
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: $\Delta V_{OUT_LF} \pm 5\%$
- 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 auto-restart mode, in order to avoid the damaging of the power components.

2 Revision history

Table 1: Document revision history

| Date | Revision | Changes |
|-------------|----------|---------------|
| 10-Dec-2013 | 1 | First release |

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