

3 A peak 800 kHz fixed-frequency PWM synchronous step-down evaluation board with enable on/off based on the ST1S40IPHR

Data brief



Features

- Input voltage V_{in} = 4 V to 18 V
- Output voltage V_{out} = 3.3 V
- Maximum output current: 3 A
- Switching frequency: 800 kHz
- Short-circuit protected
- RoHS compliant

Description

The STEVAL-ISA082V1, based on the ST1S40IPHR, is an internally compensated 800 kHz fixed-frequency PWM synchronous stepdown converter evaluation board.

The ST1S40 operates from 4.0 V to 18.0 V input, while it regulates an output voltage as low as 0.8 V and up to V_{IN} (100% duty cycle).

The ST1S40 integrates a 95 m Ω high-side switch and a 69 m Ω synchronous rectifier allowing very high efficiency with very low output voltage.

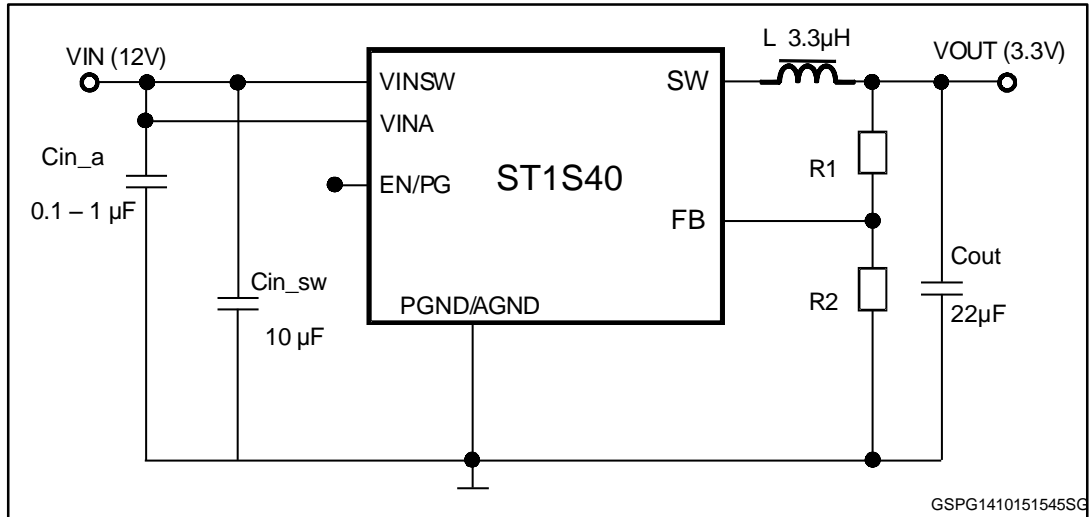
The peak current mode control with internal compensation delivers a very compact solution with a minimum component count.

The ST1S40 is protected through cycle-by-cycle current limiting in case of overload and is also protected by a current foldback function with frequency reduction in case of short-circuit.

The device is available with an enable on/off function.

1 Schematic diagram

Figure 1: Circuit schematic



2 Revision history

Table 1: Document revision history

| Date | Version | Changes |
|-------------|---------|----------------------------------|
| 27-Sep-2011 | 1 | Initial release. |
| 15-Oct-2015 | 2 | Updated title on the cover page. |