

SRK1001 adaptive synchronous rectification controller for flyback converter demonstration board with SR MOSFET



Features

- Synchronous rectifier for flyback converter, with fixed turn-on and adaptive turn-off
- Vcc range: 3.5 V to 32 V
- DVS sensing voltage: 185V AMR
- Max frequency: 500 kHz
- Internal gate drive for N-channel MOSFET
- SR MOSFET type: FDPF190N15A (150 V – 19 mΩ) TO220FP

Description

The EVLSRK1001-TO is a demonstration board, designed for evaluation of the SRK1001 synchronous rectification controller.

The SRK1001 implements a control scheme specific for secondary-side synchronous rectification in flyback converters and provides high-current gate-drive outputs for driving N-channel Power MOSFET.

The device can operate both in quasi-resonant (QR) applications and in fixed frequency (FF) mixed DCM-CCM applications. The board is provided with a setting suitable for QR application. To use in FF applications, a 100 pF capacitor needs to be added in C3. A 120 kΩ resistor (R3) is provided on the TON pin that fixes the blanking after the turn-on to about 1.44 μs. The blanking time after turn-off is set to 3 μs through a 100 kΩ resistor (R4) on TOFF pin.

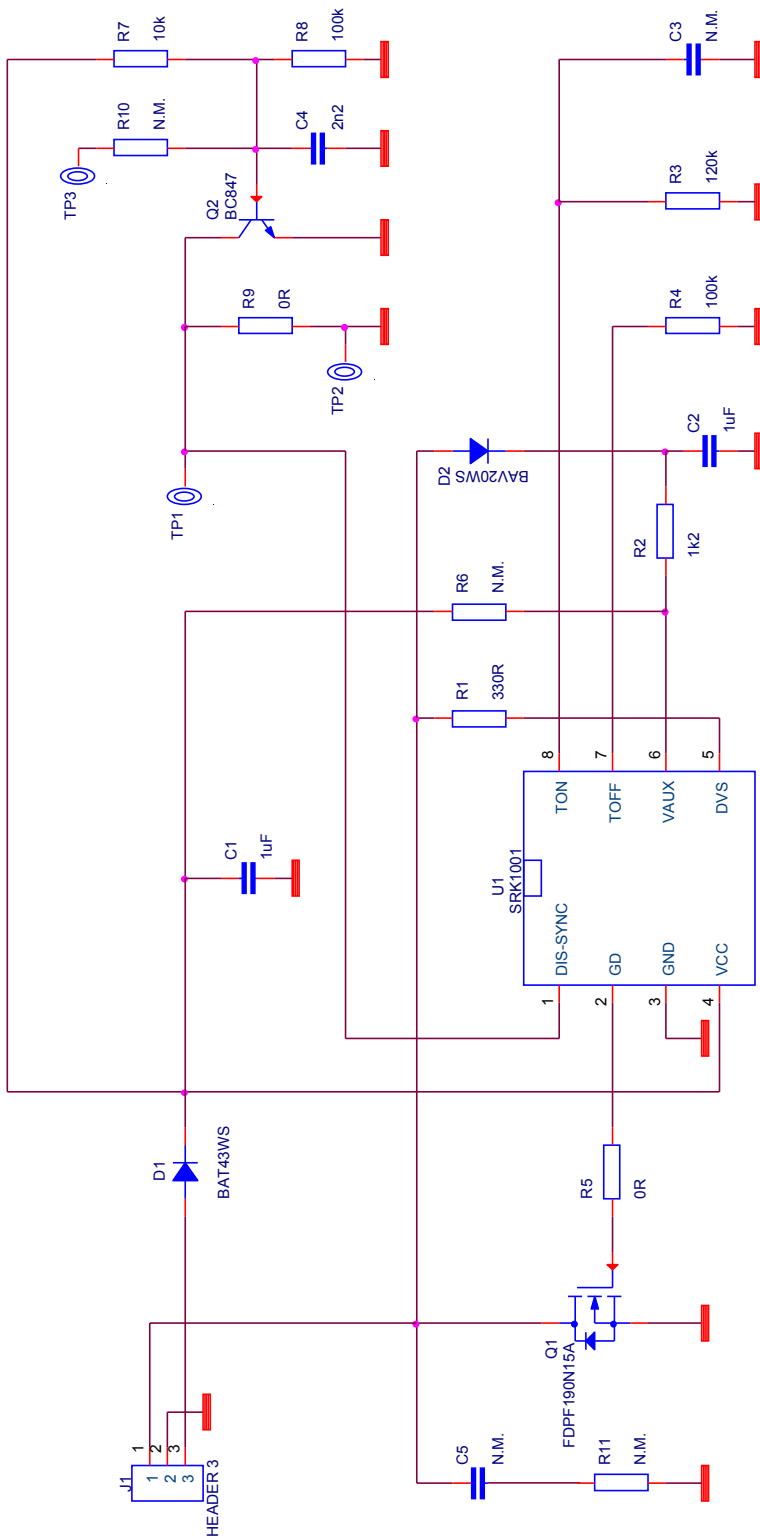
In order to use the DIS/SYNC pin functionality, the user has to remove the zero ohm resistor R9: the PCB already provides a npn transistor connected to this pin for remote ON/OFF.

The board includes the SR MOSFET (TO220FP package) and can be easily implemented into an existing converter to substitute rectifier diodes.

Product status link

[EVLSRK1001-TO](#)

1 Electrical schematics

Figure 1. Electrical schematic

Revision history

Table 1. Document revision history

Date	Version	Changes
30-Oct-2019	1	Initial release.

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