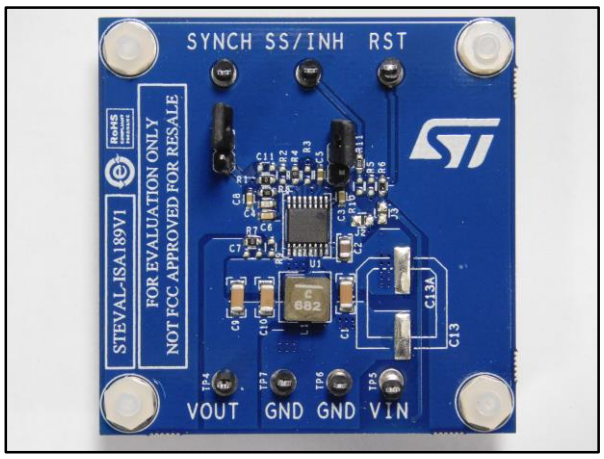
STEVAL-ISA189V1

38 V, 1.5 A synchronous step-down switching regulator evaluation board based on A6986F5V

Data brief



Features

- AECQ100 qualification
- 1.5 A DC output current
- 4 V to 38 V operating input voltage
- Low consumption mode or low noise mode
- Programmable I_{SKIP} current
- 45 µA I_Q at light load (LCM V_{IN} = 12 V)
- 8 µA $I_{Q\text{-}SHTDWN}$
- Adjustable f_{SW} (250 kHz - 2 MHz)
- Fixed output voltage V_{OUT}= 5 V
- Embedded output voltage supervisor
- Synchronization
- Adjustable soft-start time
- Internal current limiting
- Overvoltage protection
- Output voltage sequencing
- Peak current mode architecture
- $R_{DS(on)HS}$ = 180 mΩ; $R_{DS(on)LS}$ = 150 mΩ
- Thermal shutdown
- RoHS compliant

Description

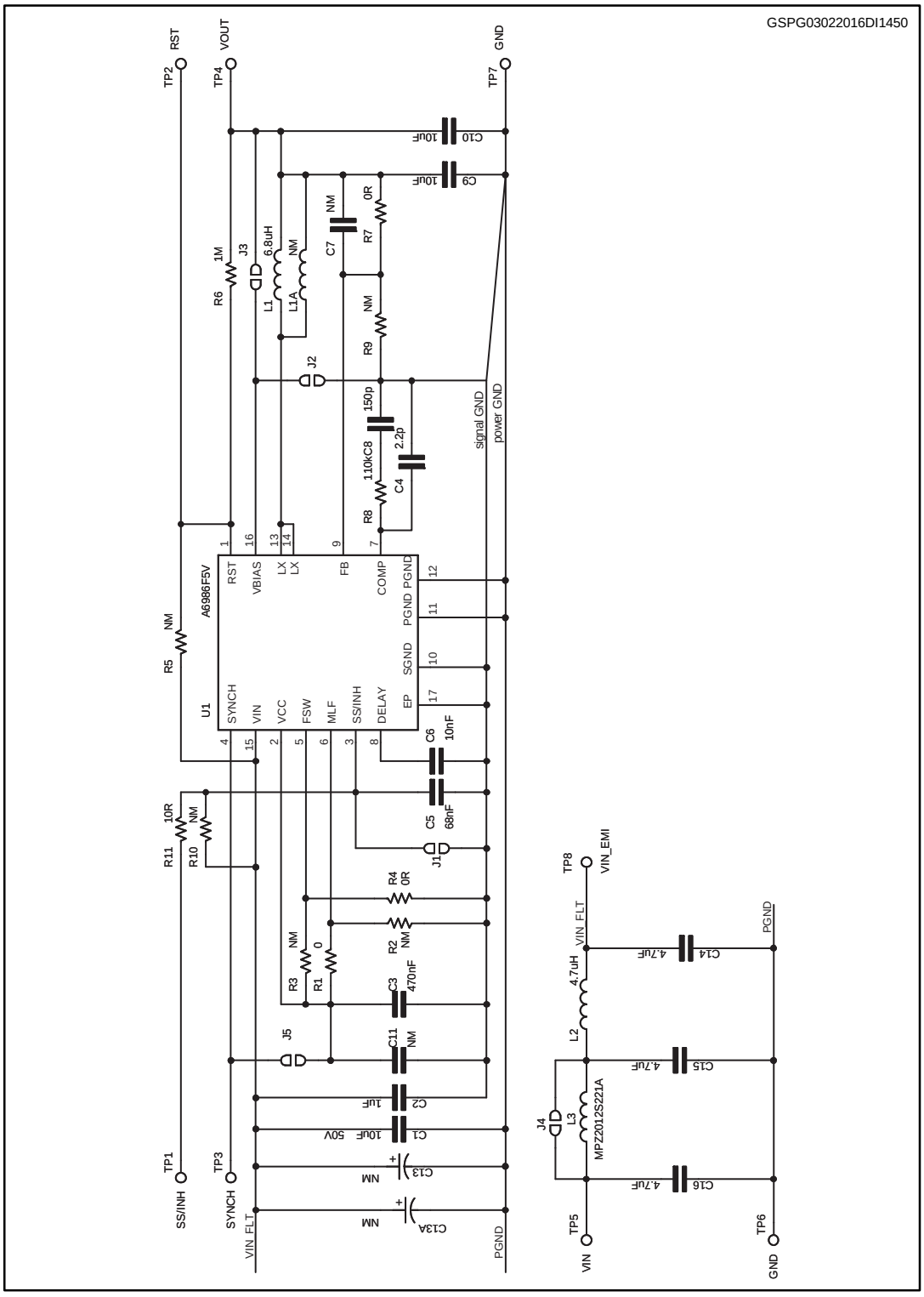
The STEVAL-ISA189V1 is a product evaluation board based on the ST synchronous step-down switching regulator A6986F5V, which can deliver up to 1.5 A and, with its 100% duty cycle ability to withstand cold crank events and wide input operating voltage range, represents the ideal choice for battery-powered automotive systems. Synchronous rectification helps achieve higher efficiency at full load as well as application compactness, while high-frequency switching (programmable up to 2 MHz) helps reduce the cost and size of power passive components while remaining outside the AM band. The device can operate in low consumption mode (LCM), with a quiescent current of 30 µA that ensures high efficiency under light load, which is a requirement in typical car body applications that are active when a car is parked. A low noise mode (LNM) can be selected to meet the requirements of infotainment applications with forced PWM mode under all load conditions. The default board configuration is LCM active, 500 kHz switching frequency, high I_{SKIP} current and the switchover feature enabled, but all of these settings can be easily changed so the user can evaluate different application scenarios.

For further information contact your local STMicroelectronics sales office

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1 Schematic diagram

Figure 1: STEVAL-ISA189V1 schematic circuit



2 Revision history

Table 1: Document revision history

Date	Version	Changes
02-Feb-2016	1	Initial release.

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