STEVAL-ISA008V1

Low cost wide range power supply for LCD or TV, 28 W output demonstration board based on the VIPer53-E

Data brief

Features

- Input voltage
  - Vin: 90 - 264 Vrms f: 45-66 Hz
- Output voltages
  - 3.3 V ± 2 % at 1 A - dedicated to panel and digital circuitry for scaling
  - 7 V ± 8 % at 0.2 A - dedicated to post-regulator for microprocessor
  - 12 V ± 8 % at 2 A - dedicated to backlight lamp inverters, audio and SCART
  - 35 V ± 10 % at 10 mA - dedicated to tuner for TV-LCD
- Standby
  - Input power less than 1 W at 230 Vac, delivering 30 mA on 7 V
- Overcurrent protection
  - On all outputs, with auto-restart at short removal
- PCB type & size
  - Cu single side 35 mm, CEM-1, 130 x 70 mm
- Safety
  - According to EN60950, creepage and clearance minimum distance 6.4 mm
- Emc
  - According to EN50022 Class B
- RoHS compliant

Description

The STEVAL-ISA008V1 demonstration board is a 28 W switch mode power supply which can be used to supply an LCD monitor or even an LCD-TV, with 15" or 17" panels and 2 lamps for backlight together with multimedia functions such as audio. The SMPS accepts a full range input voltage (90 to 265 Vrms) and can deliver four output voltages dedicated to the scaler (3.3 V), to the mP (7 V), to the backlight and audio (12 V), and to the TV tuner (35 V).

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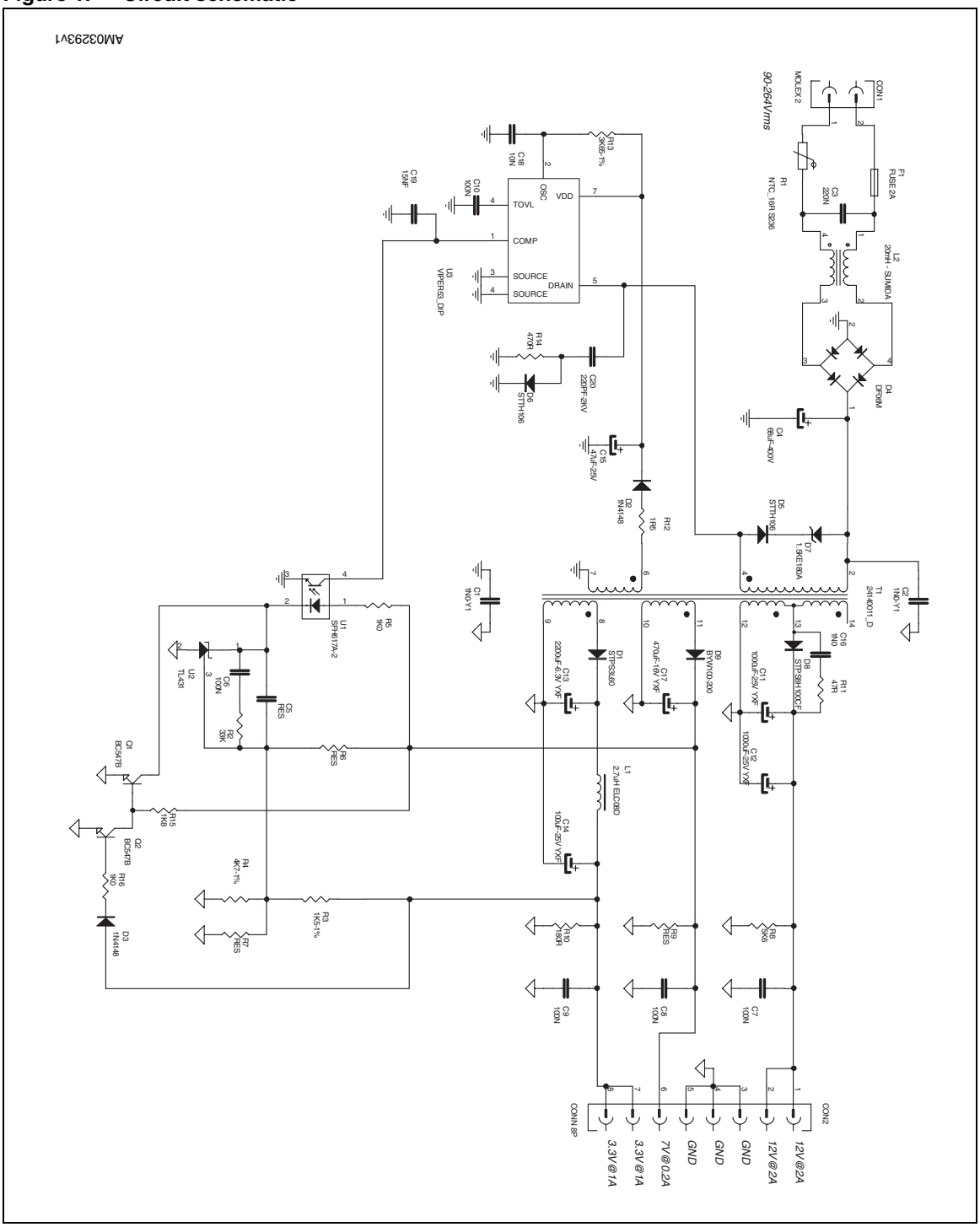
The standby performance is very good, and the power consumption during standby is 800 mW at 230 Vac.

The circuit is also fully protected against faults such as output short-circuit or overvoltage.

The design pays particular attention to the final cost of the solution, so the PCB has been designed as single layer, and the circuit has no heat sink. The technology used is the standard through-holes, but can be easily changed to SMT as most of the components are available also in this technology. The circuit has been tested thoroughly in all the most relevant aspects with positive results and has been integrated with a 15" LCD-TV application without showing any problems.

1 Circuit schematic

Figure 1. Circuit schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
15-Nov-2010	1	Initial release.

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