

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.

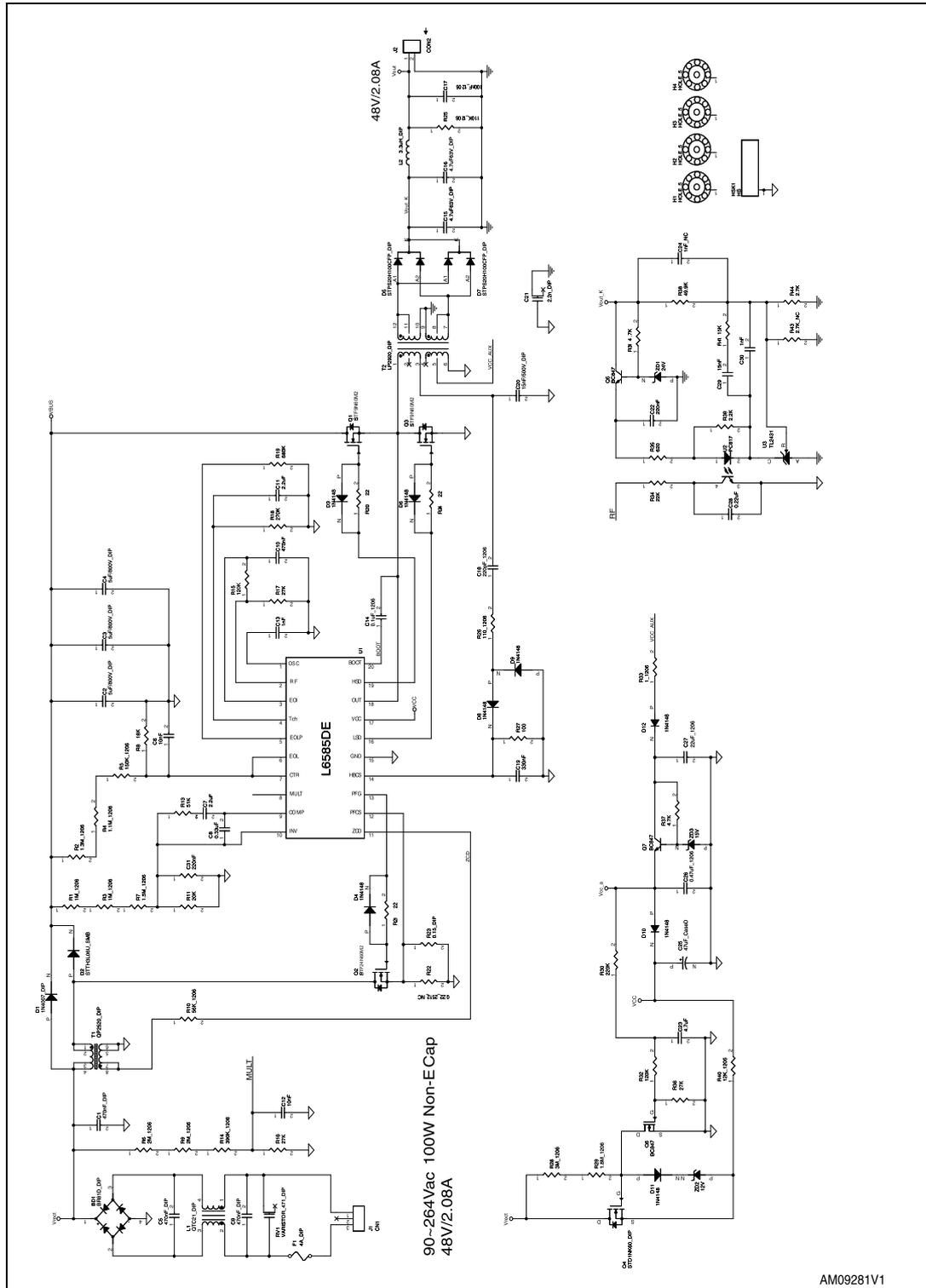
The PFC section of this IC has superior performance in terms of harmonic content mitigation. High power factor (PF) and total harmonic distortion (THD) reduction are obtained as required by international standards, especially concerning universal input voltage operation. The TM PFC operation and highly 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.

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.

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