

5 V / 200 mA high voltage buck-converter based on VIPer01

Data brief



Features

- Five-star energy efficiency for operation under no load ($P_{IN_no_load} < 20 \text{ mW} @ 230 \text{ V}_{AC}$)
- Meets ErP Lot 6 Tier 2 requirements for household and office equipment
- Compliant with the 10% load efficiency and 4-point average active-mode efficiency targets prescribed by the European CoC ver. 5 Tier 2
- Meets IEC55022 Class B conducted EMI even with reduced EMI filter, thanks to the frequency jittering feature
- VIPer01 800V avalanche rugged technology and embedded protections ensure enhanced system reliability
- RoHS compliant

Applications

- Topology: buck
- Input power consumption:
 - Less than 20 mW @ 230 V_{AC} under no-load condition
 - Less than 400 mW @ 230 V_{AC} with 250 mW load
- Input voltage: 85 - 265 V_{AC}
- Output voltage: 5 V
- Output current: 200 mA
- Switching frequency: 30 kHz with jittering ($\pm 7\%$)
- Max amb. temp: 60 °C
- Automatic restart protections: OLP, short circuit, VCC clamp, max duty cycle counter, thermal shutdown
- Pulse-skip protection to prevent the flux-runaway
- Dimensions: 29 mm x 30 mm

Description

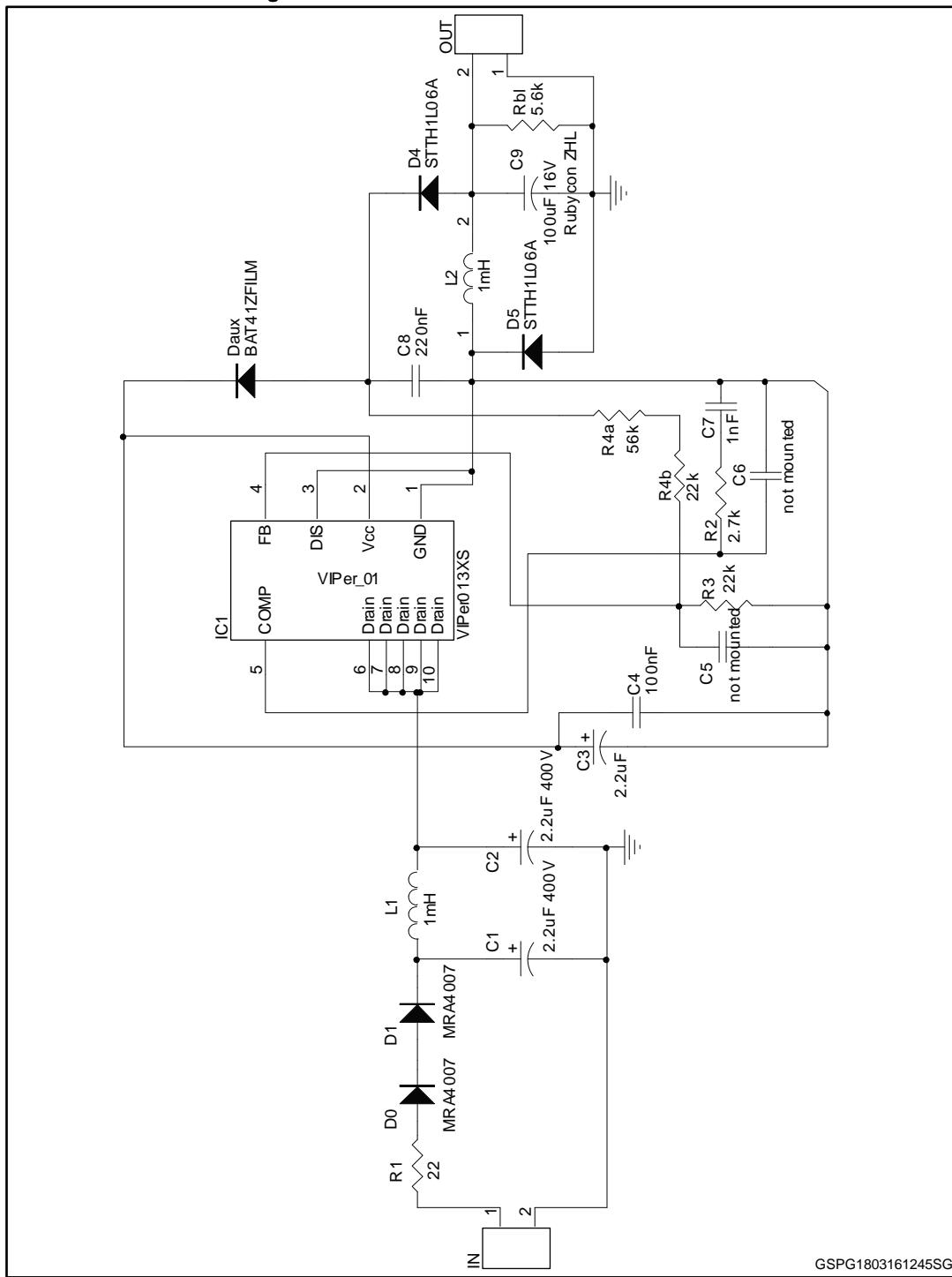
STEVAL-ISA178V1 is a compact and efficient solution for AC-DC power supplies, and performs voltage conversion from the main line down to 5 V output voltage.

The low current consumption of the VIPer01 and its low VCC voltage allows extremely low input power consumption under no load and light load conditions.

The pulse skip feature embedded in our IC reduces the peak current typically present during the startup phase of a buck converter.

1 Schematic diagram

Figure 1: STEVAL-ISA178V1 circuit schematic



2 Revision history

Table 1: Document revision history

Date	Version	Changes
24-Mar-2016	1	Initial release.
16-Sep-2016	2	Updated: cover page Title, Features and Description. Added Applications on the cover page.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2016 STMicroelectronics – All rights reserved

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[STMicroelectronics:](#)

[STEVAL-ISA178V1](#)