

38 V, 1.5 A synchronous step-down switching regulator evaluation board based on the L6981NDR for industrial power systems



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
- 1.5 A DC output current
- 17 μ A operating quiescent current (fixed Vout part numbers)
- Internal compensation network
- Low noise mode version for noise sensitive applications
- 2 μ A shutdown current
- Internal soft-start
- Enable function
- Overvoltage protection
- Output voltage sequencing
- Thermal protection
- SO-8 package
- Synchronization with external clock for LNM devices

Description

The **STEVAL-L6981NDR** is based on the **L6981NDR** synchronous monolithic step-down regulator delivering up to 1.5 A DC.

Its wide input voltage range makes the solution suitable for a broad range of applications.

The device implements peak current mode architecture in a SO 8L package with internal compensation to minimize design complexity and size.

The **L6981** is available in low consumption mode (LCM) and low noise mode (LNM) versions.

LCM maximizes efficiency at light-load with controlled output voltage ripple, making the device extremely suitable 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.

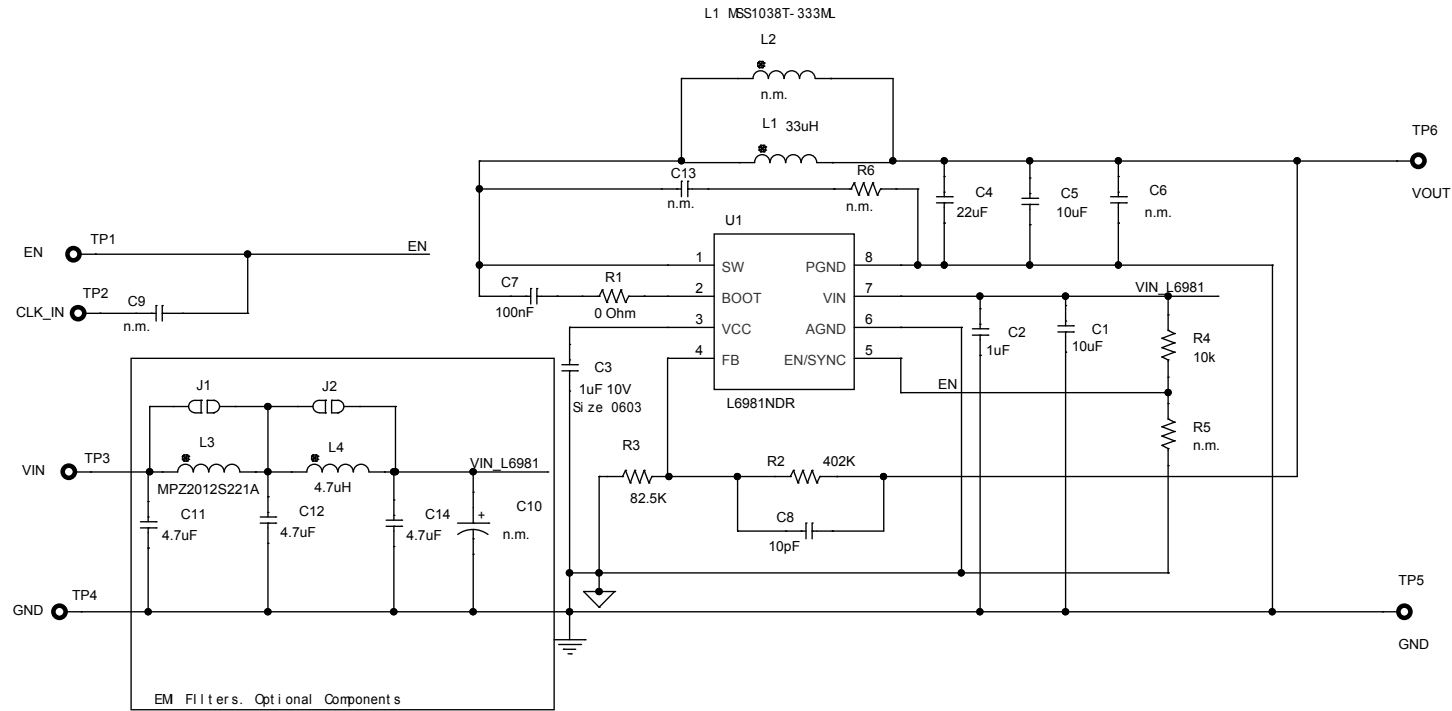
The EN pin manages the enable/disable function. The typical shutdown current is 2 μ A when disabled. When the EN pin is pulled up, the device is enabled and the internal 1.3 ms soft-start takes place.

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

Product summary	
38 V, 1.5 A synchronous step-down switching regulator evaluation board based on the L6981NDR for industrial power systems	STEVAL-L6981NDR
38 V, 1.5 A synchronous step-down converter in low noise mode	L6981NDR
Applications	Power Systems

1 Schematic diagrams

Figure 1. STEVAL-L6981NDR circuit schematic



Revision history

Table 1. Document revision history

Date	Version	Changes
16-Feb-2021	1	Initial release.
01-Mar-2021	2	Updated cover page description.
19-Sep-2022	3	Updated title, features and product summary.

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