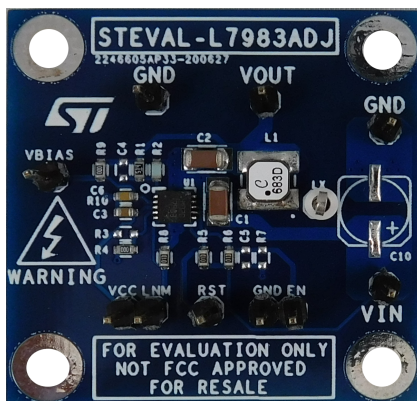


## 12 V/0.3 A step down DC/DC converter ( $V_{IN} = 12$ to 60 V) based on the L7983PUR regulator



### Features

- 12 V to 60 V operating input voltage
- Step-down (buck) conversion
- 12 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-L7983ADJ step-down switching power supply evaluation board is based on the L7983PUR regulator in an DFN10 3x3 mm package with 12 V set output voltage. The selected switching frequency is 1 MHz and it can be adjusted by applying an external clock on the LNM/LCM pin or by changing the frequency programming resistor.

The step-down monolithic switching regulator can 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 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 with active idle mode to maximize the efficiency at light load with controlled output voltage ripple, while LNM keeps the switching frequency constant over the load current range for low noise applications.

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

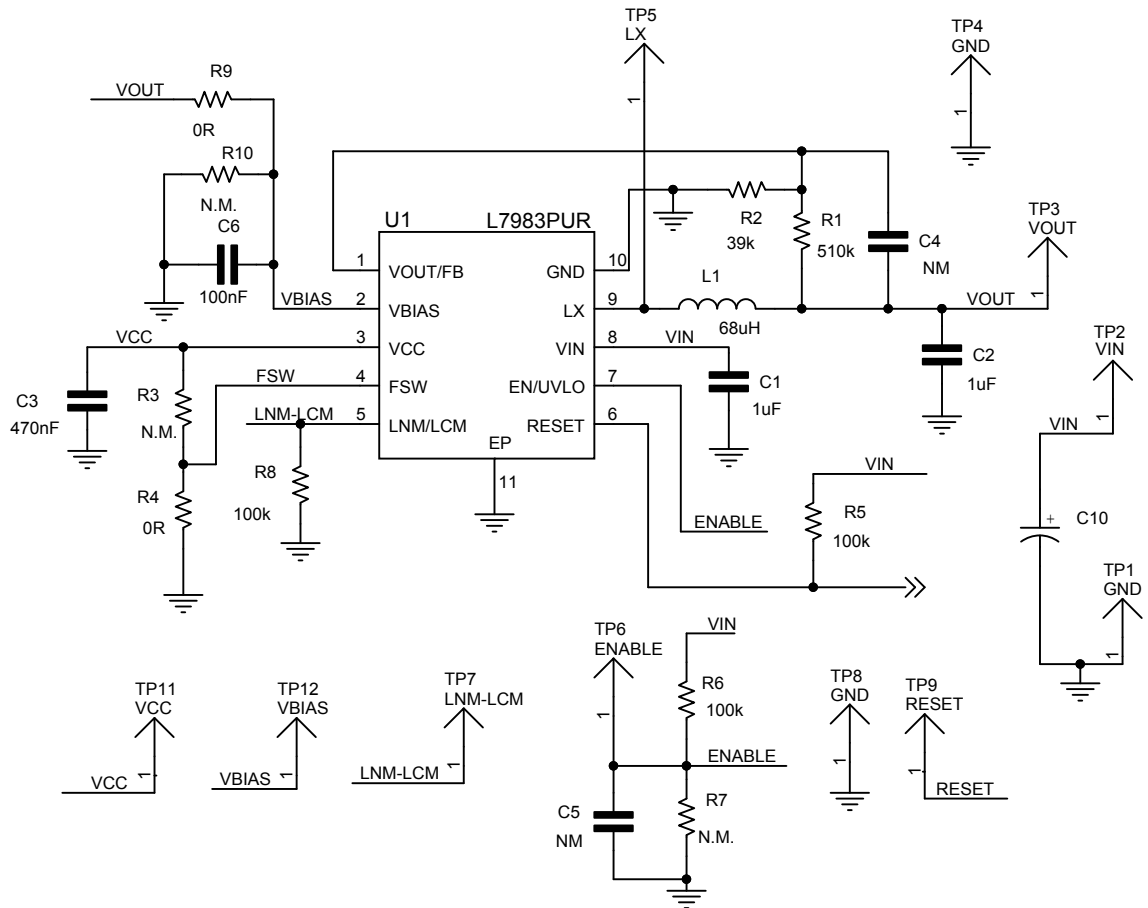
The internal compensation network features high noise immunity, simple design and component cost savings. The RST open collector output can also implement output voltage sequencing during the power-up phase.

The synchronous rectification, designed for high efficiency at medium to heavy loads, and the high switching frequency capability contribute to size reduction in final application designs. Pulse-by-pulse current sensing on both power elements implements effective constant current protection.

Product summary	
12 V/0.3 A step down DC/DC converter ( $V_{IN} = 12$ V to 60 V) based on the L7983PUR	STEVAL-L7983ADJ
60 V, 300 mA synchronous step-down switching regulator with 10 $\mu$ A quiescent current	L7983PUR
Applications	Buck Converter

# 1 Schematic

Figure 1. STEVAL-L7983ADJ board schematic



## Revision history

**Table 1. Document revision history**

Date	Version	Changes
11-Sep-2020	1	Initial release.

**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, please refer to [www.st.com/trademarks](http://www.st.com/trademarks). All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2020 STMicroelectronics – All rights reserved