



STEVAL-ISA013V1

Dual output off-line wide range 24W power supply evaluation board
for VIPer53

Data Brief

Features

- Switch mode general purpose power supply
- Input: 85 to 264Vac @ 50/60Hz
- Output: 12V @ 1A & 5V @ 2.4A
- Output power (peak) : 24W
- Switching frequency 100kHz
- Current mode control
- 75% efficiency
- Auxiliary undervoltage lockout with hysteresis
- Output short circuit protection
- Thermal shutdown protection
- Meets EN55022 Class B EMI specification
- Meets Blue Angels

Description

This evaluation board is an off-line wide range dual output general-purpose power supply capable of delivering up to 24W through two outputs, +5V and +12V. The board is configured for secondary regulation with optocoupler feedback.

Other output voltages can easily be achieved by changing the transformer and a few components on the board, as shown in the application note.

Transformers are readily available for the following configurations:

- 5V/12V
- 5V/15V
- 5V/24V



ST components

- VIPer53
- STTA106
- BYW98-200
- TL431A
- STPS5L40
- 1.5KE220A

1 General circuit description

The evaluation board operates from 90 to 264Vac input with an output power peak of 24W through two output voltages of +5V and +12V.

The AC input is rectified and filtered by the bridge BR1 and the bulk capacitor C2 to generate the high voltage DC bus applied to the primary winding of the transformer, T1.

The switching frequency is set at 100kHz through R3 and C5.

Secondary regulation is provided by an optocoupler and a programmable voltage reference (TL431).

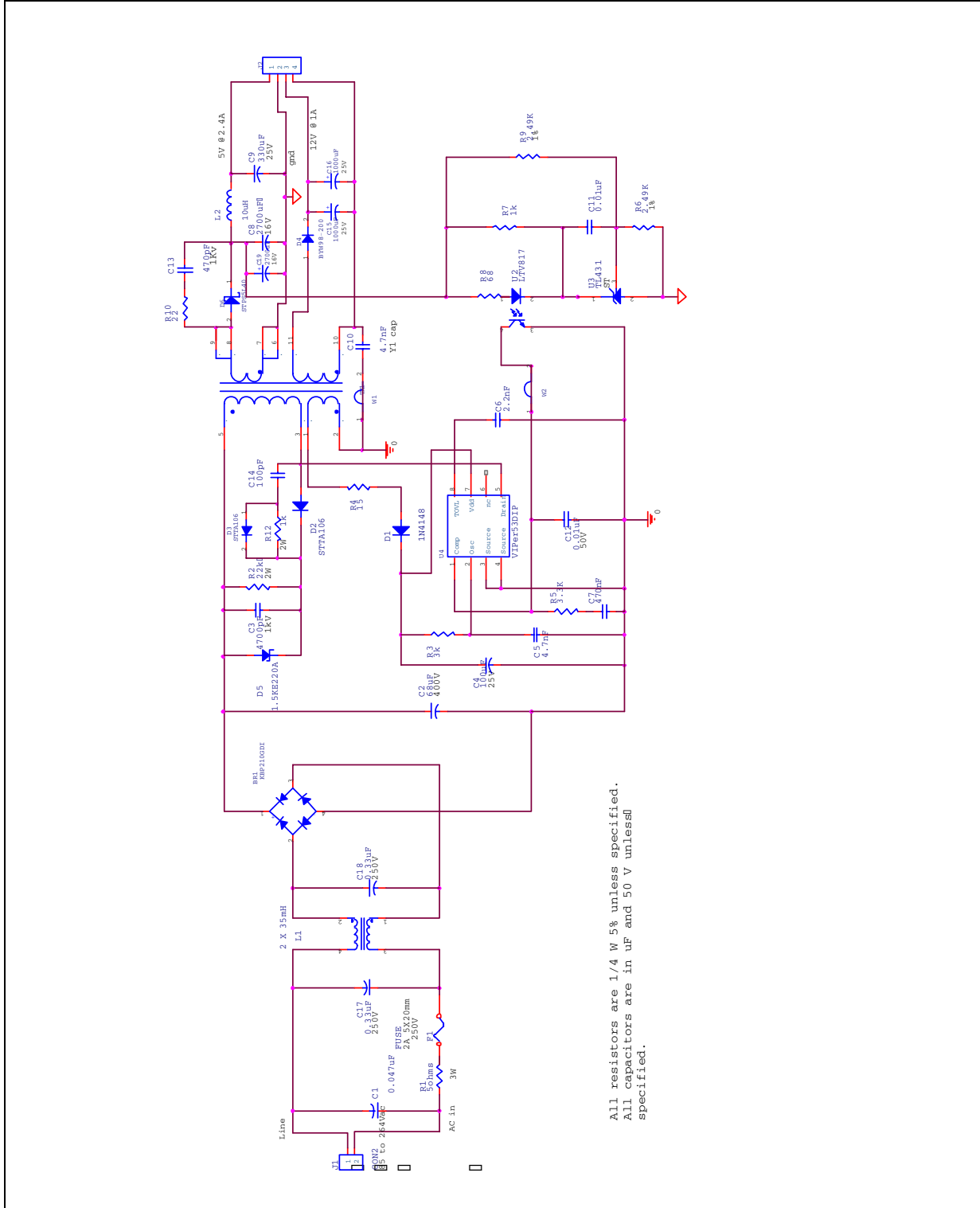
The transformer is designed and manufactured by Cramer Coil and Transformer Company, Inc.

This evaluation board has an efficiency of 78% at 115Vac at full load for both outputs.

The evaluation board consumes less than 1W total power consumption when working in burst mode during standby operation and therefore, meets Blue Angel norm.

2 Board schematic

Figure 1. Scheme



All resistors are 1/4 W 5% unless specified.
All capacitors are in µF and 50 V unless specified.

3 Revision history

Table 1. Revision history

Date	Revision	Changes
20-Jul-2007	1	Initial release.

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