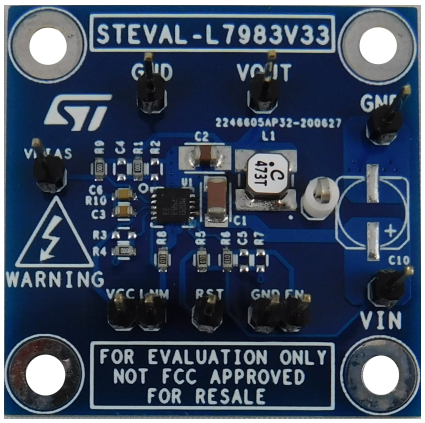
STEVAL-L7983V33

Data brief

3.3 V/0.3 A step down DC/DC converter (V_{IN} = 3.5 V to 60 V) based on the L7983PU33R



Product summary	
3.3 V/0.3 A step down DC/DC converter (VIN = 3.5V to 60 V) based on the L7983PU33R	STEVAL-L7983V33
60 V, 300 mA synchronous step-down switching regulator with 10 µA quiescent current	L7983PU33R
Applications	Buck Converter

Features

- 3.5 V to 60 V operating input voltage
- Step-down (buck) conversion
- 3.3 V output voltage
- 300 mA DC max. output current
- 1 MHz selected switching frequency
- Dynamic Low Consumption Mode to Low Noise Mode selection
- Internal soft-start
- Synchronization to external clock
- Internal compensation network
- Auto recovery overcurrent, overvoltage and thermal protection
- RoHS and China RoHS compliant
- WEEE compliant (2012/19/UE RAEE II)

Description

The STEVAL-L7983V33 product evaluation board is a step-down switching power supply based on the L7983PU33R regulator in a DFN10 3x3 mm package with fixed 3.3 V output voltage. The programmed switching frequency is 1 MHz and it can be adjusted by applying an external clock on LNM/LCM pin or by changing the frequency programming resistor.

The L7983 device is a step-down monolithic switching regulator able to deliver up to 300 mA DC based on peak current mode architecture. The wide input voltage range and adjustable UVLO threshold meet the specification for the 12 V, 24 V and 48 V industrial bus standards.

L7983 supports dynamic Low Consumption Mode (LCM) to Low Noise Mode (LNM) transition.

LCM is designed for applications which remain active in idle mode to maximize the efficiency under light load condition with controlled output voltage ripple. LNM makes the switching frequency constant over load current range, meeting the low noise application specification.

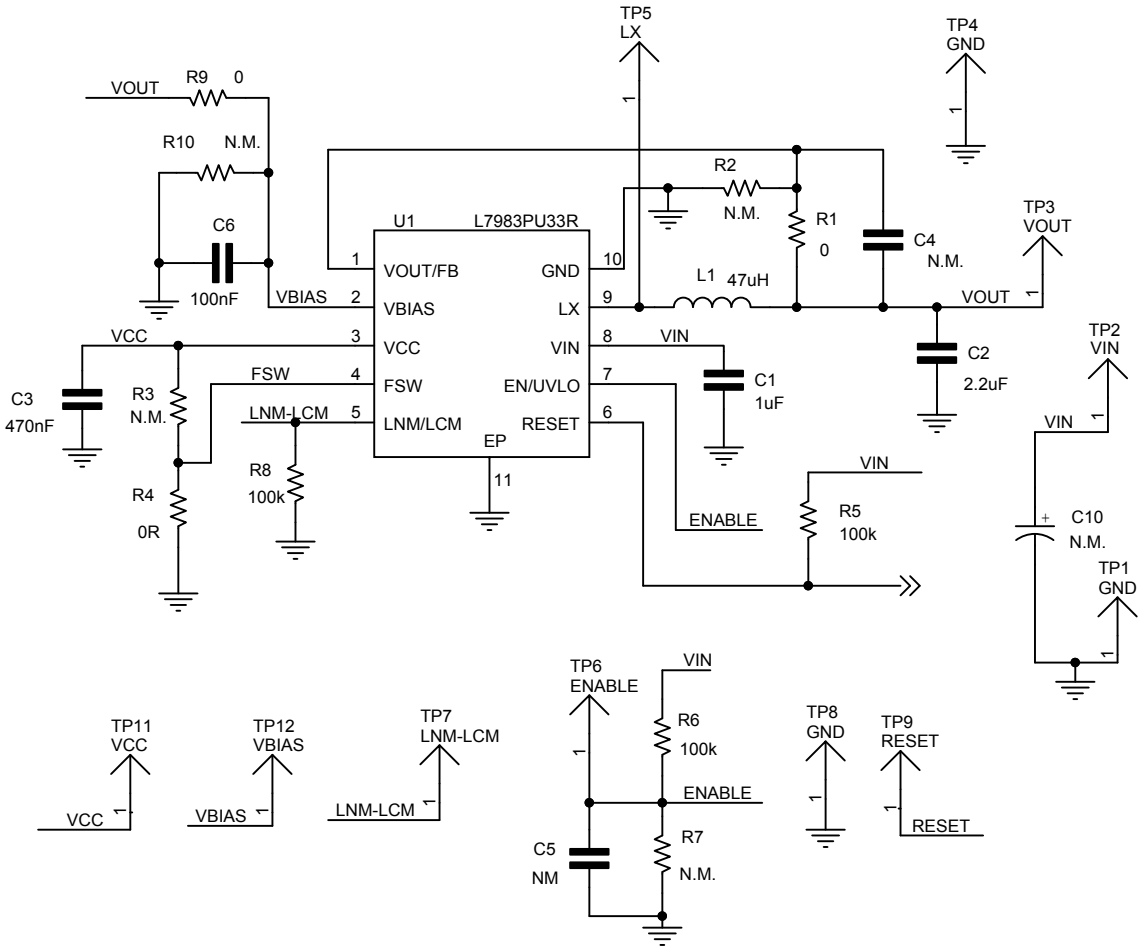
The soft start time is internally fixed and the output voltage supervisor manages the reset phase for any digital load (µC, FPGA, etc.).

The internal compensation network features high noise immunity, simple design and component cost reduction. The RST open collector output can also implement output voltage sequencing during the power-up phase.

Synchronous rectification, designed for high efficiency under medium to heavy load, and the high switching frequency capability reduce the application size. Pulse by pulse current sensing on both power elements implements an effective constant current protection.

1 Schematic diagram

Figure 1. **STEVAL-L7983V33 board schematic**



Revision history

Table 1. **Document revision history**

Date	Version	Changes
01-Oct-2020	1	Initial release.