



STEVAL-ISA060V1

6 W single output SMPS demonstration board based on the VIPER17

Data Brief

Features

- Input voltage range V_{in} : 90 VRMS to 265 VRMS
- Output voltage V_{out} : 12 V
- Max output current I_{out} : 500 mA
- Precision of output regulation ΔV_{out_LF} : $\pm 5\%$
- High frequency output voltage ripple ΔV_{out_LF} : 50 mV

Description

This demonstration board is based on the new VIPER17 device and implements a standard single-output isolated flyback converter operating at fixed frequency that can be 115 kHz or 60 kHz.

The VIPER17 device integrates in the same package two components: an advanced PWM controller with built-in BCD6 technology and an 800 V avalanche rugged vertical power MOSFET.

It is very suitable for offline power conversion operating either with wide range input voltage (85 VAC - 270 VAC) up to 6 W or with single range input voltage (85 VAC - 132 VAC or 175 VAC - 265 VAC). With European range input voltage (175 VAC - 265 VAC) the device can handle up to 10 W of output power.

The proposed solution has the advantage of using few external components compared to a discrete solution, providing several protections and very low standby consumption in no-load condition.

The protections present on the device such as overload and output overvoltage protections, secondary winding short-circuit protection, hard transformer saturation and brownout protections improve the reliability and safety of the design.

The frequency jittering, that is inside implemented, helps to meet the standards regarding electromagnetic disturbance.



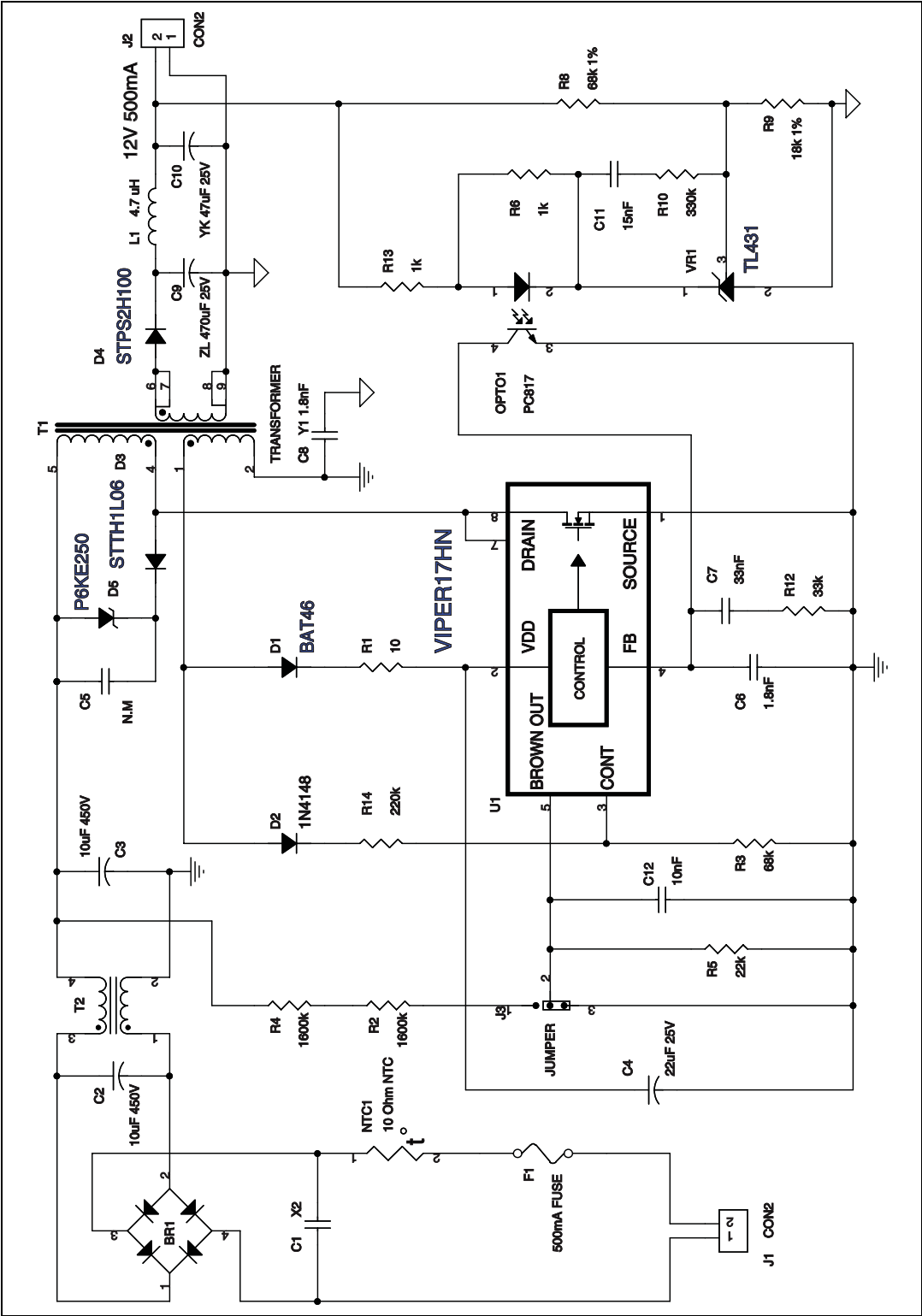
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Moreover internal thermal shutdown and an 800 V avalanche rugged power MOSFET improve the robustness of all the system.

If brownout and overvoltage protection are not necessary, the number of external components is further reduced.

1 Circuit schematic

Figure 1. Schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
09-Feb-2009	1	Initial release.

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