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STEVAL-ISA014V1

VIPer12A travel adaptor 3.6W output

Data Brief

Features

- Switch mode general purpose power supply
- Input: 85 to 264Vac @ 50/60Hz
- Output: 6V @ 600mA
- Output power : 3.6W
- Switching frequency 60kHz
- Current mode control
- 65% efficiency
- 9V to 40V wide range VDD voltage
- Auxiliary undervoltage lockout with hysteresis
- High voltage start up current source
- Overtemperature, overcurrent and overvoltage protection.

STEVAL-ISA014V1

ST Components

- VIPer12AS
- SMBY01-200

Reference design genaral description

The travel adaptor design presented here has been made with the aim of minimizing overall cost for a secondary voltage and current regulated adapter topology widely used in cellular phone adapters. Thanks to the VIPer12A low power consumption, it is possible to achieve 100mW standby power in a wide range of operations, as recommended by the "European Commission of Energy".

1 General circuit description

The circuit is a standard fly-back converter with secondary current and voltage regulation driving the VIPer12A feedback pin through an optocoupler.

The power losses are distributed at 6V / 600mA output power as follows:

- 400mW in the output diode
- 700mW in the VIPer12A
- 300mW in the transformer
- 380mW in the shunt resistor

Overall efficiency is 67%.

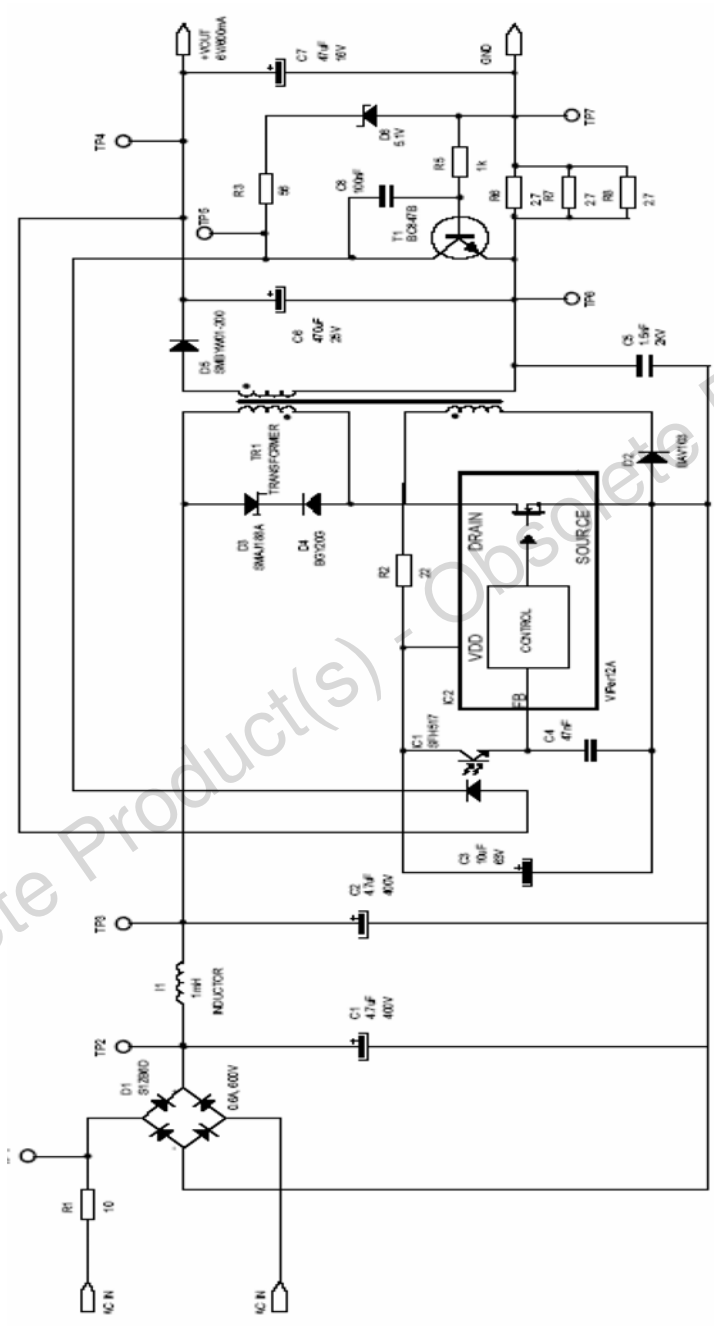
If the losses in the shunt resistor are considered as available power, the converter efficiency becomes 74%. This is possible by using a secondary controller like ST's TSM101.

In standby, the demo board consumes less than 100mW at 100Vdc and 120mW at 380Vdc.

The major contribution to the standby consumption is the VIPer12A own consumption and is independent from input voltage.

2 Board schematic

Figure 1. Scheme



3 Revision history

Table 1. Revision history

Date	Revision	Changes
23-Mar-2006	1	Initial release.

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