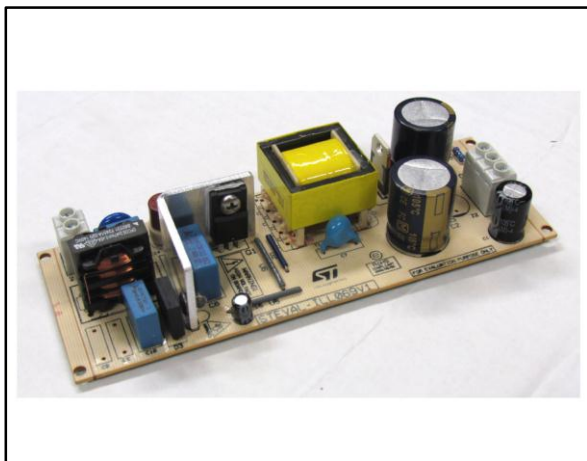


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## 35 W wide input range flyback converter using HVLED001 quasi resonant flyback controller

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Data brief



### Features

- Input voltage:  $V_{in} = 90 - 264 \text{ Vrms}$ ,  $f = 45 - 66 \text{ Hz}$
- Output voltage:  $48 \text{ V} / 730 \text{ mA}$
- High power factor, low THD
- No-load: better than  $400 \text{ mW}$  @  $230 \text{ V}_{in}$
- Full load efficiency: better than  $90\%$
- Short circuit protection with auto restart
- Safety: Acc. to EN60065
- PCB board:  $130 \text{ mm} \times 50 \text{ mm}$  single side PCB
- RoHS compliant

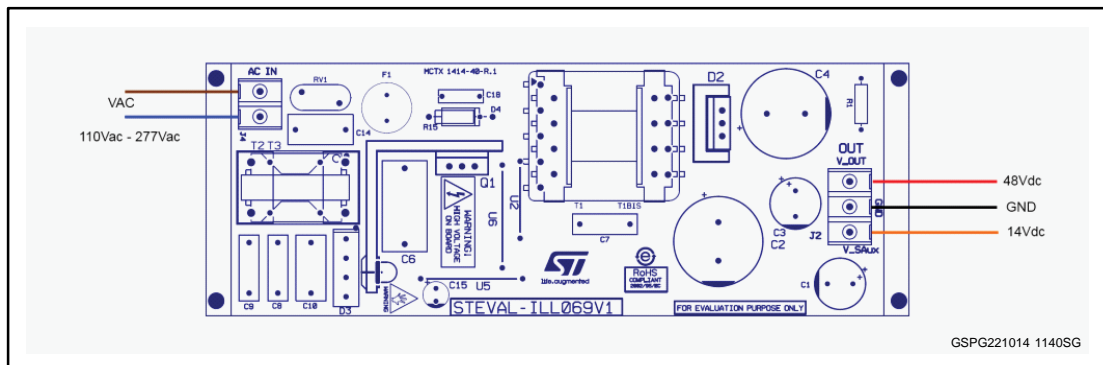
### Description

The STEVAL-ILL069V1 is designed to provide a stable and insulated  $48 \text{ V}$  voltage bus to supply secondary side circuitry (e.g., LED current generators) with a total output power of  $35 \text{ W}$  when a wide range of input voltages is applied at its input. An auxiliary  $14 \text{ V}$  output is also present to supply small circuitries which absorb a maximum current of  $20 \text{ mA}$ . A very high power factor is obtained thanks to the HVLED001's features, including management of protections for input voltage variations, excessive input voltages (overvoltage due to surges or bursts) and very low input voltages, thus improving the reliability of the application. The efficiency of the application is very high even at very low loads thanks to the improved frequency fold-back feature that simultaneously reduces the output voltage ripple at light loads. Output short circuit and overload protections feature auto-restart for safer operation in lighting environments.

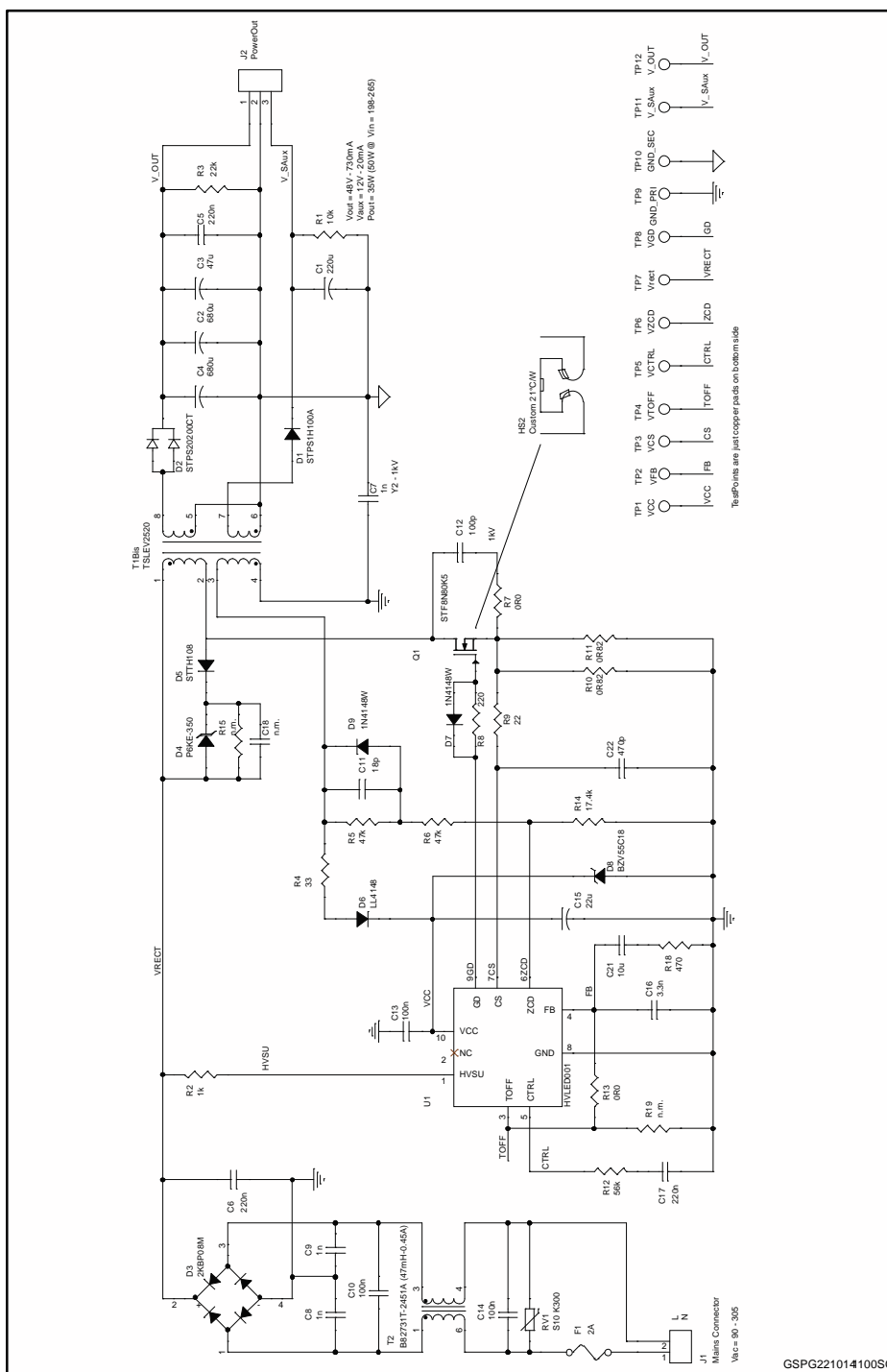
The board can operate with  $305 \text{ Vrms}$  input voltage replacing Q1 with STF5N95K5 Power MOSFET.

# 1 STEVAL-ILL069V1 board

Figure 1: Jumpers and connectors location



**Figure 2: STEVAL-ILL069V1 circuit schematic**



Change Q1 with STF5N95K5 when input voltage is up to 305 Vrms.

### 3 Revision history

**Table 1: Document revision history**

| Date        | Rev | Changes   |
|-------------|-----|---|
| 18-Nov-2014 | 1   | First release.                                      |
| 02-Jul-2015 | 2   | Updated features and description on the cover page. |

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