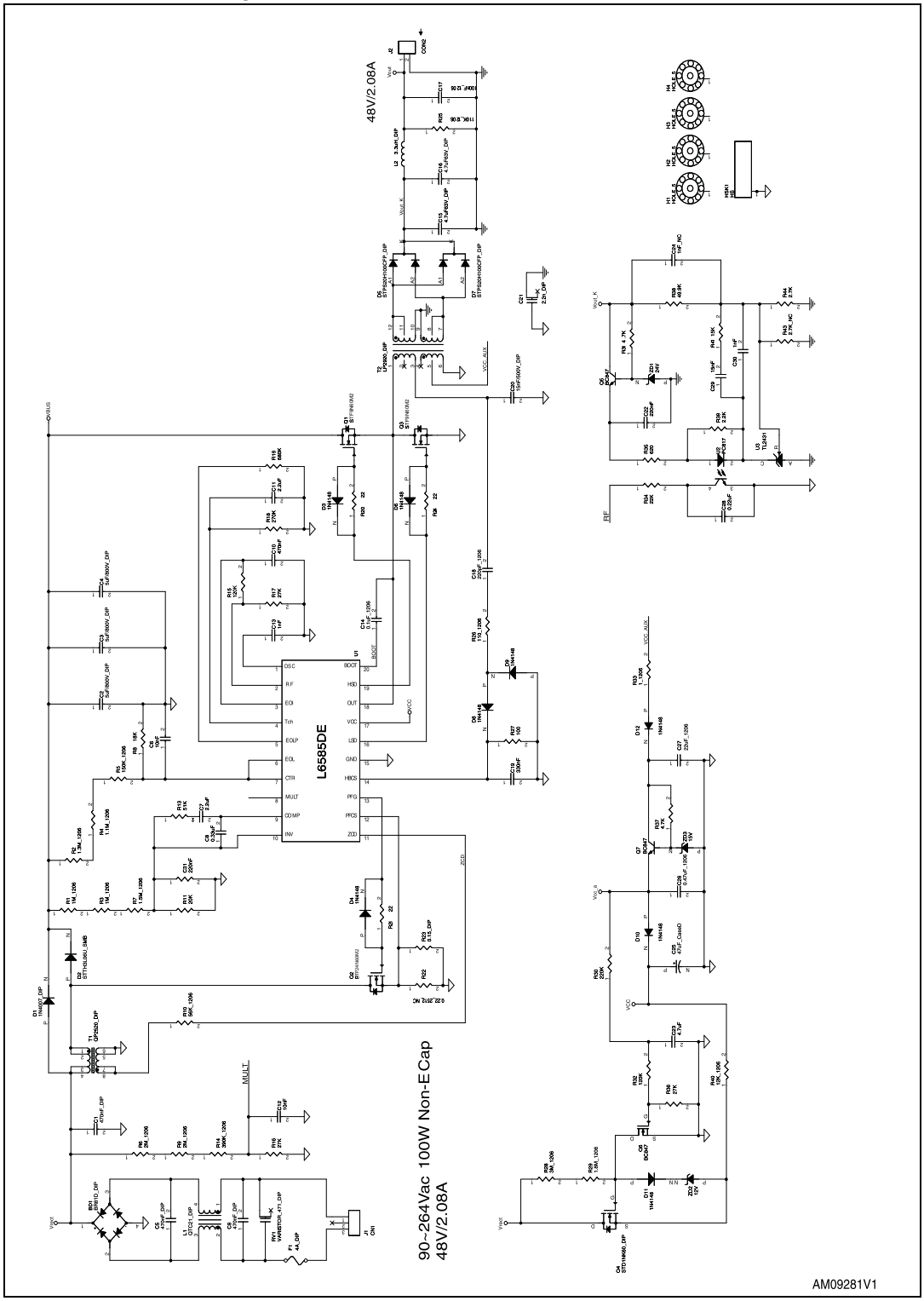
In order to guarantee the maintenance-free operation required by this type of application during useful LED life, the STEVAL-ILL038V2 board does not use electrolytic capacitors; these are replaced by safer film capacitors.

Other features, such as half-bridge overcurrent with frequency increase and PFC overvoltage, allow designers to build a reliable, flexible solution with a reduced component count.

For further information contact your local STMicroelectronics sales office. www.st.com

1 Schematic diagram

Figure 1. STEVAL-ILL038V2 circuit schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
07-Aug-2014	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.

© 2014 STMicroelectronics – All rights reserved