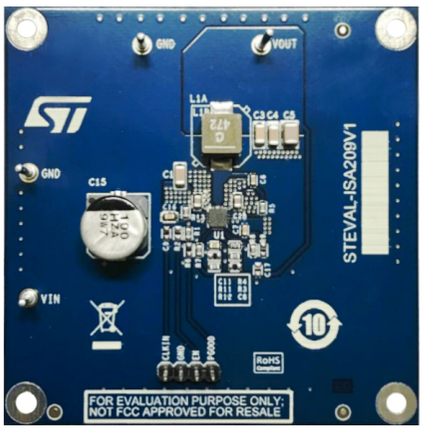
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STEVAL-ISA209V1

Data brief

38 V, 3 A synchronous step-down switching regulator evaluation board based on the L6983NQTR



Product summary	
38 V, 3 A synchronous step-down switching regulator evaluation board based on the L6983NQTR	STEVAL-ISA209V1
38 V 3A synchronous step-down converter with 17 µA quiescent current	L6983

Features

- 3.5 V to 38 V operating input voltage
- Output voltage from 0.85 V to VIN
- 3.3 V and 5 V fixed output voltage versions
- 3 A DC output current
- 17 µA operating quiescent current
- Internal compensation network
- Two different versions:
  - LCM for high efficiency at light loads
  - LNM for noise sensitive applications
- 2 µA shutdown current
- Internal soft-start
- Enable
- Overvoltage protection
- Output voltage sequencing
- Thermal protection
- QFN16 package
- 200 kHz to 2.2 MHz programmable switching frequency; stable with low ESR capacitor.
- Optional spread spectrum for improved EMC
- Power Good
- Synchronization to external clock for LNM devices

Description

The L6983 is an easy to use synchronous monolithic step-down regulator capable of delivering up to 3 A DC to the load, and the wide input voltage range makes the device suitable for a broad range of applications. The L6983NQTR used in this evaluation board is based on peak current mode architecture and is packaged in a QFN16 3x3 with internal compensation, thus minimizing design complexity and size.

The L6983 is available in low consumption mode (LCM) and low noise mode (LNM) versions. LCM maximizes the efficiency at light-load with controlled output voltage ripple, which is ideal for battery-powered applications. LNM sets the switching frequency and minimizes the output voltage ripple overload current range, meeting the specification for low noise sensitive applications.

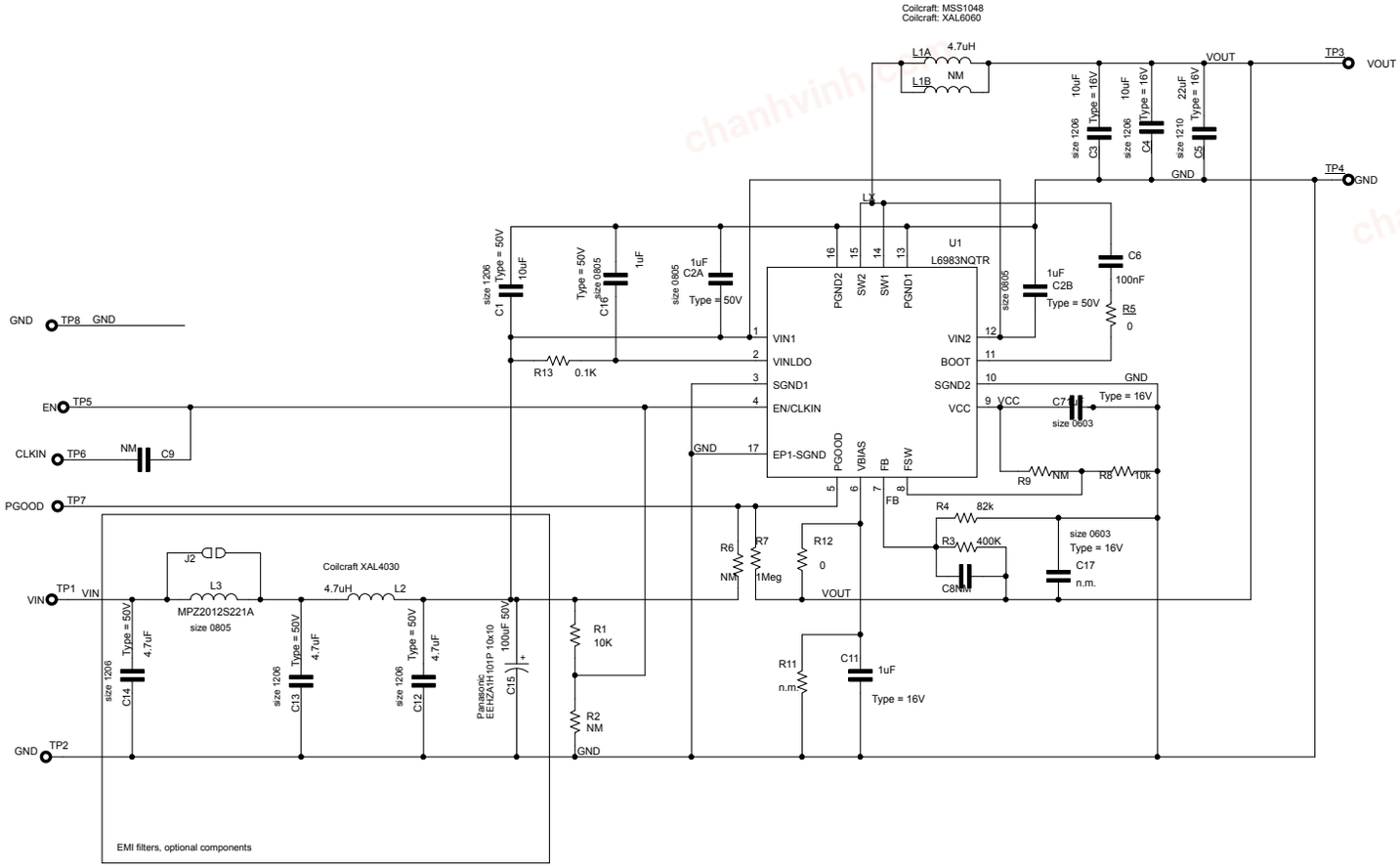
The L6983 allows a 200 Hz - 2.2 MHz switching frequency range with optional spread spectrum for improved EMC. The EN pin provides an enable/disable function, and the typical shutdown current is 2 µA when disabled. As soon as the EN pin is pulled up, the device is enabled and an internal 1.3 ms soft-start sequence is triggered.

The device also features a Power Good open collector that monitors the FB voltage. Pulse-by-pulse current sensing on both power elements implements effective constant current protection and thermal shutdown prevents thermal run-away.

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1 Schematic diagrams

Figure 1. STEVAL-ISA209V1 schematic diagram



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Revision history

Table 1. **Document revision history**

Date	Version	Changes
16-Dec-2019	1	Initial release.

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