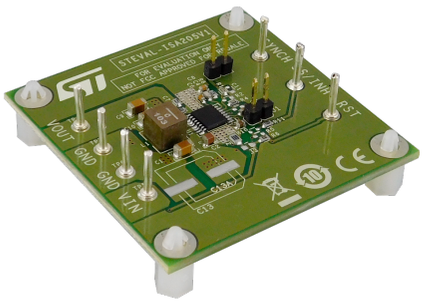
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STEVAL-ISA205V1

Data brief

38 V, 2 A synchronous step-down switching regulator evaluation board based on the A6986H





Product summary	
38 V, 2 A synchronous step-down switching regulator evaluation board based on A6986H	STEVAL-ISA205V1
38 V, 2 A synchronous step-down switching regulator with 30 µA quiescent current	A6986H

Features

- AECQ100 qualification
- 2 A DC output current
- 4 V to 38 V operating input voltage
- Low consumption mode or low noise mode
- Programmable I_{SKIP} current
- 30 µA IQ at light load (LCM V_{IN} = 12 V and V_{OUT} = 3.3 V)
- 8 µA $I_{Q\text{-}SHTDWN}$
- Adjustable f_{SW} (250 kHz - 2 MHz)
- Output voltage adjustable from 0.85 V to V_{IN}
- Embedded output voltage supervisor
- Synchronization (in all f_{SW} range)
- Adjustable soft-start time
- Internal current limiting
- Overvoltage protection
- Peak current mode architecture
- $R_{DS(on)HS}$ = 180 mΩ; $R_{DS(on)LS}$ = 150 mΩ
- Thermal shutdown
- RoHS and WEEE compliant

Description

The STEVAL-ISA205V1 product evaluation board is based on the synchronous step-down switching regulator A6986H that can deliver up to 2 A and withstand cold cranking across 100% duty cycle, which, along with its wide input operating voltage range, render the A6986H the ideal choice for battery powered automotive systems.

Synchronous rectification helps to achieve higher efficiency at full load as well as application compactness, while high-frequency switching (programmable up to 2 MHz) helps to cut power passive costs and size, while staying outside of the AM band.

The device can operate in a Low Consumption Mode (LCM) with a quiescent current down to 30 µA at V_{IN} = 12 V and V_{OUT} = 3.3 V, hence assuring high efficiency at light loads, as required in typical car body applications that are active during car parking.

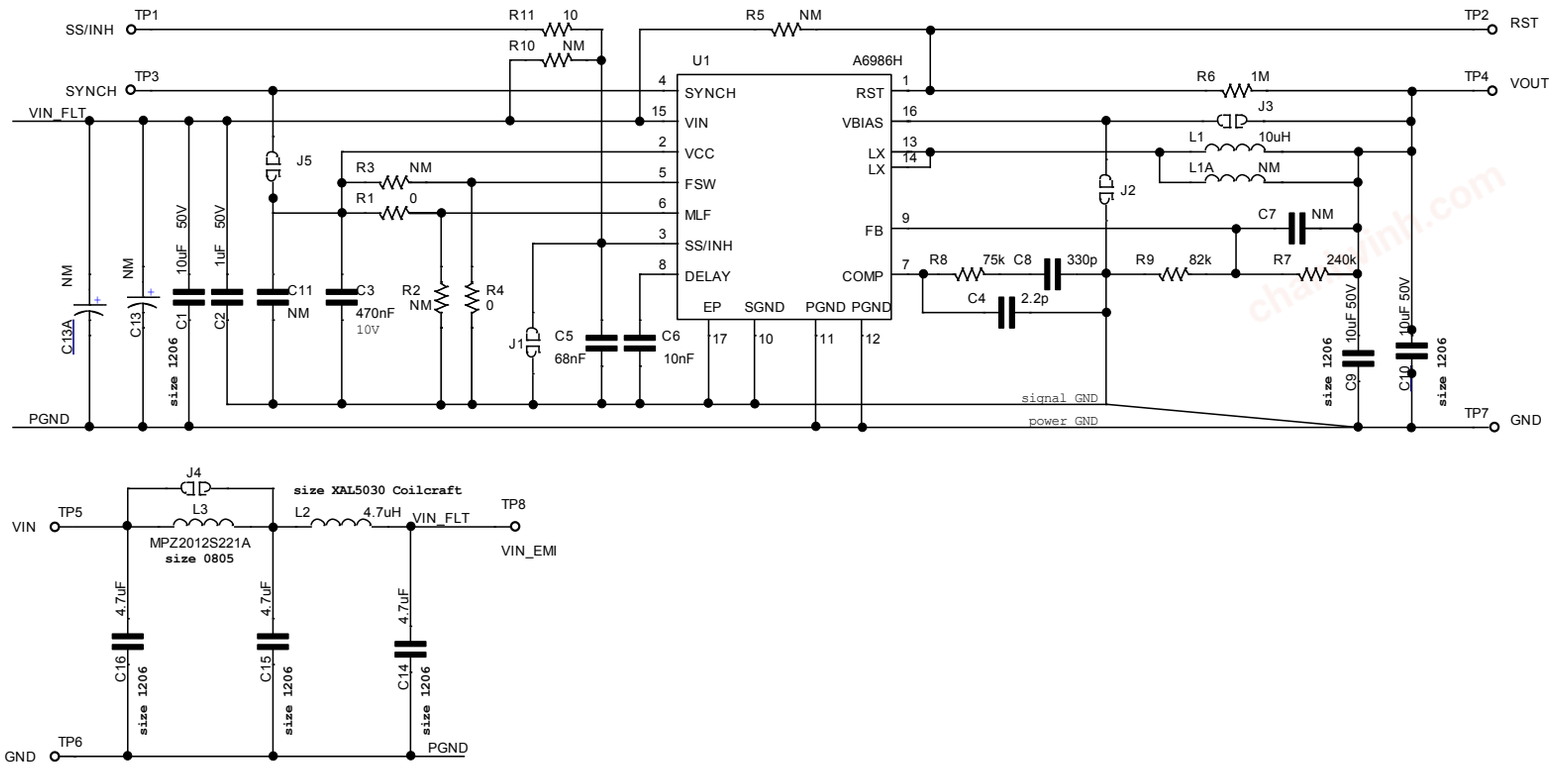
A Low Noise Mode (LNM) is also available to meet the requirements of infotainment applications of forced PWM mode in all loading conditions.

The default configuration of the board is output voltage set to 3.3 V configured in LCM, 500 kHz switching frequency, I_{SKIP} current set to high level and the switchover feature disabled. All of these settings can be easily changed by the user to evaluate different application scenarios.

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1 Schematic diagram

Figure 1. **STEVAL-ISA205V1 board schematic**



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Revision history

Table 1. **Document revision history**

Date	Version	Changes
02-Apr-2019	1	Initial release.

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