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STEVAL-ILB005V2

Demonstration board for the L6585DE combo IC for PFC and ballast control

Data Brief

Features

- Input voltage: 88 Vac - 277 Vac
- Input frequency: 50 Hz - 60 Hz
- Output power: 54 W
- Expected efficiency: 90%
- Expected Input power: 60 W
- Minimum PF required: 0.95
- Maximum THD: 8%
- Lamp voltage (run mode): 110 Vrms
- Lamp current (run mode): 455 mArms
- Maximum ignition voltage: 900 Vpk
- Maximum preheating voltage: < 240 Vac
- Preheating time: 1 s
- Ignition time: 60 - 100 ms

STEVAL-ILB005V2

Description

Requirements for modern fluorescent lamp electronic ballasts focus on driver efficiency and safety aspects.

Previous dedicated ICs for ballast applications allowed designers to achieve good driver efficiency, but they required a lot of external circuitry to obtain good power factor correction, low THD and a full set of protection features.

The STEVAL-ILB005V2 demonstration board is based on the new L6585DE combo IC for ballast applications, which offers designers a high-performance PFC stage, and a high capability, fully programmable, half-bridge high-voltage driver. The device is also equipped with a full set of protection features.

Designed in high-voltage BCD off-line technology, the L6585DE embeds a PFC controller, a half-bridge controller, the relevant drivers and all the logic circuitry necessary to build an electronic ballast.

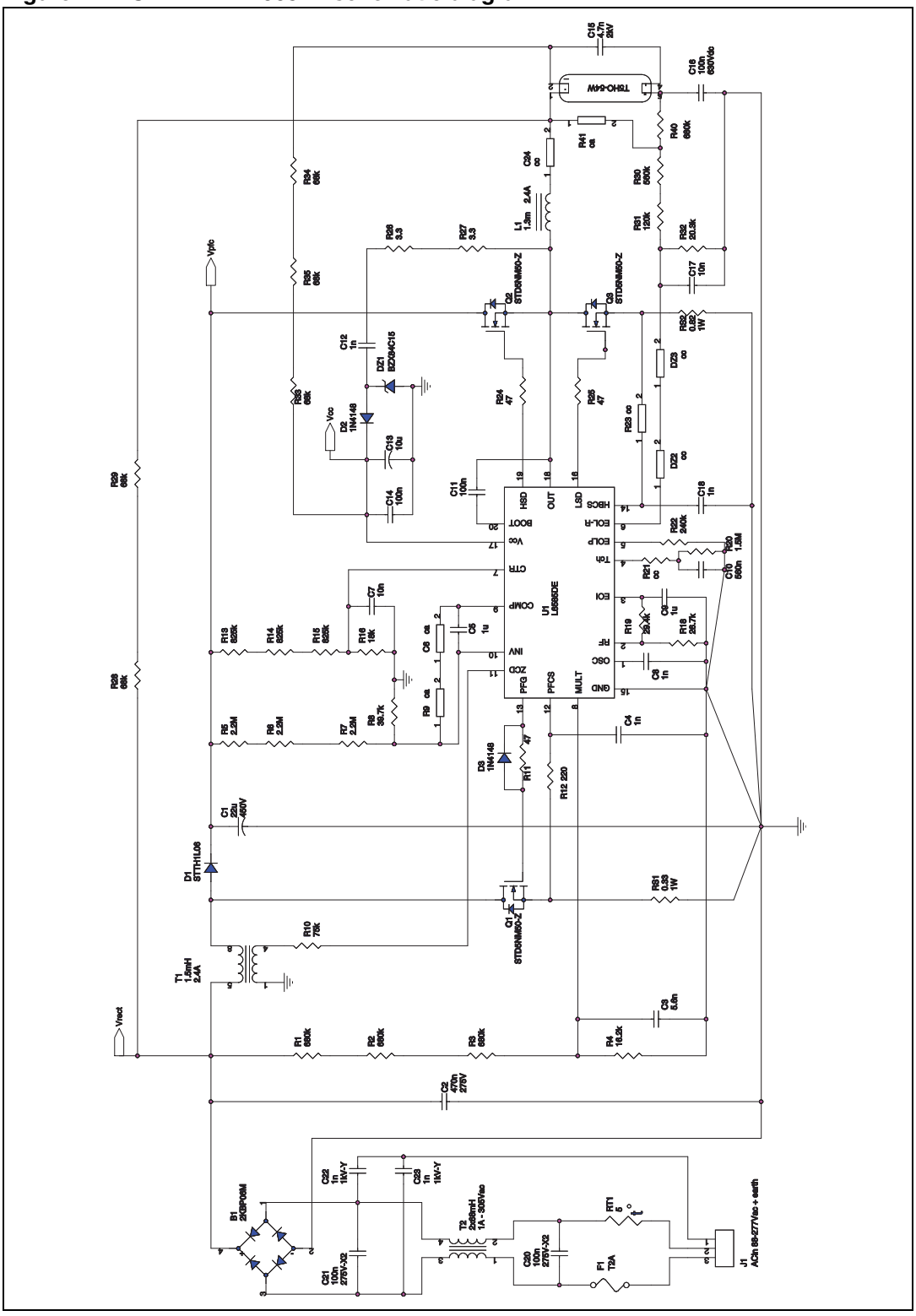
Another important feature of the IC is its capability to control and limit the lamp voltage during the ignition phase.

The pre-heating and ignition durations are independently configurable, as are the half-bridge switching frequencies for each operating phase (pre-heating, ignition and normal mode).

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

1 Schematic diagram

Figure 1. STEVAL-ILB005V2 schematic diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
24-Feb-2009	1	Initial release
18-Mar-2009	2	Updated main product on the title and in description

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