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Offline constant current LED driver based on the VIPer17

Data Brief

Features

- Input voltage 220 VAC +/- 20%
- 800 V avalanche rugged power section
- Provides 500 mA constant current for LED
- High precision constant current with +/- 5% tolerance (1 sense resistor and 2 resistor bridges with +/- 1% precision)
- Overtemperature protection
- LED open-circuit protection
- LED short-circuit protection
- PWM operation with frequency jittering for low EMI
- Operating frequency:
 - 60 kHz for L type
 - 115 kHz for H type
- Standby power < 50 mW at 265 VAC
- Adjustable and accurate overvoltage protection
- On-board soft-start
- Safe auto-restart after a fault condition

Applications

- Adapters for PDAs, camcorders, electric shavers, cellular phones, videogames
- Auxiliary power supply for LCD/PDP TVs, monitors, audio systems, computers, industrial applications
- SMPS for set-top boxes, DVD players/ recorders, white goods

Description

The STEVAL-ILL017V1 demonstration board is a 2 W non-isolated offline constant current LED driver based on the VIPer17. The board operates with an input ranging from 176 V to 264 VAC and provides 500 mA of constant current from a 7



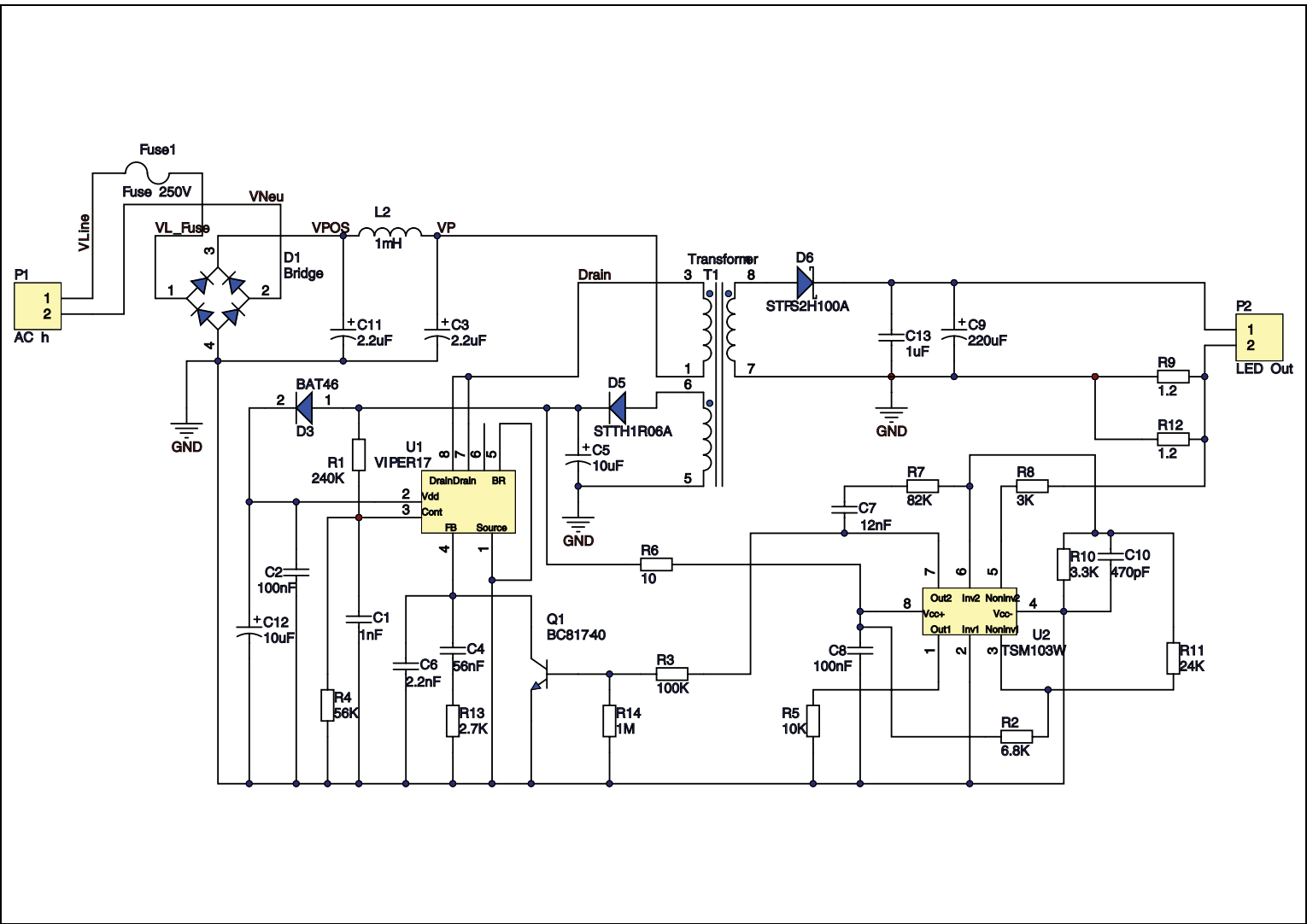
VDC source, suitable for illuminating two LEDs in series.

The VIPer17 device is an offline converter with an 800 V rugged power section, a PWM control, overcurrent protection, overvoltage and overload protection, hysteretic thermal protection, soft-start and safe auto-restart after the removal of a fault condition. The brown-out protection function is embedded into the high voltage start-up.

Burst mode operation and the very low consumption of the device combine to meet standby energy saving regulations. Advanced frequency jittering reduces EMI filter cost.

1 Circuit schematic

Figure 1. Schematic diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
01-Sep-2008	1	Initial release.

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