

STEVAL-ISA126V1

5 V-2 A, 115 kHz flyback with temporary extra-power management based on the VIPER28HN

Data brief



Features

Input Voltage range: 90 V_{RMS} to 265 V_{RMS}

Output Voltage: 5 V

Max Output Current: I_{OUTmax} 2 A

Peak Output Current: I_{OUTpk} 3 A

- Precision of output regulation: ΔV_{OUT LF} ±5%
- High Frequency output Voltage ripple:
 ΔV_{OUT_HF} 50 mV
- Max ambient operating temperature: TA 60
 C
- 800 V avalanche rugged power section
- PWM operation, at 115 kHz with frequency jittering for lower EMI
- Limiting current with adjustable set point
- On-board soft-start
- Safe auto-restart after a fault condition, low stand-by power (< 50 mW at 265 Vac)
- Adjustable and accurate over voltage protection, thermal shutdown with hysteresis, delayed overload protection
- RoHS compliant

Description

This document describes a 5 V-2 A application with 3.3 A peak current capability for 1.9 sec, using VIPer28H, a new off-line high voltage converter from STMicroelectronics.

In some applications an SMPS, normally supposed to deliver a certain amount of power, from time to time undergoes load peaks that can be even two or more times as much, but only for a time interval which is short if compared to the thermal time constants of the power components. Typical examples of such loads are printers and audio systems.

In these cases, it is more cost-effective to thermally design the system for the maximum continuous power and not for the peak power demand, which will be sustained only for a limited time window.

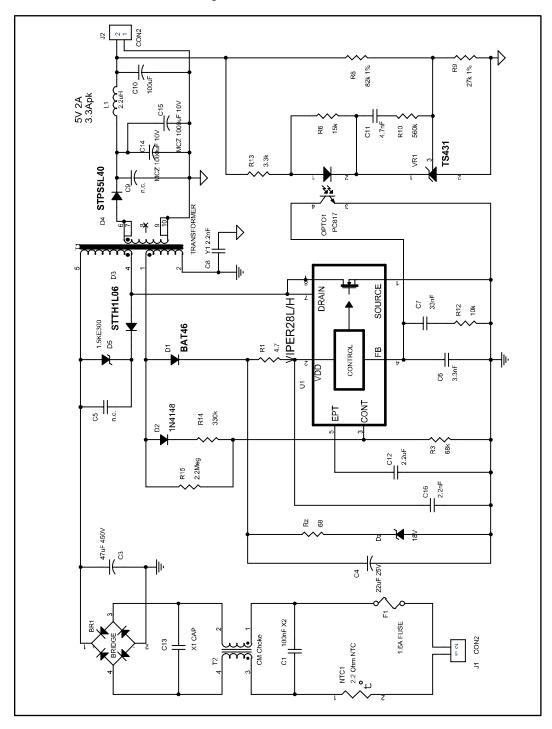
Such a design is possible thanks to the EPT function of VIPER28H, which allows the designer to fix the maximum time window during which the converter is able to manage the peak power still maintaining output voltage regulation. If the overload lasts more than this time window, the converter is automatically shut down in autorestart mode, in order to avoid the damaging of the power components.

Schematic circuit STEVAL-ISA126V1

1 Schematic circuit

1.1 Schematic circuit

Figure 1: Schematic circuit



STEVAL-ISA126V1 Revision history

2 Revision history

Table 1: Document revision history

Date	Revision	Changes
10-Dec-2013	1	First release

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