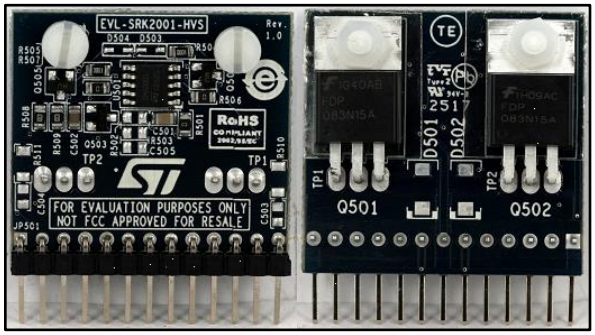
EVL-SRK2001-HVS

Evaluation board for SRK2001 adaptive synchronous rectification controller for LLC resonant converter with high voltage external sensing MOSFETs

Data brief



Features

- Synchronous rectifier for LLC resonant converter with adaptive turn-on and turn-off
- Max. frequency: 500 kHz
- Dual gate drive for N-channel MOSFETs
- External high voltage sensing MOSFETs and TO220 SR MOSFETs (6.85 mΩ 150 V rated) for application with output voltages up to 48 V

Description

The EVL-SRK2001-HVS evaluation board for the SRK2001 synchronous rectification controller is suitable for LLC converter applications with higher output voltage (up to 48 V), thanks to the use of external sensing MOSFETs in series with DVS1,2 pins.

An external V_{CC} voltage (12 V, max. 20 V) is required to supply the IC.

The SRK2001 implements a control scheme for secondary-side synchronous rectification in LLC resonant converters, using a transformer with a center-tap secondary winding for full-wave rectification.

It provides two high-current gate-drive outputs (for driving N-channel power MOSFETs). Each gate-driver is controlled separately and an interlock logic circuit prevents the two synchronous rectifier (SR) MOSFETs from conducting simultaneously.

Device operation is based on adaptive algorithms for both turn-on and turn-off of SR MOSFETs. During fast load transitions or during the above resonance operation, a further turn-off mechanism based on a ZCD_OFF comparator is provided, which triggers the gate-drive circuit for a very fast MOSFET turn-off.

The board includes two SR MOSFETs (TO220 package) and can be easily implemented in an existing converter to substitute rectifier diodes. Refer to the AN4674 for circuit implementation.

For further information contact your local STMicroelectronics sales office

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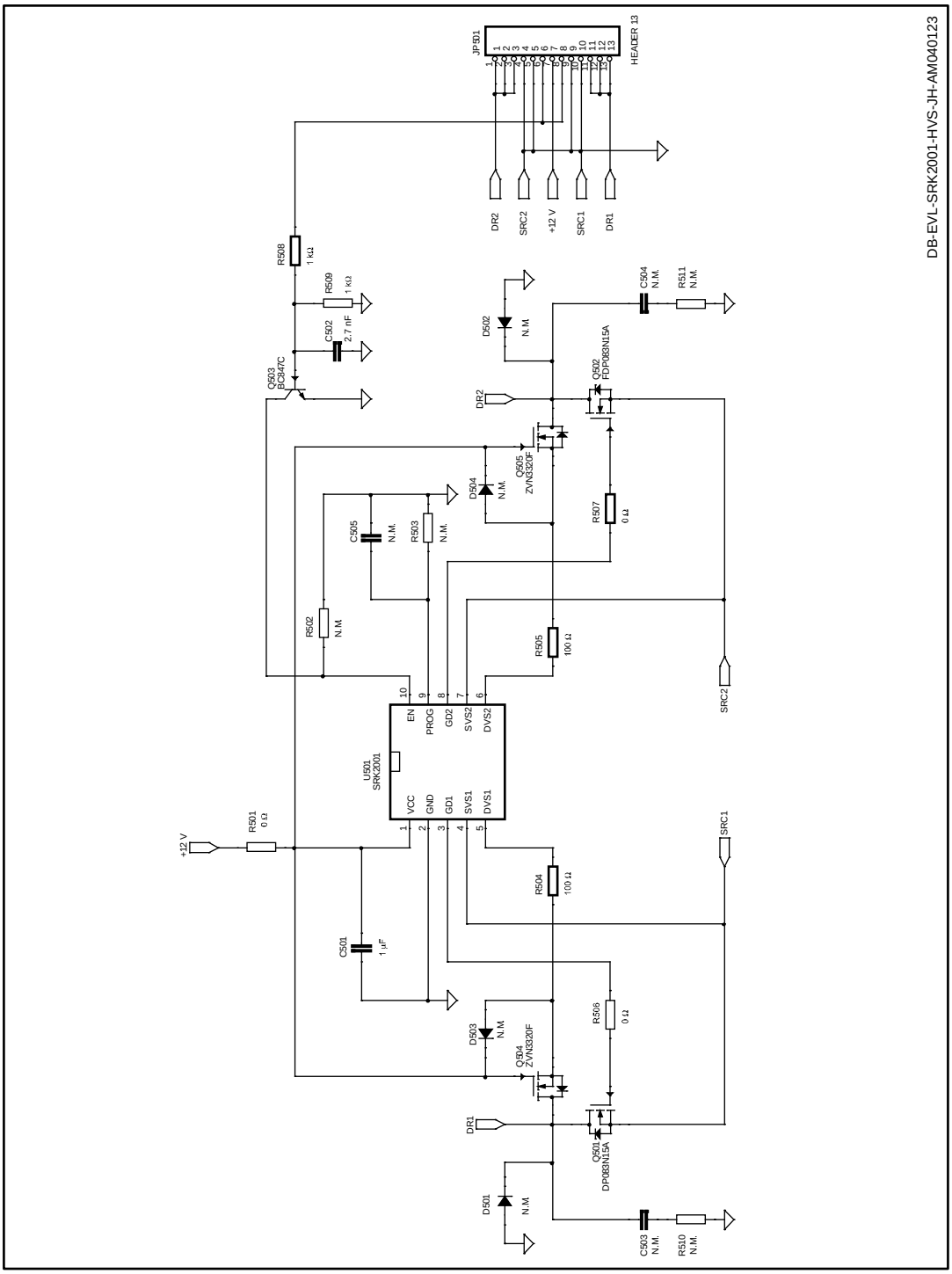
1 Electrical schematic



2 Revision history

Table 1: Document revision history

Date	Revision	Changes
11-Sep-2017	1	Initial release

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