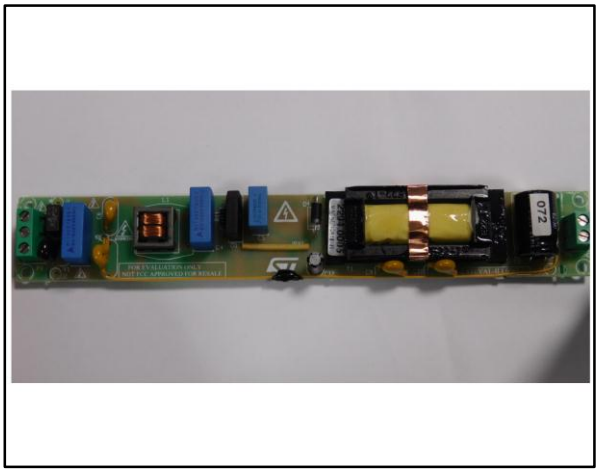
STEVAL-ILL076V1

40 W European input-range ultra-slim flyback converter using the HVLED001 quasi resonant flyback controller

Data brief



Features

- Input voltage: V_{IN}: 180 - 264 V_{RMS}, f: 45 - 66 Hz
- Output voltage: 56 V / 720 mA
- High power factor, low THD
- No-load: better than 400 mW @ 230 V_{IN}
- Full load efficiency: better than 92%
- Short-circuit protection with auto restart
- EMI: pre-compliant with EN55022 (B) limits
- Dimensions: 183 mm x 28 mm, h 17 mm
- PCB: single-side 35 µm, FR4, mixed PTH/SMD
- RoHS compliant

Description

The STEVAL-ILL076V1 product evaluation board implements an offline power converter based on a single-stage high-PF flyback topology using the HVLED001 controller.

A very slim form factor is achieved using innovative magnetic parts. Output voltage is controlled by the primary side, reducing the need for costly opto-couplers. The precision of the HVLED001's PSR feature together with the innovative structure of the transformer make output voltage regulation very accurate against load and line changes.

Very high efficiency is obtained and a full set of protection features are implemented, including protection against output short-circuit and input overvoltage.

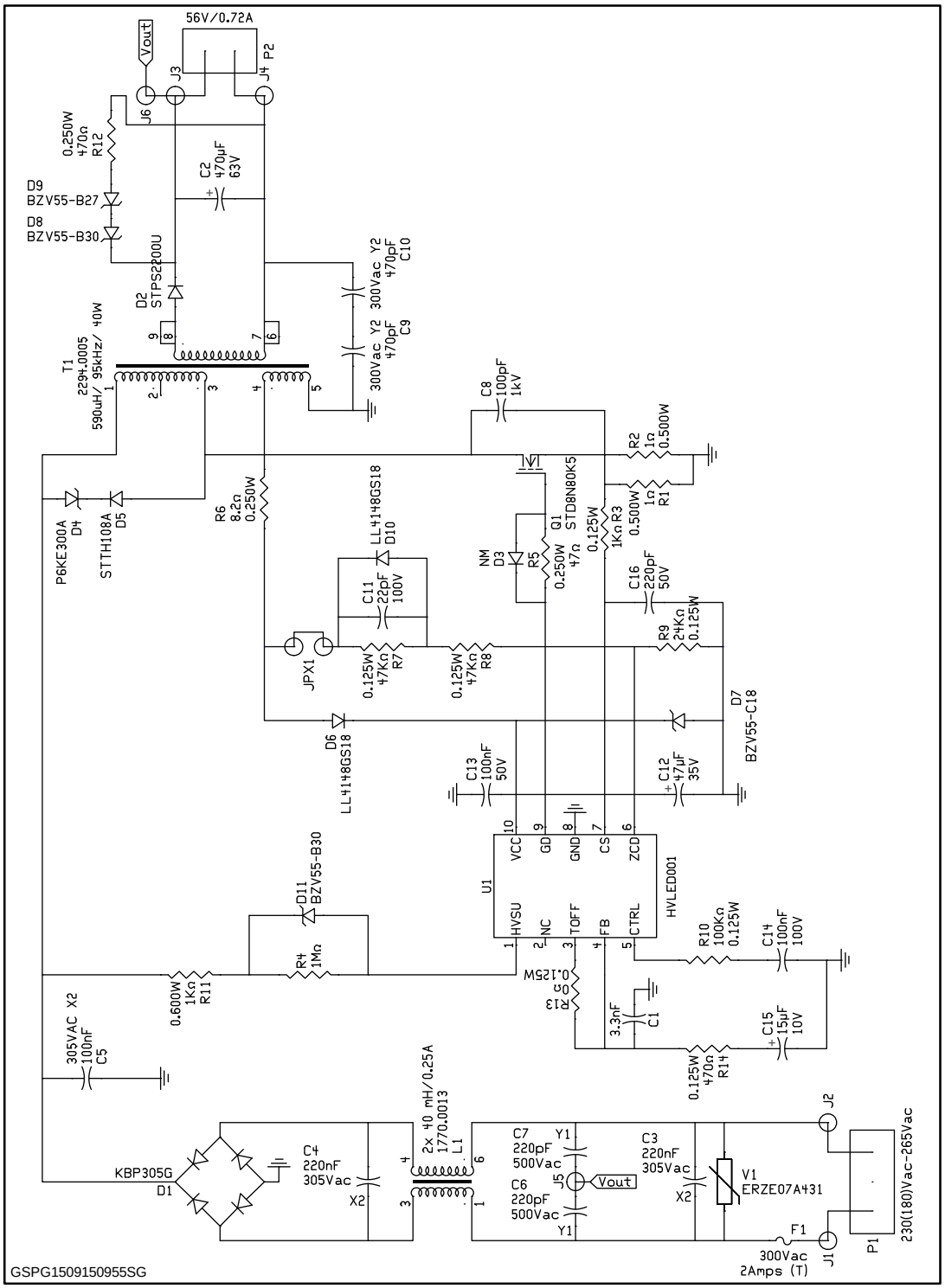
Conducted EMI is pre-screened and clearance and creepage distances are within EN60950 safety standards.

Power factor and THD measurements are optimized to be higher than 0.95 and lower than 10%, respectively, at full load.

The main application for this converter is bus power supply for an LED string driver providing 4 kV of isolation.

1 Schematic diagram

Figure 1: STEVAL-ILL076V1 circuit schematic



2 Revision history

Table 1: Document revision history

Date	Version	Changes
18-Sep-2015	1	Initial release.

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