



STEVAL-ISA035V1

Non-isolated offline power supply demonstration board
based on the VIPER22A-E

Data brief

Features

- Input voltage range: 85 Vac to 264 Vac
- Input voltage frequency: 50/60 Hz
- Lowest possible component count
- Integrated thermal overload protection
- No-load consumption: around 200 mW
- 70% to 80% efficiency at full load
- Integrated short-circuit protection

Description

Many appliances today use non-isolated power supplies to furnish the low output power required to run a microcontroller, LED displays, and relays or AC switches. This type of power supply has a single rectifier to reference the neutral to output ground in order to fire Triacs or AC switches.

This demonstration board can use the VIPER12A-E or the VIPER22A-E, which are pin-for-pin compatible and can supply power for a wide variety of applications.

The VIPER12A-E is used for 12 V at 200 mA and 16 V at 200 mA, while the VIPER22A-E is used for 12 V at 350 mA and 16 V at 350 mA.

The same board can be used for any output voltage from 10 V to 35 V.

For more design details, please refer to application note AN1357.



STEVAL-ISA035V1

1 Schematic diagrams

Figure 1. Circuit schematic for 12 V at 350 mA

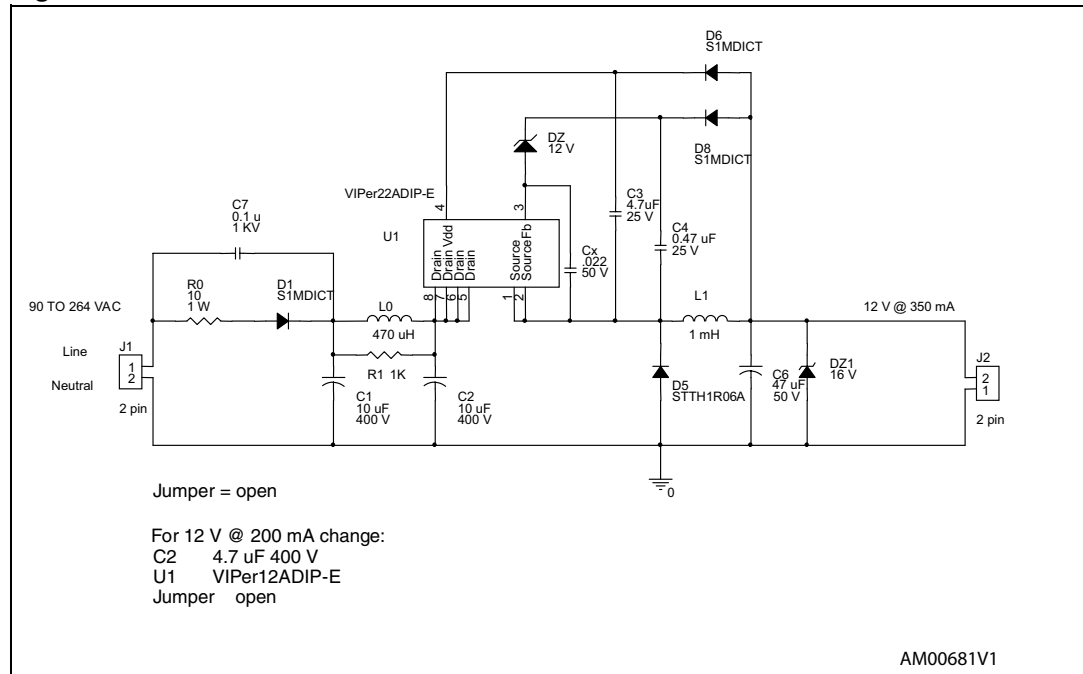
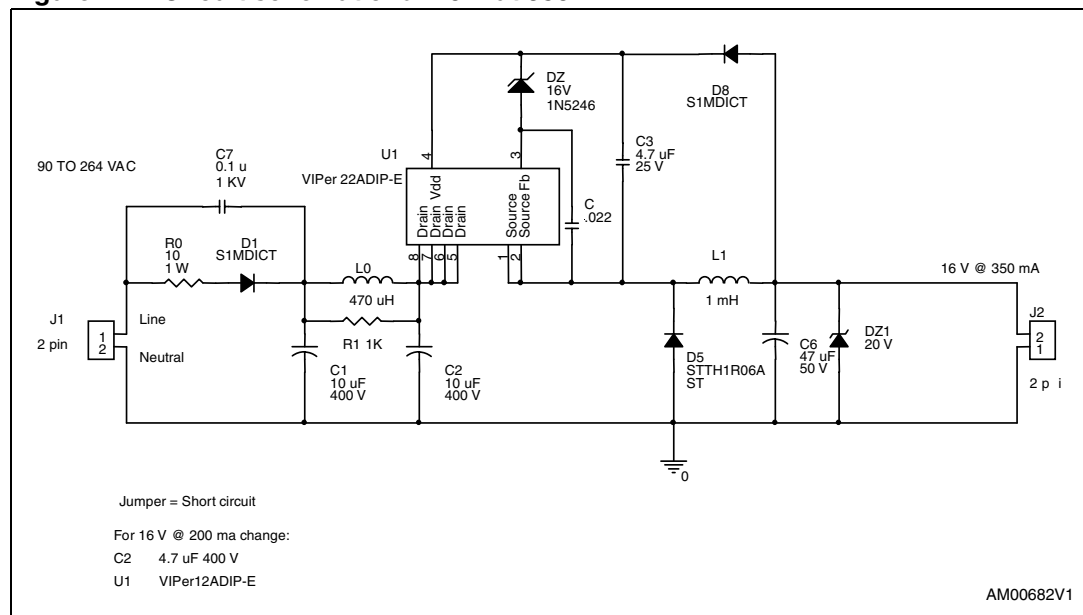


Figure 2. Circuit schematic for 16 V at 350 mA



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
15-Sep-2008	1	Initial release.
18-Jan-2010	2	Updated <i>Figure 1: Circuit schematic for 12 V at 350 mA</i> . Minor text and formatting changes.

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZED ST REPRESENTATIVE, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2010 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com