



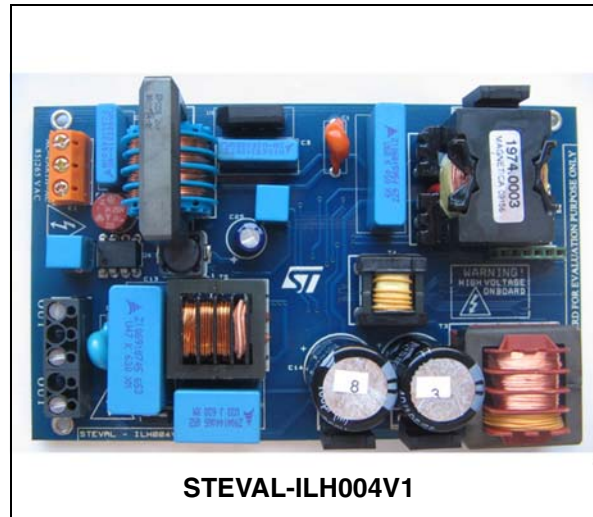
STEVAL-ILH004V1

70 W electronic ballast for metal halide lamp (HID)
based on the L6382D5 and ST7FLITE49K2

Data brief

Features

- Minimum mains voltage (rms value): 85 V
- Maximum mains voltage (rms value) : 265 V
- Minimum mains frequency(f_{min}): 47 Hz
- Expected bridge efficiency (H-bridge): 95%
- Rated lamp power (P_{lamp}) : 70 W
- Rated output power: 73 W
- Output current: 0.18 A
- Regulated DC output voltage (V_{out}): 410 V
- Maximum output low-frequency V_{out} ripple: 20 V
- PFC minimum switching frequency: 30 kHz
- Expected PFC efficiency 96 %
- Expected input section efficiency: 99%
- Expected power factor: 0.99
- RoHS compliant



Description

The STEVAL-ILH004V1 demonstration board implements a digital ballast for a 70 W HID lamp (sodium or metal halide) used in general lighting applications. The ballast is composed of a boost converter (power factor controller PFC) working in transition mode and an inverter composed of a half-bridge that drive the lamp in low-frequency square wave.

Both the half-bridge and the PFC stage are managed by the ST7LITE49K2 that controls the L6382D5, activating all the power switches.

1 Electrical schematics

Figure 1. PFC schematic

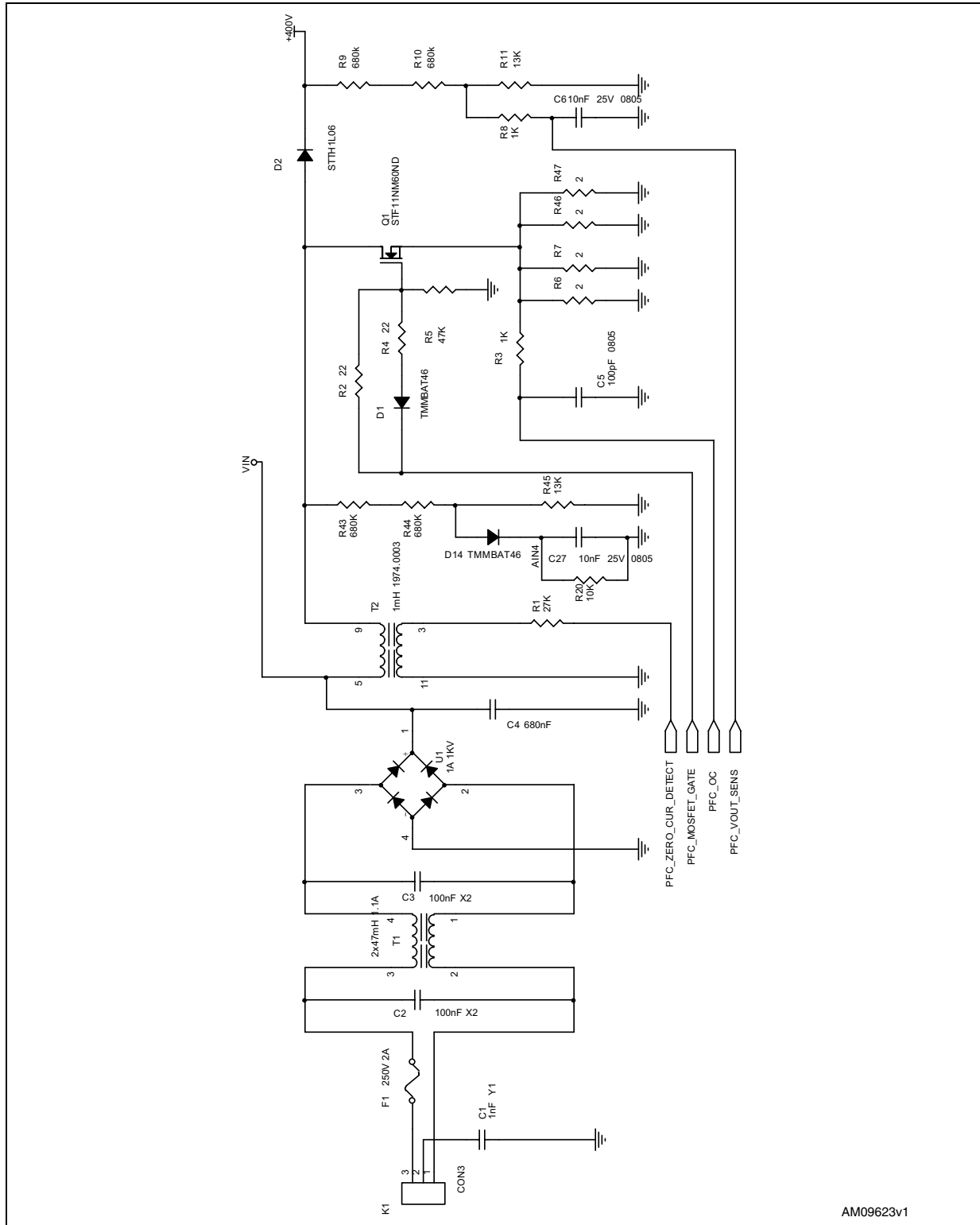


Figure 2. Half-bridge schematic

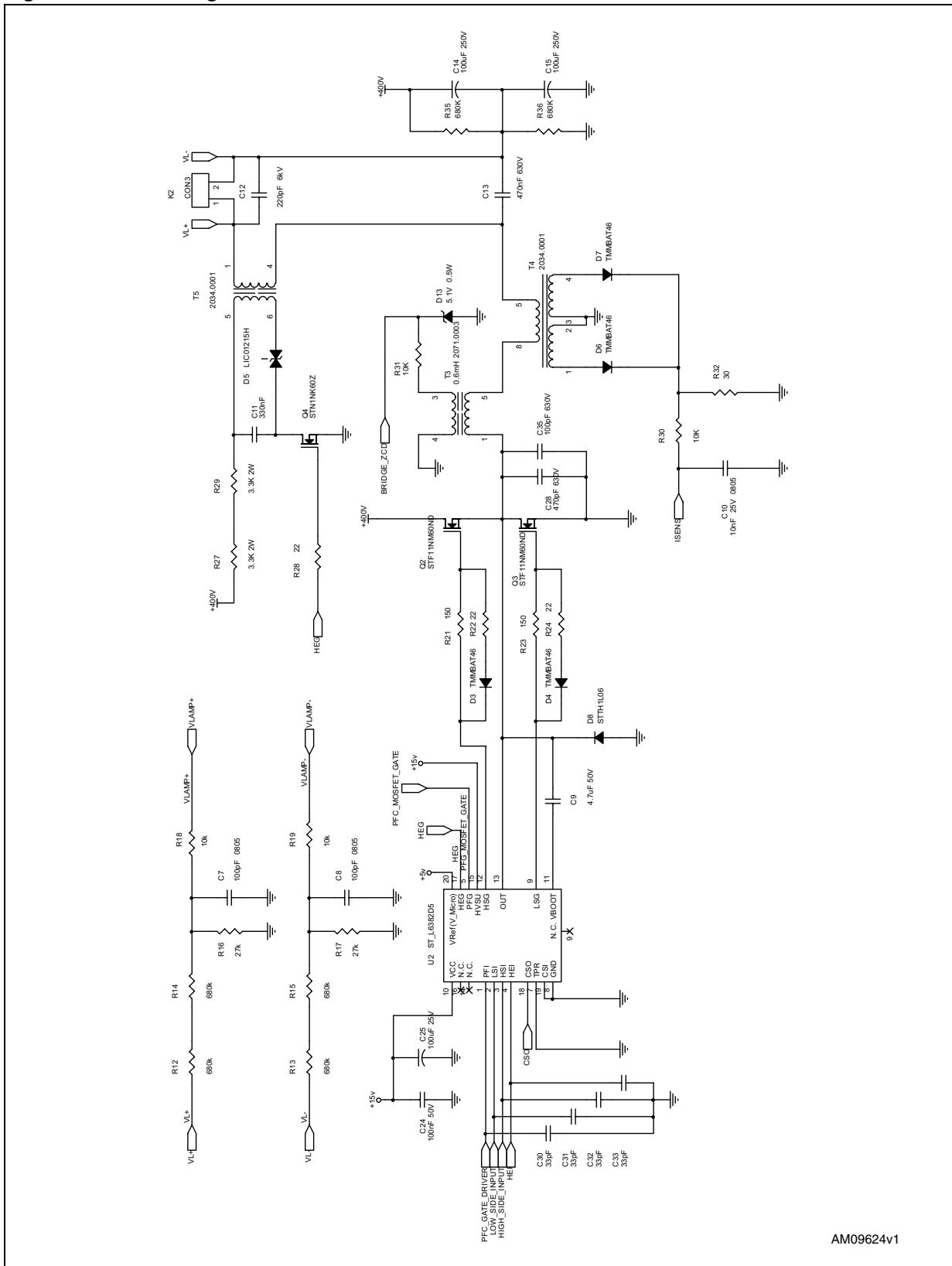
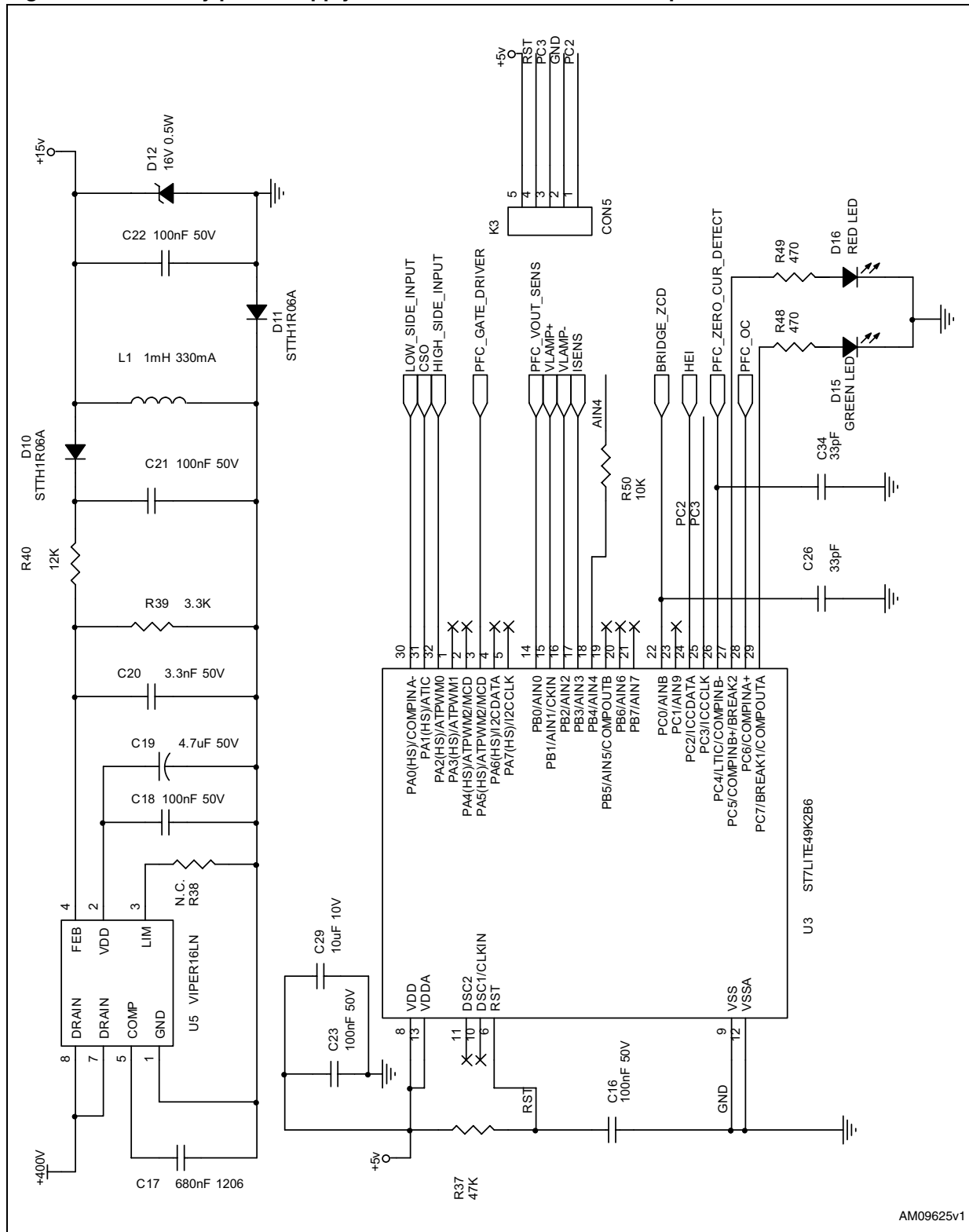


Figure 3. Auxiliary power supply schematic and microcontroller pin functions



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
06-Oct-2011	1	Initial release.

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