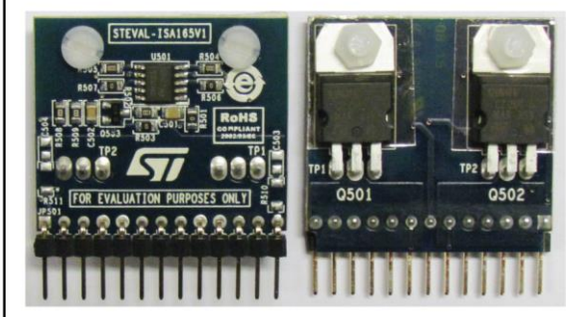
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# STEVAL-ISA165V1

## Evaluation board: SRK2001 adaptive synchronous rectification controller for LLC resonant converters with STP120N4F6

Data brief




## Features

- Synchronous rectifier for LLC resonant converter, with adaptive turn-on and turn-off
- $V_{CC}$ range: 4.5 V to 32 V
- Max frequency: 500 kHz
- Dual gate drive for N-channel MOSFETs (strd level driver)
- SR MOSFET type: STP120N4F6 (40 V – 4.3 mΩ) TO-220
- RoHS compliant

## Description

The STEVAL-ISA165V1 is a product evaluation board, designed to demonstrate the performance of the SRK2001 synchronous rectification controller. The SRK2001 implements a control scheme specific for secondary-side synchronous rectification in LLC resonant converters that use a transformer with 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 above resonance operation, a further turn-off mechanism is provided, based on a ZCD_OFF comparator that triggers the gate drive circuit for very fast MOSFET turn-off. The board includes two SR MOSFETs (in a TO-220 package) and can be easily implemented in an existing converter as a substitute for rectifier diodes.



For further information contact your local STMicroelectronics sales office

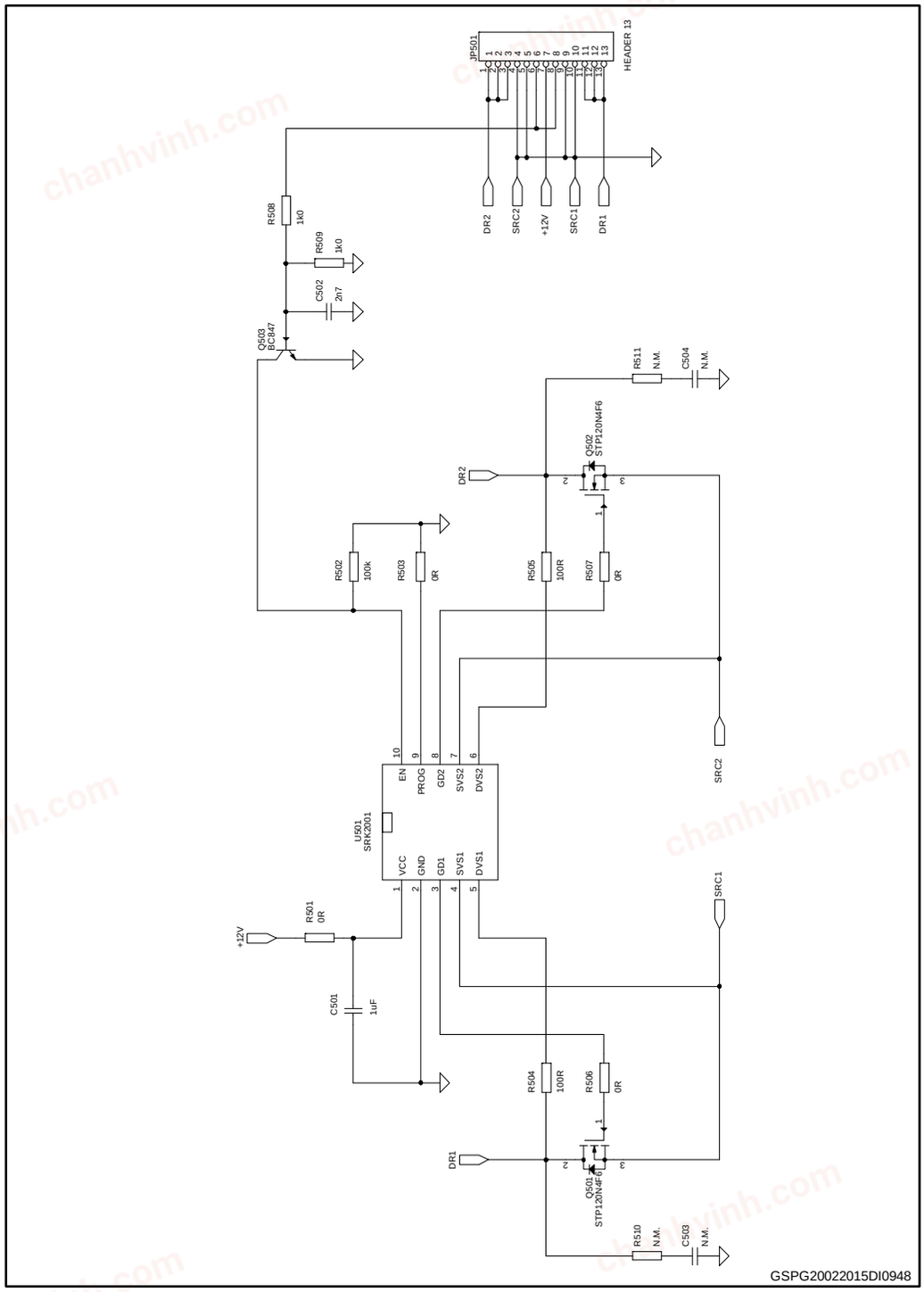
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# 1 Schematic diagram

**Figure 1: STEVAL-ISA165V1 circuit schematic**



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# 2 Revision history

**Table 1: Document revision history**

| Date | Rev | Changes |
|---|---|---|
| 17-Apr-2015 | 1 | First release. |

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