THE DATASHEET OF

EVALVIPER17L-7W

www.win-source.net 0086-755-83957316

EVALVIPER17L-7W

Demonstration board on 7 W single output based on the VIPer17

Data Brief

Features

- Current mode with user set drain current limitation
- Frequency jittering
- EMI regulation compliant
- Low stand by consumption
- High efficiency conversion
- Over-load / output short circuit protection
- Transformer saturation and secondary winding short circuit protection (2nd OCP)
- Output over-voltage protection (optional)
- Brown out protection (optional)



EVALVIPER17L-7W

Description

The new VIPer17 device integrates in the same package two components: an advanced PWM controller built in BCD6 technology and an 800 V avalanche rugged vertical power MOSFET. The device is suitable for off line power converter operating both, with wide range input voltage (85 VAC - 270 VAC) up to 7 W or with single range input voltage (85 VAC - 132 VAC or 175 VAC - 265 VAC). With European range input voltage (175 VAC - 265 VAC) the device can handle up to 10 W of output power. The proposed solution has the advantage of using few external components compared to a discrete solution, providing several switch mode power supply's protections and very low stand by consumption in no load condition.

VIPer17 device operates at fixed frequency that can be 115 kHz or 60 kHz according to the part number selected. Frequency jittering is implemented and it helps to meet the standards regarding electromagnetic disturbance The several protections present on the device like: overload, output short circuit, secondary winding short, hard transformer saturation protection and brown out protections, improve the reliability and safety of the design. More over internal thermal shut down and an 800 V avalanche rugged power MOSFET improve the robustness of the system.

The present demonstration board is a standard one output isolated fly-back converter that uses all the protections above mentioned. If not necessary brown out protection and over-voltage protection could be not used reducing the number of external comp furthermore.

Obsolete Product(s) - Obsolete Product

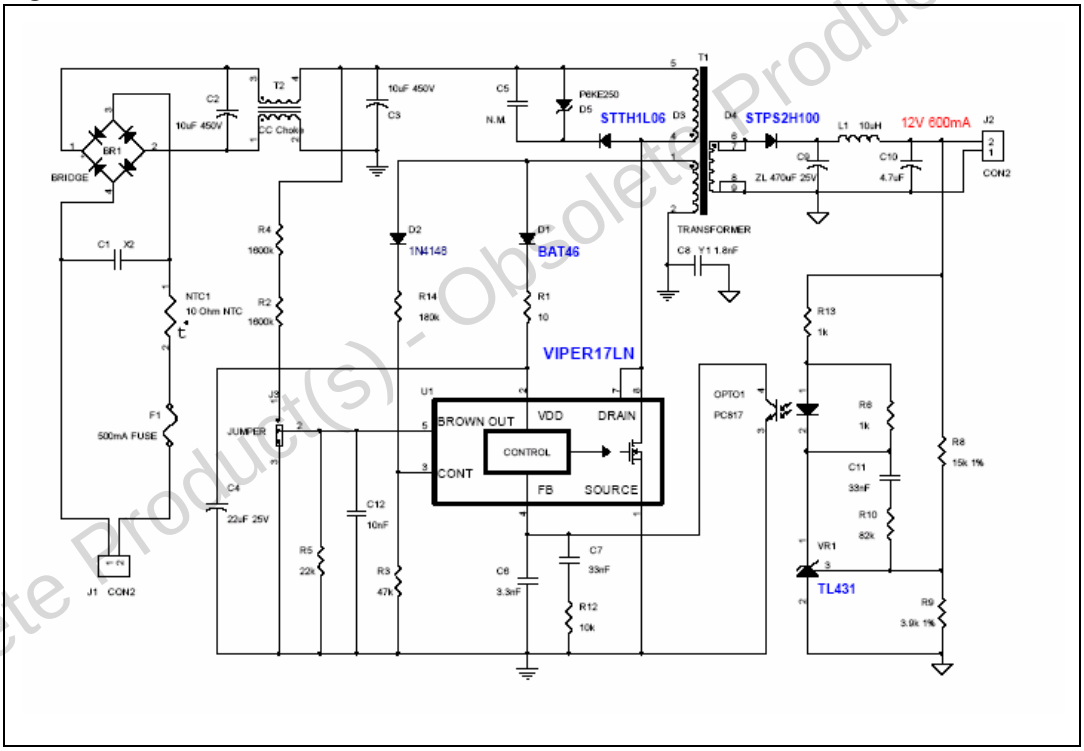
For further information contact your local STMicroelectronics sales office. www.st.com

1 Board parameter and circuit schematic

Table 1. Demonstration board parameters

Parameter	Symbol	Value
Input voltage range	V_{IN}	$90V_{RMS} – 265V_{RMS}$
Output voltage	V_{OUT}	12V
Max output current	I_{OUT}	600mA
Precision of output regulation	ΔV_{OUT_LF}	±5%
High frequency output voltage ripple	ΔV_{OUT_HF}	50mV

Figure 1. EVALVIPER17L-7W schematic



Obsolete Product(s) - Obsolete Product(s)

Appendix A Bill of material

Table 2. BOM list

Item	Qty.	Reference	Description	Part/value
1	1	BR1	600 V 1 A diodes bridge	DF06M
2	1	C1	100 nF X2 capacitor	100 nF x2 B32922
3	2	C2, C3	450V 10 µF electrolytic capacitor	450YXA10M12.5x20
4	1	C4	35 V 22 µF electrolytic capacitor	NRSA220M35V5x11 TR
5	1	C5	Not mounted	Not mounted
6	1	C6	25 V ceramic capacitor	1.8 nF
7	2	C7	25 V ceramic capacitor	33 nF
8	1	C8	Y1 2.2 nF capacitor	Series 440L
9	1	C9	470 µF 25V electrolytic capacitor	Serie ZL 25 V 470 µF 10X16
10	1	C10	25 V 47 µF electrolytic capacitor rubycon ZLG	50 V 4.7µF YK
		C11	25 V ceramic capacitor	330 nF
11	1	C12		10 nF
12	1	D1	Diode	BAT46
13	1	D2	Diode	1N4148
14	1	D3	Diode	STTH1L06
15	1	D4	Diode	STPS2H100
16	1	D5	Transil	P6KE250
17	1	F1	Fuse	TR5 250 V 500 mA (fuse)
18	2	J1,J2	Two screw connectors	PK3502
19	1	J3	3 Pin jumper (strip line)	Jumper
20	1	L1	10 µH 1 A inductor	ELC09D100E
21	1	NTC1	10 Ohm NTC	B57153S0100M000
22	1	OPTO1	Opto coupler	PC817
23	1	R1	10 Ohm resistor	1/4 W resistor
24	2	R2,R4	1600 kΩ 1% 1/4 W resistor	1% precision 1/4 W
25	1	R3	68 kΩ resistor	1% precision 1/4 W
26	1	R5	22 kΩ 1% 1/4 W resistor	1% precision 1/4 W
27	1	R6	1 kΩ resistor	1/4 W
28	1	R8	15 kΩ 1% 1/4 W resistor	1% precision 1/4W

Obsolete Product(s) - Obsolete Product(s)

Table 2. BOM list (continued)

Item	Qty.	Reference	Description	Part/value
29	1	R9	3.9 kΩ 1% 1/4 W resistor	1% Precision 1/4 W
30	1	R10	33 kΩ resistor	1/4 W
31	2	R14	220 kΩ resistor	1/4 W
32	1	R12	33 kΩ resistor	1/4 W
33	1	R13	1 kΩ resistor	1/4 W
34	1	T1	Switch mode power transformer	Code: 1715.0009 REV1
35	1	T2	Common mode choke for line filter	BU9-103R25B
36	1	U1	VIPER17 (60 KHz, DIP-7)	VIPER 17
37	1	VR1	Voltage reference	TL431

Obsolete Product(s) - Obsolete Product(s)

2 Revision history

Table 3. Document revision history

Date	Revision	Changes
05-Jun-2008	1	Initial release.

Obsolete Product(s) - Obsolete Product(s)

Obsolete Product(s) - Obsolete Product(s)

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.

© 2008 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 - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- View EVALVIPER17L-7W on WIN SOURCE
- STMicroelectronics Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- Global Sourcing Solution
- Obsolete Management
- Cost Control Management
- Shortage Management
- Alternative Solution
- Excess Inventory Management