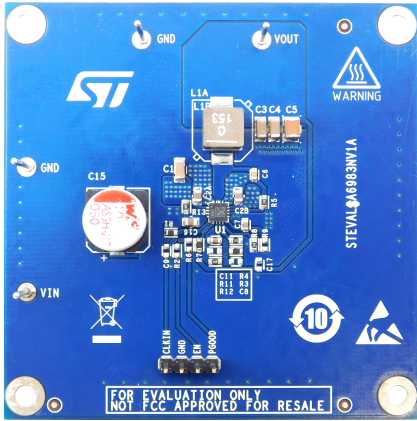


Evaluation board based on DC-DC converter buck regulator A6983NQTR



Features

- AEC-Q100 Grade 1 qualified
- Operating temperature range: -40 to +150°C for T_j
- 3.5 to 38 V operating input voltage
- Output voltage from 0.85 V to V_{IN}
- 3.3 and 5 V fixed output voltage versions
- 3 A DC output current
- Internal compensation network
- Noise sensitive applications
- 2 μA shutdown current
- Internal soft-start
- High voltage V_{IN} compatible enable
- Output overvoltage protection
- Output voltage sequencing
- Thermal protection
- 0.2 to 2.2 MHz programmable switching frequency
- Stable with low ESR capacitor min. 22 μF
- Optional spread spectrum for improved EMC
- Power good
- Synchronization with an external clock
- QFN16 (3 x 3 mm) package

Product summary	
Evaluation board based on DC-DC converter buck regulator A6983NQTR	STEVAL-A6983NV1
Automotive-grade 38 V, 3 A synchronous step-down converter with 25 μA quiescent current	A6983NQTR
Applications	Automotive Body and Convenience

Description

The **STEVAL-A6983NV1** is an easy to use synchronous monolithic step-down regulator capable of delivering up to 3 A DC to the load.

The wide input voltage range makes the device suitable for a broad range of applications.

The **STEVAL-A6983NV1** is based on a peak current mode architecture and is packaged in a QFN16 (3 x 3 mm) with internal compensation thus minimizing design complexity and size.

The device is designed for applications active during car parking, so it maximizes the efficiency at the light-load with the controlled output voltage ripple.

The **STEVAL-A6983NV1** allows the switching frequency to be selected in the 200 kHz - 2.3 MHz range with optional spread spectrum for improved EMC.

The EN pin provides enable/disable functionality. The typical shutdown current is 2 μA when disabled.

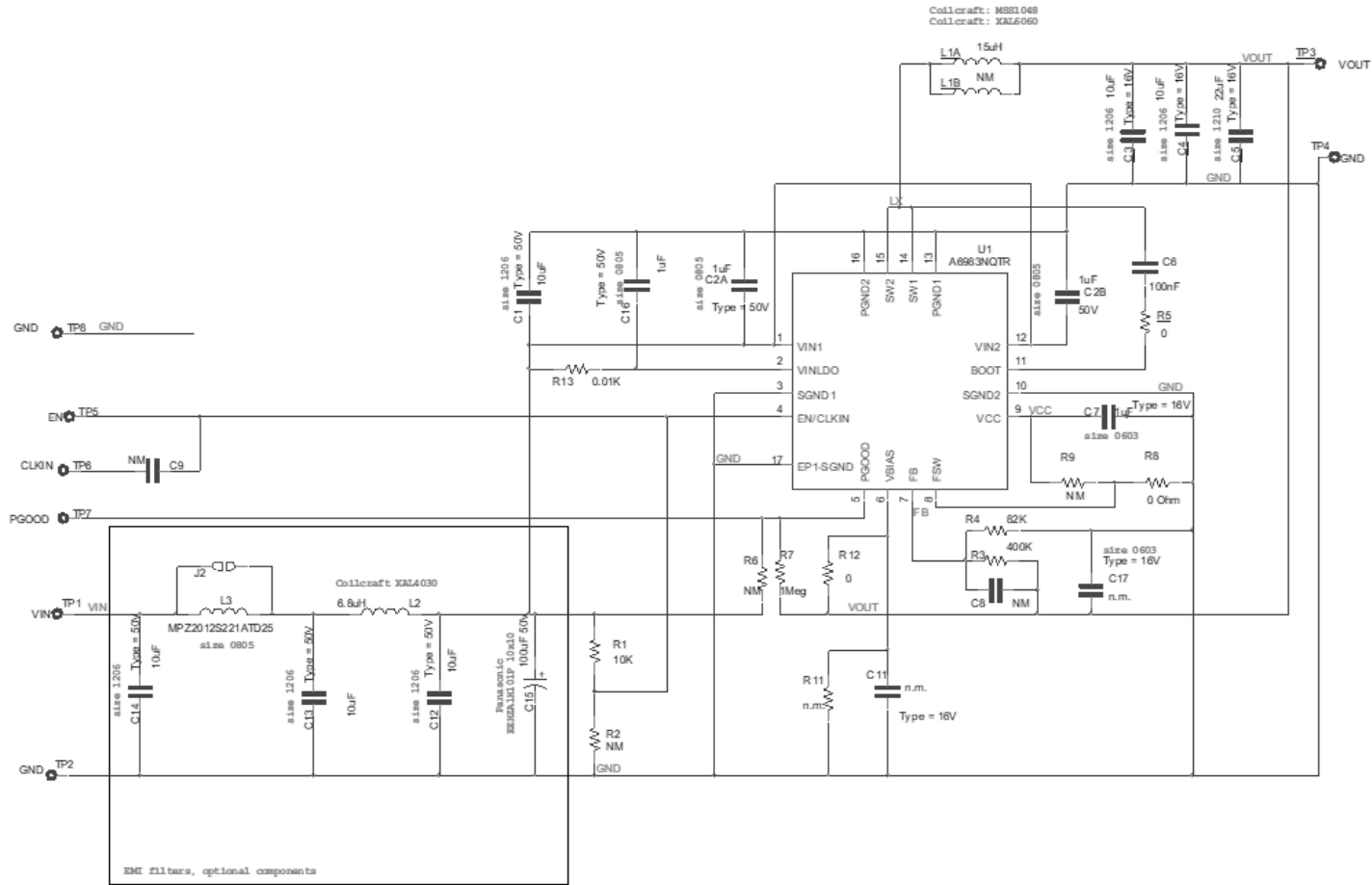
As soon as the EN pin is pulled-up the device is enabled and the internal 1.3 ms soft-start takes place.

The **STEVAL-A6983NV1** features Power Good opencollector that monitors the FB voltage.

Pulse by pulse current sensing on both power elements implements an effective constant current protection and thermal shutdown prevents thermal run-away.

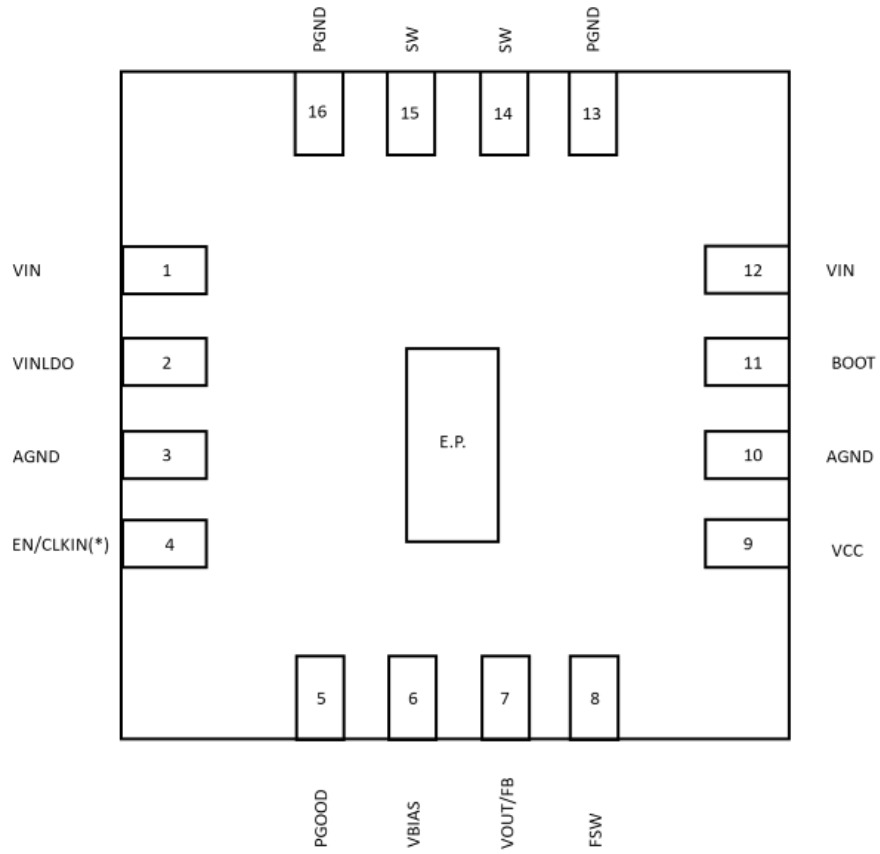
1 Schematic diagrams

Figure 1. STEVAL-A6983NV1 schematic diagrams



2 Pin connection

Figure 2. Pin connection QFN16



3 Board versions

Table 1. STEVAL-A6983NV1 versions

PCB version	Schematic diagrams	Bill of materials
STEVAL\$A6983NV1A ⁽¹⁾	STEVAL\$A6983NV1A schematic diagrams	STEVAL\$A6983NV1A bill of materials

1. This code identifies the STEVAL-A6983NV1 evaluation board first version.

Revision history

Table 2. Document revision history

Date	Revision	Changes
09-Feb-2024	1	Initial release.

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