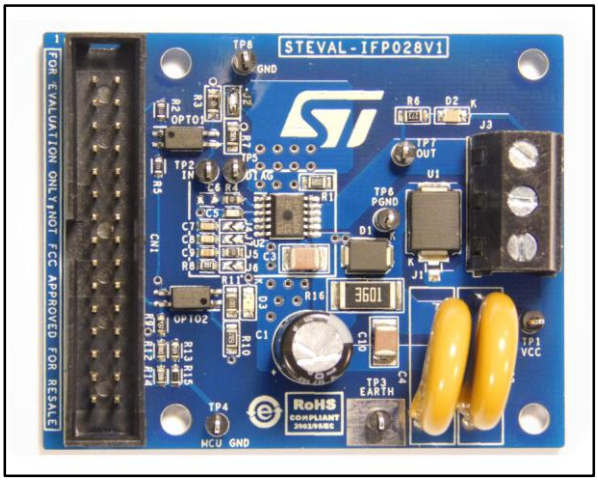
STEVAL-IFP028V1

Single high side driver based on IPS160H

Data brief



Features

- Operating voltage from 8 to 60 V
- Operating current up to 2.5 A
- Programmable cut-off delay time
- Reverse polarity protection
- Galvanic isolation
- Input pins compatible with V_{CC} rails
- Green LED for channel ON/OFF status
- Red LED for common diagnostic on:
  - Open load in OFF state
  - Cut-off
  - Thermal protection
  - Red LED functionality on DIAG pin guaranteed from V_{CC} = 12 V
- Microcontroller interface
- IEC 61000-4-2, IEC61000-4-4 and IEC 61000-4-5 compliant
- RoHS compliant

Description

The STEVAL-IFP028V1 is an evaluation board designed to analyze all IPS160H functionality.

It is designed to meet application requirements in terms of galvanic isolation between the user interface and the power interface. This requirement is satisfied via optical isolation implemented through two optocouplers, OPTO1 and OPT2, for forward signals to the device and for diagnostic feedback signals, respectively, in compliance with IEC 61000-4-2, IEC61000-4-4, IEC 61000-4-5 requirements. These requirements are satisfied by IPS160H itself and by the U1 component (the external TVS between V_{CC} supply rail and power ground).

A dedicated GUI interface was developed to facilitate the testing of IPS160H functionality. To use the GUI, connect the STEVAL-IFP028V1 to the STEVAL-PCC009V2 with a 30-way flat cable, followed by a USB connection between the STEVAL-PCC009V2 and the PC where the GUI runs.

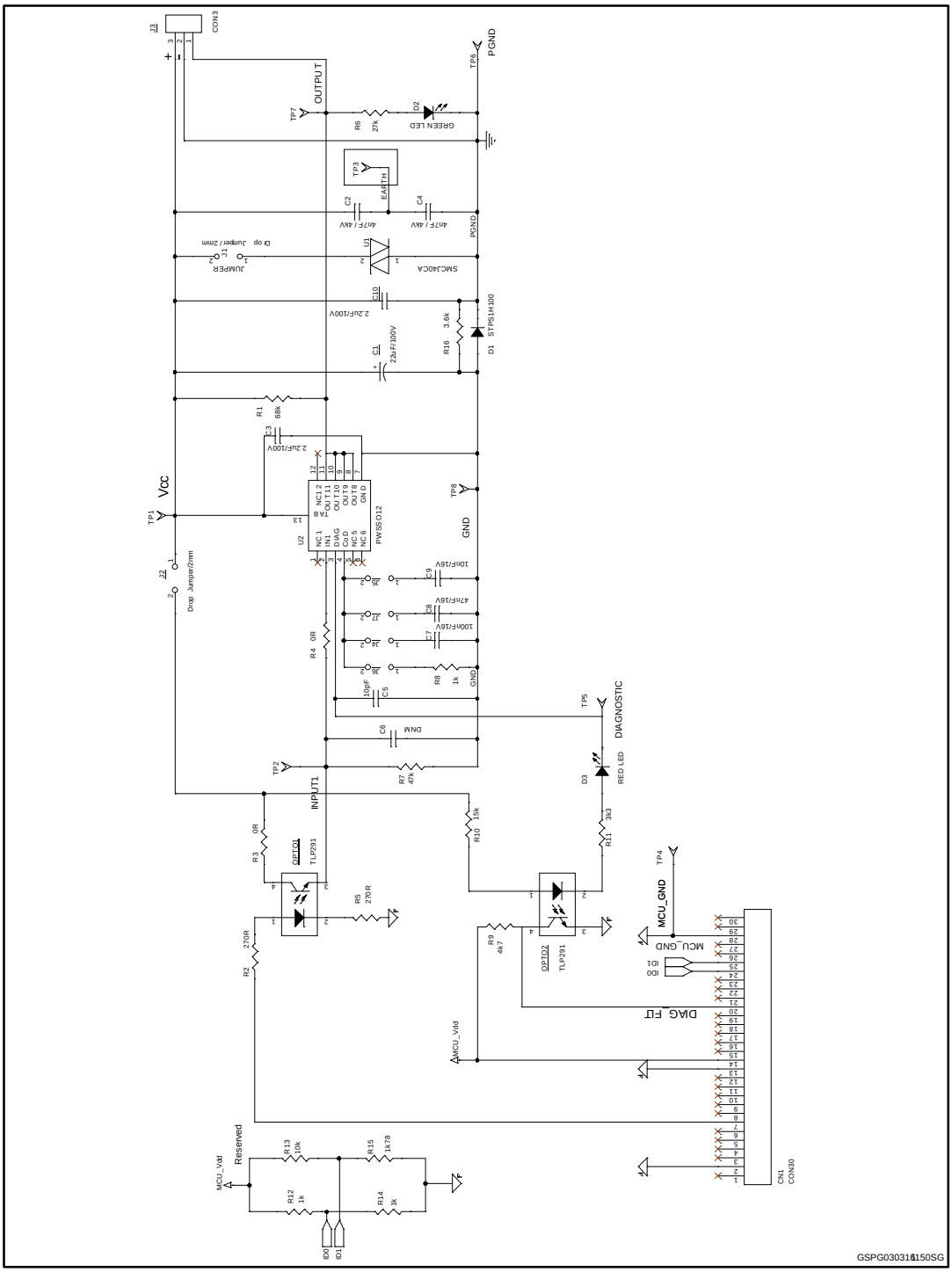
The GUI can be used to drive the STEVAL-IFP028V1 and monitor the status of the output on the power side, receiving fault information available on the IPS160H DIAG pin.

The STEVAL-IFP028V1 can be operate in an 8 to 60 V range, bearing in mind that the red LED functionality on the DIAG pin is only guaranteed from V_{CC} = 12 V and that for a supply voltage higher than 40 V, J1 must be open to avoid permanent damage to U1.

Finally, the STEVAL-IFP028V1 optimizes thermal performance through a careful layout which includes a dedicated copper area connected to the exposed pad of the PSSO12 package, also acting as a heatsink.

1 Schematic diagram

Figure 1: STEVAL-IFP028V1 circuit schematic



2 Revision history

Table 1: Document revision history

Date	Version	Changes
08-Mar-2016	1	Initial release.

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