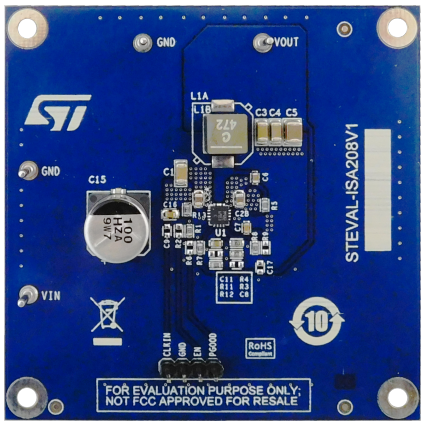
STEVAL-ISA208V1

Data brief

38 V, 3 A synchronous step-down switching regulator evaluation board based on the L6983CQTR



Product summary	
38 V, 3 A synchronous step-down switching regulator evaluation board based on the L6983CQTR	STEVAL-ISA208V1
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
- Thermal protection
- Output voltage sequencing
- 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

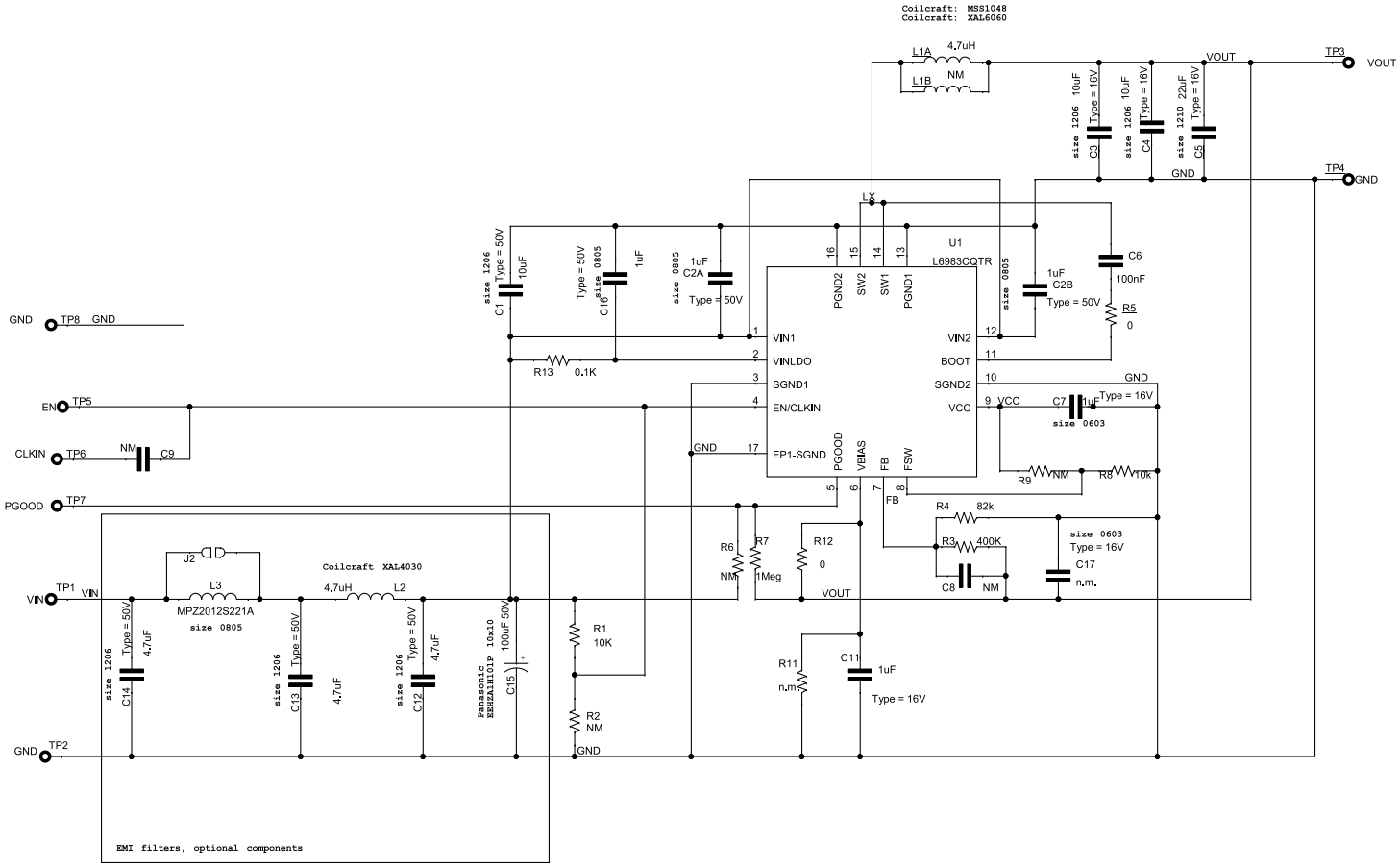
The L6983 is an easy-to-use synchronous monolithic step-down regulator capable of delivering up to 3 A_{DC} to the load. Its wide input voltage range makes the device suitable for a broad range of applications. The device implements peak current mode architecture in a QFN16 3x3 package with internal compensation to minimize design complexity and size.

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

The L6983 allows switching frequency selection between 200 Hz and 2.2 MHz with optional spread spectrum for improved EMC. The EN pin provides enable/disable function. The typical shutdown current is 2 µA when disabled. When the EN pin is pulled up, the device is enabled and the internal 1.3 ms soft-start takes place. The device features 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 runaway.

1 Schematic diagram

Figure 1. STEVAL-ISA208V1 schematic diagram



Revision history

Table 1. **Document revision history**

Date	Version	Changes
08-Nov-2019	1	Initial release.

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