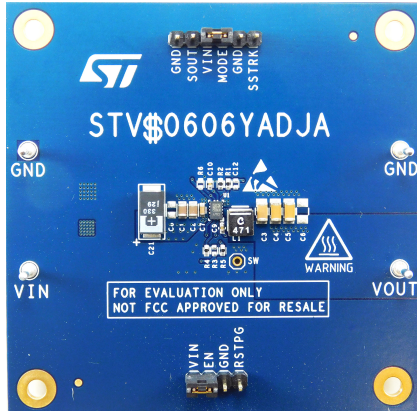


## 3.3 V/6 A automotive step down DC-DC converter (VIN up to 6 V) based on the DCP0606Y



### Features

- 5 V (up to 6 V) operating input voltage
- Step-down (buck) conversion
- 3.3 V programmed output voltage
- 6 A DC maximum output current
- 2.25 MHz selected switching frequency with dithering
- Dynamic low consumption mode to low noise mode selection
- Programmable 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-0606YADJ** product evaluation board is a step-down switching power supply based on the **DCP0606Y** regulator in a QFN11 2x3mm package.

The programmed switching frequency is 2.25 MHz with dithering and it can be adjusted by applying an external clock on MODE/SIN pin or by changing the frequency programming resistor.

The **DCP0606Y** is a high efficiency monolithic step-down synchronous switching regulator designed to deliver up to 6A continuous current.

The IC operates from 2.9 V to 6 V input voltage. **DCP0606Y** features low-resistance integrated N-channel MOSFETs and diode emulation working mode for optimum efficiency over all the loading range.

The integrated 0.6 V reference allows the regulation of output voltages with  $\pm 1.5\%$  accuracy over temperature variations.

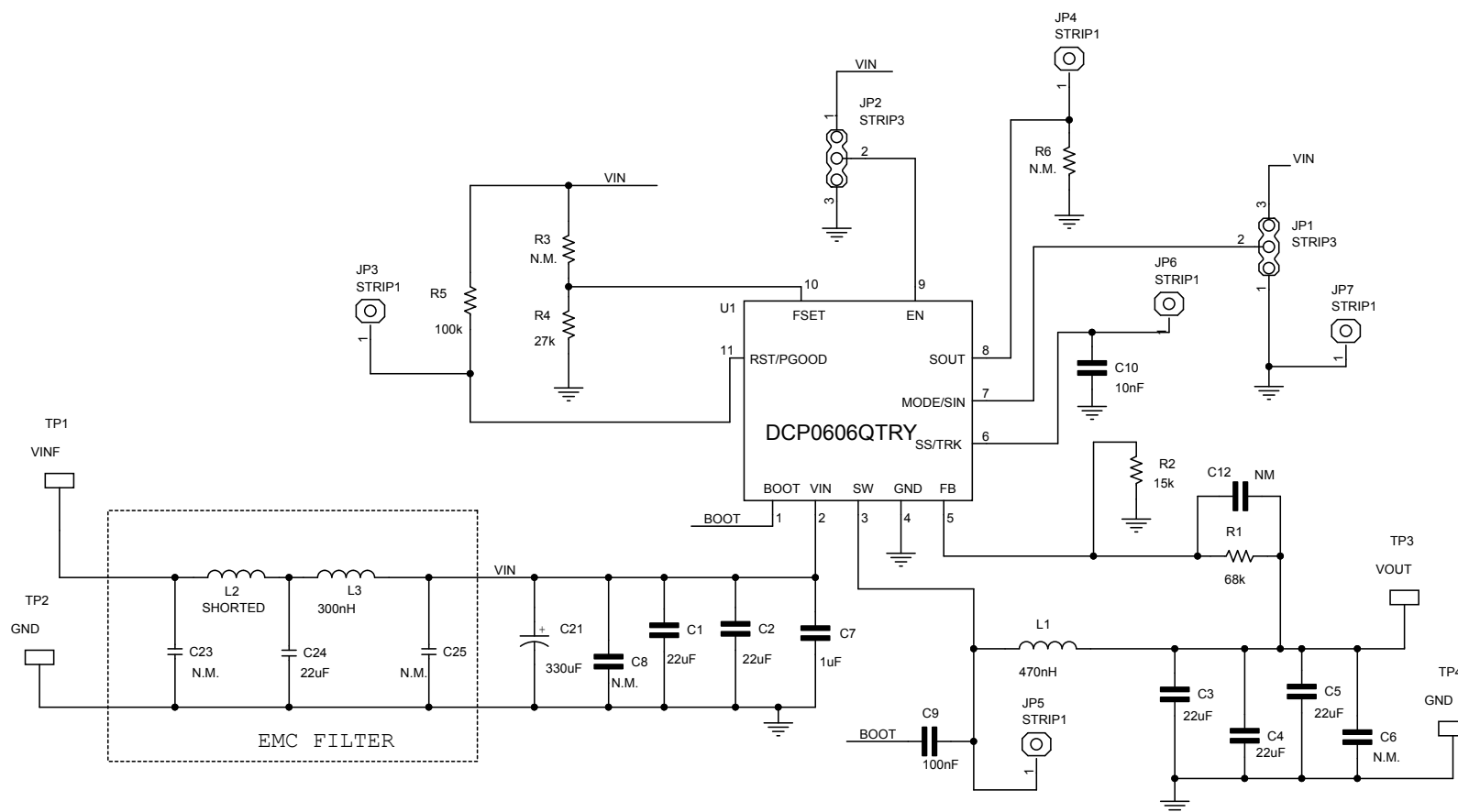
The switching frequency is externally adjustable between 1.8 MHz and 4 MHz.

The soft-start duration can be adjusted with an external capacitor or the same SS/TRK pin can be used for output voltage sequencing while the RST/PGOOD pin provides real-time information on the output voltage.

#### Product summary

|                                                                                      |                         |
|--------------------------------------------------------------------------------------|-------------------------|
| 3.3 V/6 A automotive step down DC-DC converter (VIN up to 6 V) based on the DCP0606Y | <b>STEVAL-0606YADJ</b>  |
| QFN 2x3 11 Leads                                                                     | <b>DCP0606QTRY</b>      |
| Applications                                                                         | <b>DC-DC converters</b> |

Figure 1. STEVAL-0606YADJ circuit schematic



## 2 Board versions

**Table 1. STEVAL-0606YADJ versions**

| Finished good                 | Schematic diagrams                | Bill of materials               |
|-------------------------------|-----------------------------------|---------------------------------|
| STV\$0606YADJA <sup>(1)</sup> | STV\$0606YADJA schematic diagrams | STV\$0606ADJA bill of materials |

1. This code identifies the STEVAL-0606YADJ evaluation board first version.

## Revision history

**Table 2. Document revision history**

| Date        | Revision | Changes          |
|-------------|----------|------------------|
| 03-Apr-2025 | 1        | Initial release. |

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