



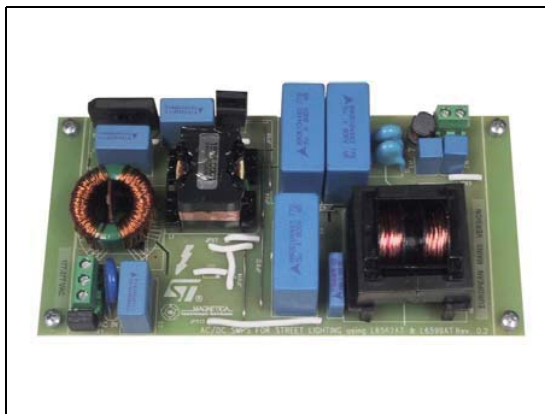
STEVAL-ILL052V1

48 V - 130 W high efficiency converter with PFC for LED street lighting applications based on L6562 and L6599 - European version

Data brief

Features

- Extended European input mains range: 177 to 277 V_{AC} - frequency 45 to 55 Hz
- Output voltage: 48 V at 2.7 A
- Long-life electrolytic capacitors not used
- Mains harmonics: in accordance with EN61000-3-2 Class C
- Efficiency at full load: greater than 90%
- EMI: in accordance with EN55022 Class B
- Safety: double insulation, in accordance with EN60950, SELV
- Dimensions: 75 x 135 mm, 30 mm maximum component height
- No heatsinks needed
- PCB: single side, 35 μ m, FR-4, mixed PTH/SMT
- RoHS compliant



The STEVAL-ILL052V1 demonstration board also provides protection against overload or short-circuit, open-loop by each stage, or input overvoltage, with auto-restart.

Description

The STEVAL-ILL052V1 demonstration board implements a 130 W LED power supply for street lighting.

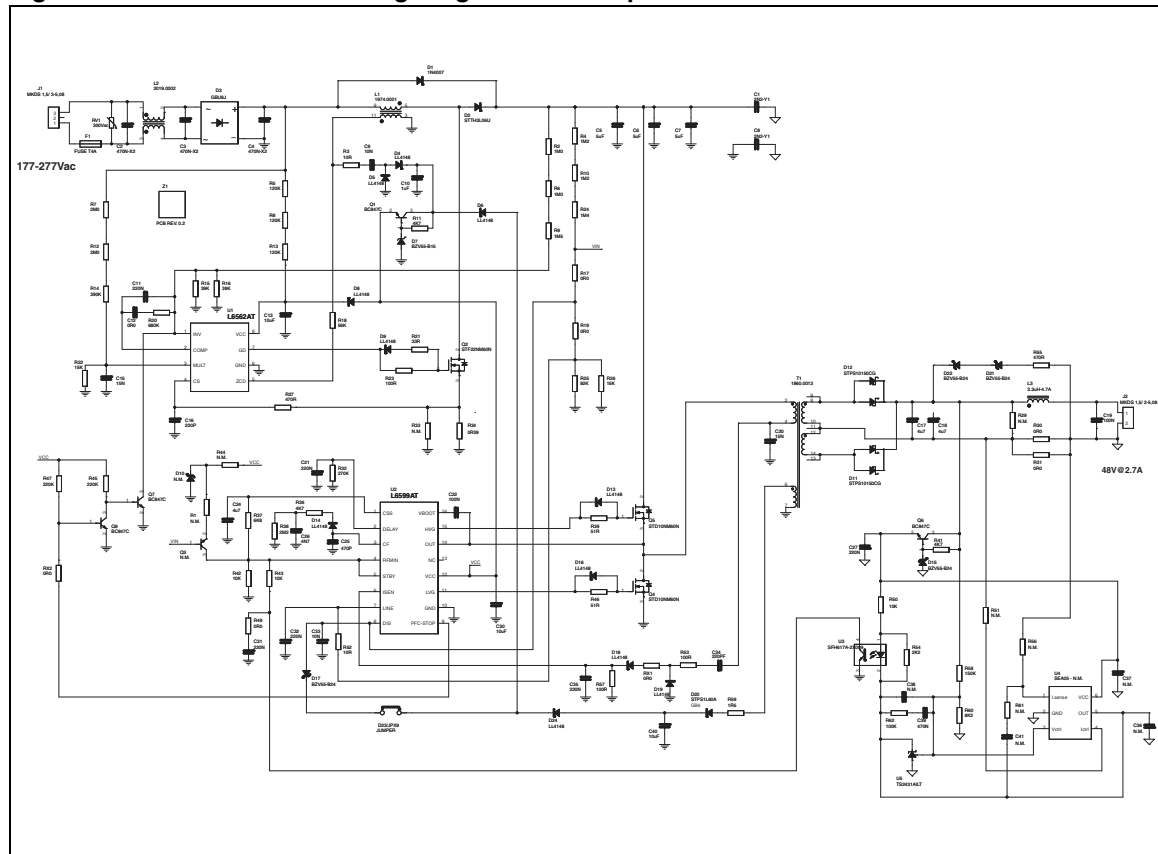
The circuit is composed of two stages: a front-end PFC using the L6562AT and an LLC resonant converter based on the L6599AT.

What distinguishes this design is its very high efficiency, extended European input mains range (177-277 V_{AC}) operation, and long-term reliability.

Because reliability MTBF (mean time between failures) in power supplies is typically affected by the high failure rate of electrolytic capacitors, unless using very high-end, expensive types, the STEVAL-ILL052V1 demonstration board offers an innovative design approach using film capacitors from EPCOS in place of electrolytic capacitors.

Thanks to the high efficiency achieved, no heatsinks are required.

Figure 1. 48 V - 130 W street lighting SMPS - European version with TS2431



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
25-Oct-2012	1	Initial release.

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