



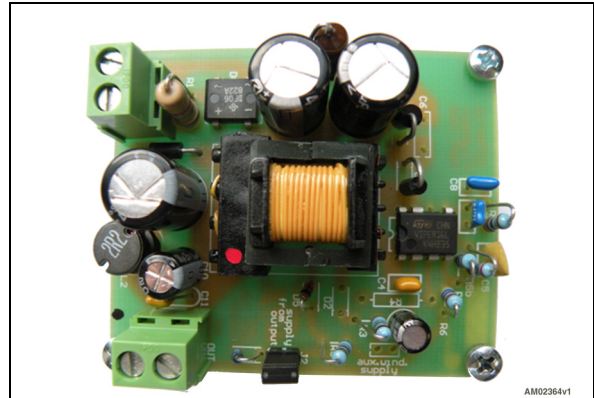
EVLVIP16L-4WFN

Offline power converter demonstration board using the Viper16

Data brief

Features

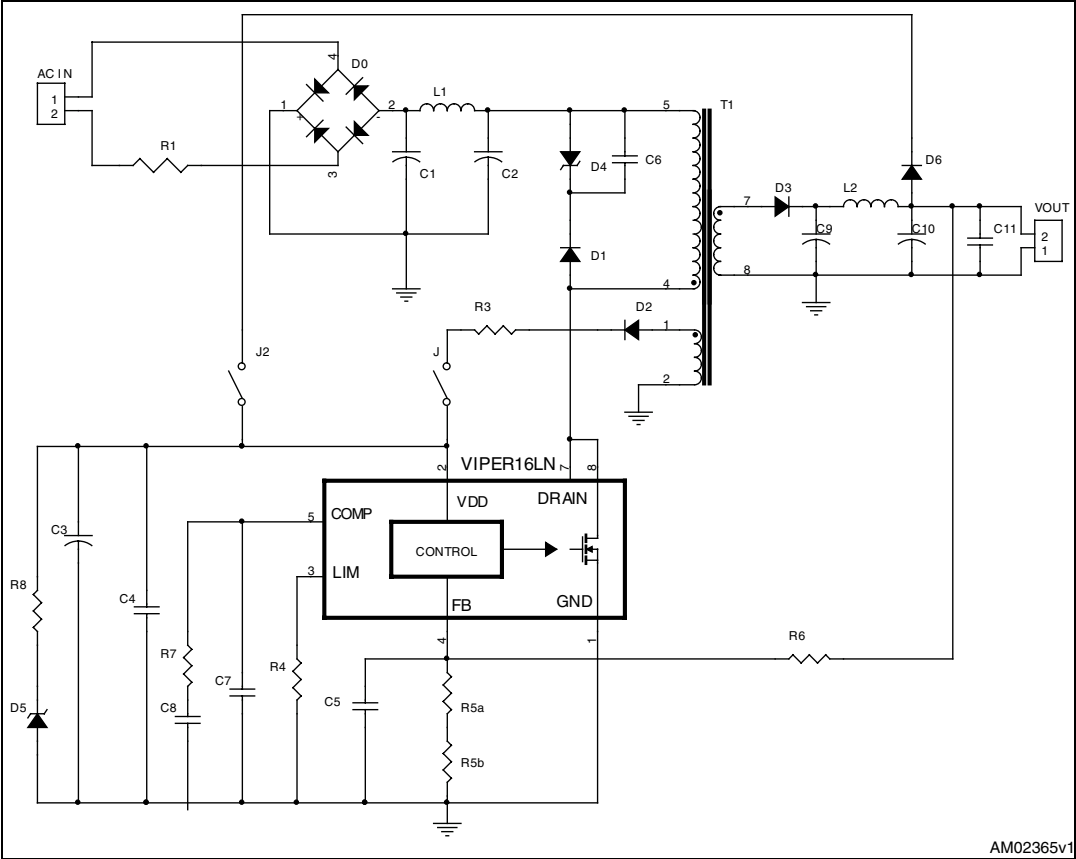
- Offline converter for wide range input voltage
- Output power up to 6 W
- No need for auxiliary winding (selectable option)
- 30 mW standby consumption (with auxiliary winding)
- High efficiency test according to ENERGY STAR® active mode method
- EMI test pre-compliant to EN55022 Class B



Description

Offline power converter in flyback topology with jittered fixed frequency. Use of the VIPer16 allows to handle up to about 6 W wide input voltage range converter and up to about 10 W in the European single input voltage range. The VIPer16 can operate with or without auxiliary winding; both options are implemented on the board. By operating with the auxiliary winding, it can attain very low standby consumption. The protections available include a thermal shutdown with hysteresis, delayed overload and open-loop failure protection.

Figure 1. Application schematic



AM02365v1

Table 1. Bill of material

Reference	Part	Description	Manufacturer
C1, C2		4.7 μ F, 400 V NHG series electrolytic capacitor	Panasonic
C3		10 μ F, 35 V GA series electrolytic capacitor	Panasonic
C4, C11		100 nF, 50 V RPER7 series ceramic capacitor	Murata
C5		150 pF, 100 V 682 series ceramic capacitor	AVX
C6	Not mounted		
C7		4.7 nF, 50 V B3798x series ceramic capacitor	EPCOS
C8		150 nF, 50 V B3798x series ceramic capacitor	EPCOS
C9		470 μ F, 25 V ZL series ultra-low ESR electrolytic capacitor	Rubycon
C10		100 μ F, 25 V VR series electrolytic capacitor	Nichicon
D0	DF06M	600 V 1 A diode bridge	Vishay
D1	STTH1L06	Clamp diode	STMicroelectronics
D2	BAT46	Small signal diode	STMicroelectronics
D3	STPS2H100	Output diode 2 A, 100 V	STMicroelectronics
D4	P6KE300A	Transil	STMicroelectronics
D5	BZX79-C18	18 V Zener diode	NXP
D6	Not mounted	Small signal diode (1N4148)	
R1		4.7 Ω 3/4 W resistor	
R3		15 W 1/4 W resistor	
R4	Not mounted		
R5a		10 k Ω 1% 1/4 W resistor	
R5b		2.2 k Ω 1% 1/4 W resistor	
R6		47 k Ω 1% 1/4 W resistor	
R7		33 k Ω 1/4 W resistor	
R8		68 k Ω 1/4 W resistor	
L2	RFB0807-2R2L	2.2 μ H power inductor	Coilcraft
J,J2		Jumpers	
T1	1335.0062	Transformer	MAGNETICA
IC	VIPer16LN		STMicroelectronics

1 Revision history

Table 2. Document revision history

Date	Revision	Changes
17-Nov-2011	1	Initial release.

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 TWO AUTHORIZED ST REPRESENTATIVES, 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.

© 2011 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

