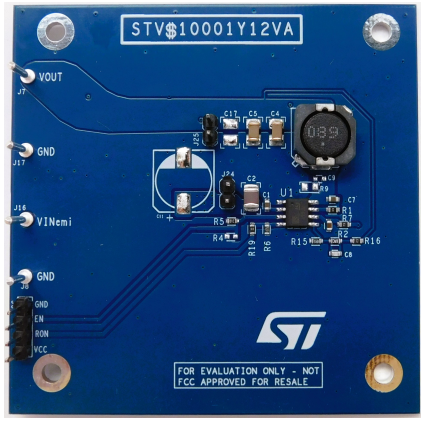
STEVAL-10001Y12V

Data brief

Evaluation board based on DC-DC converter Buck regulator with DCP10001Y



Product summary	
Evaluation board based on DC-DC converter Buck regulator with DCP10001Y	STEVAL-10001Y12V
Automotive 100 V 1 A synchronous step-down converter	DCP10001PHRY
Applications	Battery electric vehicle control supply 48V to 12V DC/DC converter 48 V input voltage bus and automotive applications

Features

- AEC-Q100 Grade 1 qualified
- 6 to 85 V input voltage range
- Step-down buck conversion
- 12 V output voltage adjustable between 1.5 and 30 V
- 1 A max current
- 450 kHz switching frequency adjustable (100 kHz -1 MHz)
- 2 Layer 70 x 70 mm demoboard
- Compliant to IPC-2221B requirements for clearance and creepage
- Dithering for EMI reduction
- V^2COT control mode architecture
- Low quiescent current (14 µA) to improve efficiency at low load current
- Efficiency at 1 A load
  - 92% for 48 to 12 V at 450 kHz conversion
- Fixed 3.8 ms internal soft start timer
- Over current protection (OCP), overvoltage protection (OVP), and overtemperature protection (OTP)
- Operating temperature range: -40°C to 150°C
- RoHS compliant

Description

The STEVAL-10001Y12V is a step-down switching power supply based on the DCP10001Y synchronous buck controller with high-performance integrated FETs.

The STEVAL-10001Y12V supports a wide input voltage range from 6 to 100 V and operates at 450 kHz to regulate a 12 V output at up to 1 A.

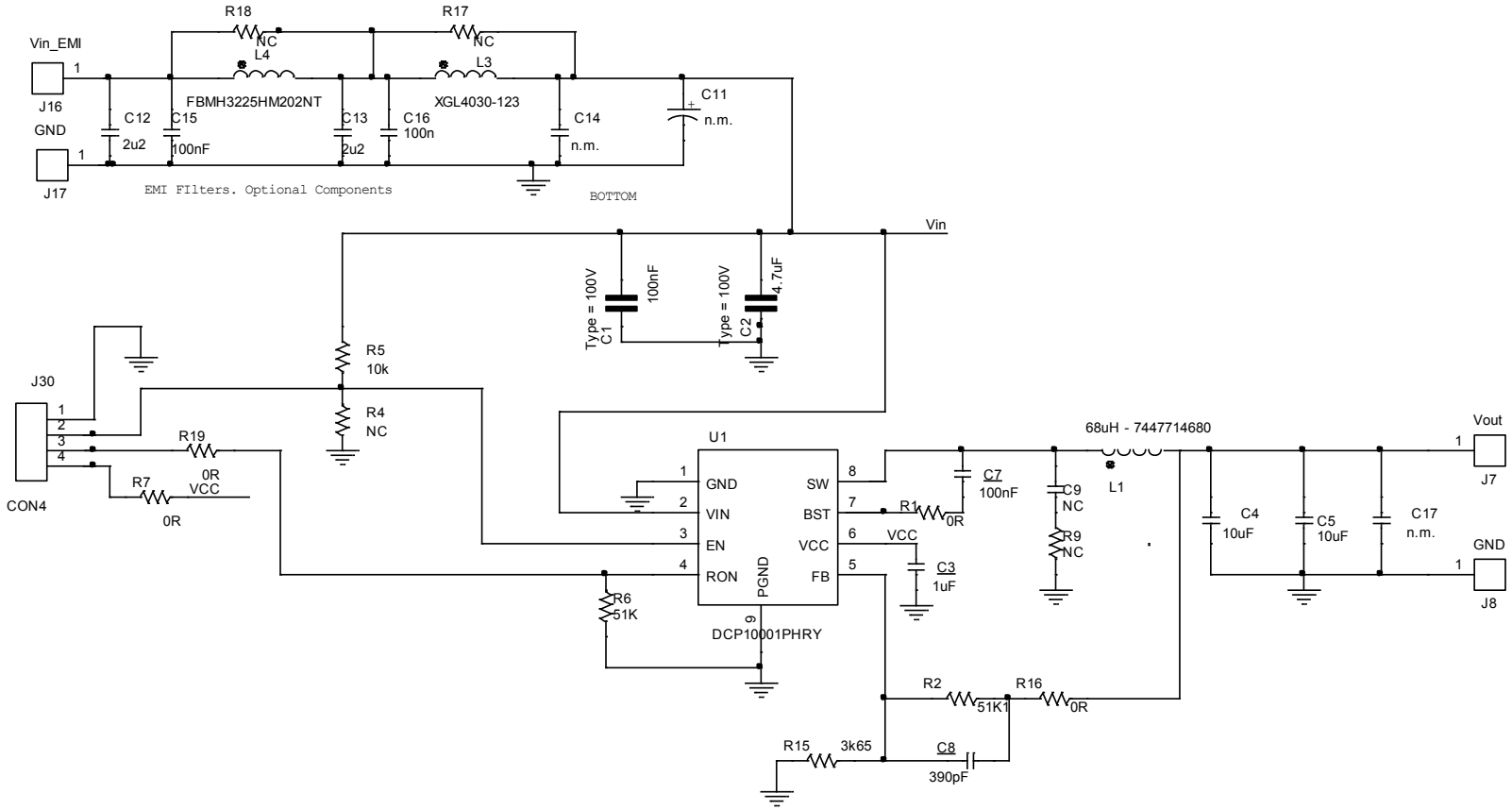
The output voltage and switching frequency can be selected using onboard resistors.

The DCP10001Y is AEC-Q100 Grade 1 qualified and is available in a HSOP-8L package. In shutdown mode, its current consumption is less than 1 µA. When the EN pin is driven high, the device initiates a 3.8 ms soft-start sequence. By default, the device uses spread-spectrum modulation to help reduce EMI and potentially lower input-filter costs.

It also includes overcurrent (OCP), overvoltage (OVP), and overtemperature (OTP) protection.

1 Schematic diagrams

Figure 1. **STEVAL-10001Y12V circuit schematic**



2 Board versions

Table 1. STEVAL-10001Y12V versions

Finished good	Schematic diagrams	Bill of materials
STV$10001Y12VA(1)	STV$10001Y12VA schematic diagrams	STV$10001Y12VA bill of materials

1. *This code identifies the STEVAL-10001Y12V evaluation board first version.*

Revision history

Table 2. **Document revision history**

Date	Revision	Changes
27-Oct-2026	1	Initial release.

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