STEVAL-ISA071V2

4 W non-insulated, wide input voltage range SMPS based on the VIPer16

Data brief

Features

- **Input:**
  - $V_{IN}$: 85 - 264 V$_{rms}$
  - $f$: 45 - 66 Hz
- **Output:**
  - $12\,V_{DC} \pm 10\%$ (referred to -5 V), 160 mA
  - $-5\,V_{DC} \pm 4\%$, 400 mA
- **Maximum output power:** 4 W (range is up to 6 W for EU)
- **Standby power:** 35 mW at 230 V$_{AC}$
- **Short-circuit protected**
- **Insulation:** non-insulated; N connected to output GND
- **EMI:** in accordance with EN55022 class B
- **RoHS compliant**

Description

The STEVAL-ISA071V2 demonstration board is a non-insulated SMPS capable of delivering a 4 W output over a wide input voltage range and is designed for a mains application requiring -5 V and +7 V, referred to neutral.

The basic concepts used in this design can also be applied for higher power outputs or different voltage ranges.

The SMPS generates outputs of 5 V and 12 V, referred to the output marked -5 V. The 5 V output is dedicated to supplying an MCU. This configuration allows the use of the MCU to directly drive a Triac (referred to neutral).

The 12 V output is used to supply additional circuits (relays, OA, etc.).
1 Schematic diagram

Figure 1. Schematic diagram

[Diagram of the schematic diagram with labeled components and connections.]
2 Revision history

Table 1. Document revision history

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<thead>
<tr>
<th>Date</th>
<th>Revision</th>
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<tbody>
<tr>
<td>18-Apr-2012</td>
<td>1</td>
<td>Initial release.</td>
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