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STEVAL-IFP029V1

Evaluation board for IPS4260L high speed quad low side driver

Data brief



Features

- V_{CC} operating voltage from 8 V to 36 V
- V_{DD} operating voltage range 3.3 V to 5 V
- Programmable load limitation current
- Programmable cut-off delay time
- Up to 100 kHz switching frequency
- High speed opto-isolation for driving and feedback diagnostic
- Diagnostic LED for thermal and cut-off channel status
- Diagnostic LED for open load detection in OFF state
- Thermal shut down
- Reverse polarity protection
- Designed to meet EMC standard requirements: IEC61000-4-2, IEC61000-4-4 and IEC61000-4-5
- RoHS compliant

Description

The STEVAL-IFP029V1 evaluation board is designed to let you analyze the functions of the fast quad low side intelligent power switch IPS4260L.

The design meets industrial standards requirements like galvanic isolation between logic and power stages, reverse polarity protection and EMC requirements, compliant with IEC61000-4-2, IEC61000-4-4 and IEC61000-4-5.

The on-board high speed dual channel opto couplers (used both for signals forwarded to the device and for feedback signals) allow a work frequency up to F_{SW} = 100 kHz.

The two Schottky diodes D1 and D8 guarantee the reverse polarity protection for V_{CC} (power stage supply rail) and V_{DD} (logic stage supply rail), respectively.

The 3 kW TVS devices on V_{CC} and VZ (U8 and U2, respectively) protect the application from surge test. The U9 TVS protect the application from V_{CC} surge test.

The two-layer design (2s), addresses the thermal requirements of the application due to the very high load currents.

The channel independent integrated thermal protection of the IPS4260L is signaled through the red LED D3. The resistors R17, R18, R19 and R20 activate the open load detection feature integrated in the IPS4260L: the red LED; D2 is turned ON if on one or more of the four outputs is left open.

The default 1 A limitation current threshold can be modified through R23. The default 2 ms CUT-OFF duration time can be modified through R4.

The IPS4260L can be driven by a user friendly GUI by connecting the STEVAL-IFP029V1 through the STEVAL-PCC009V2 to a Windows system.

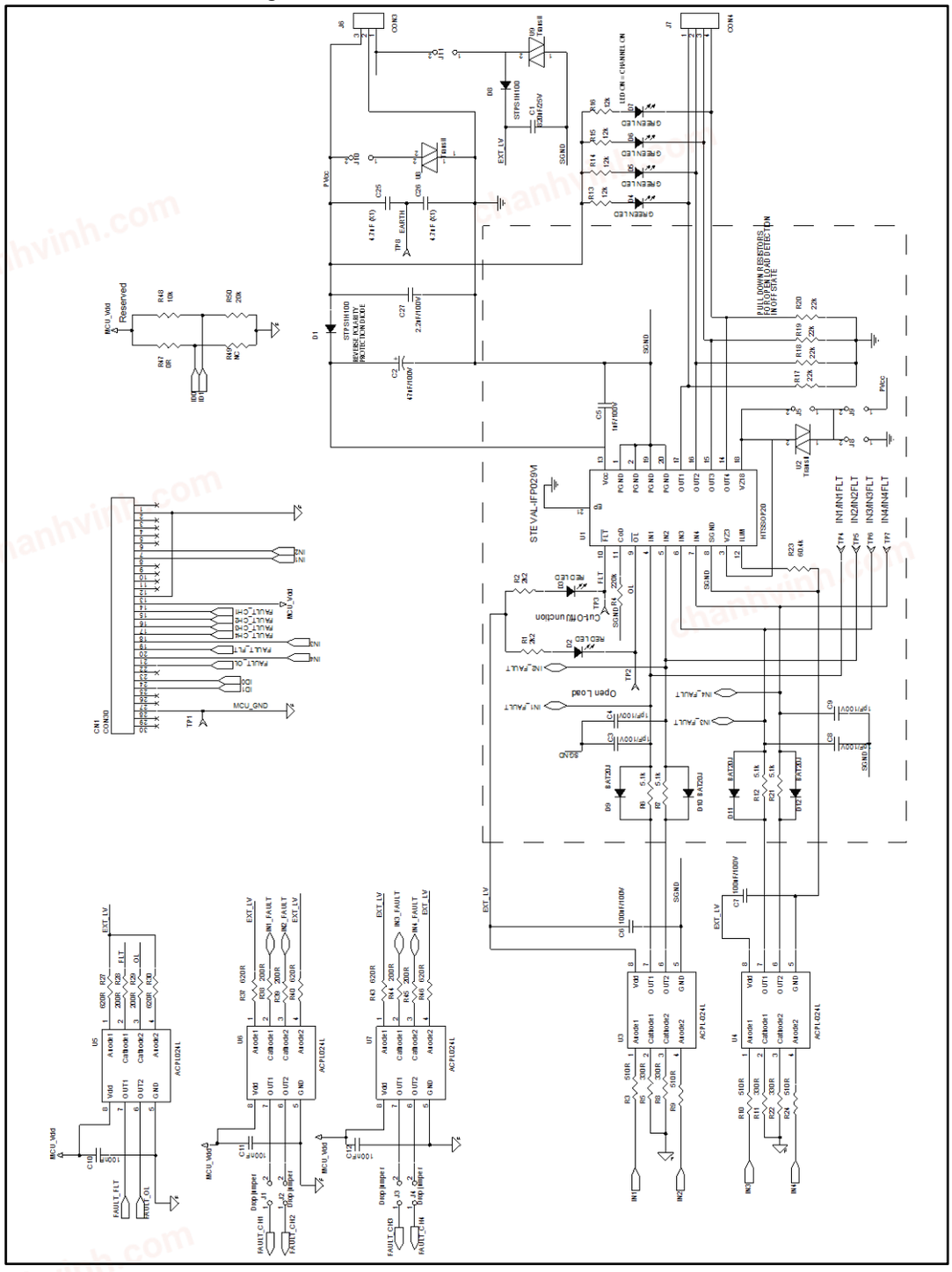
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1 Schematic diagram

Figure 1: STEVAL-IFP029V1 circuit schematic



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2 Revision history

Table 1: Document revision history

Date	Version	Changes
28-Aug-2017	1	Initial release.

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