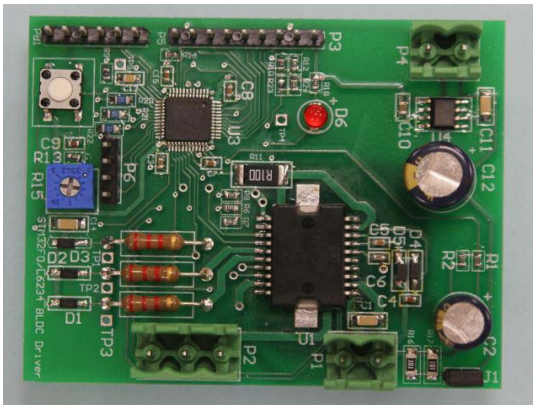
STEVAL-IHM043V1

6-step BLDC sensorless driver board based on the STM32F051 and L6234

Data brief

Features

- Input voltage range: 7 to 42 V_{dc}
- Output current: 2 A (5 A peak)
- Can operate up to 100% duty cycle
- RoHS compliant



Description

The STEVAL-IHM043V1 demonstration board is a three-phase permanent magnet brushless motor driver designed to drive a motor using a sensorless 6-step commutation technique. The board can operate from a DC input voltage between 7 and 42 V_{DC} and supply a continuous output current of 2 A to the motor.

The circuit consists of three main blocks:

The digital control block uses the STM32F051 microcontroller to implement the control algorithms, and generates the control signals for the power stage.

The second block is the power stage, consisting of a three-phase inverter bridge implemented using the L6234 three-phase motor driver IC.

The power supply block uses the ST78L33 linear regulator to provide the 3.3 V logic supply for the microcontroller.

1 Schematic diagram

Figure 1. 6-Step BLDC driver section

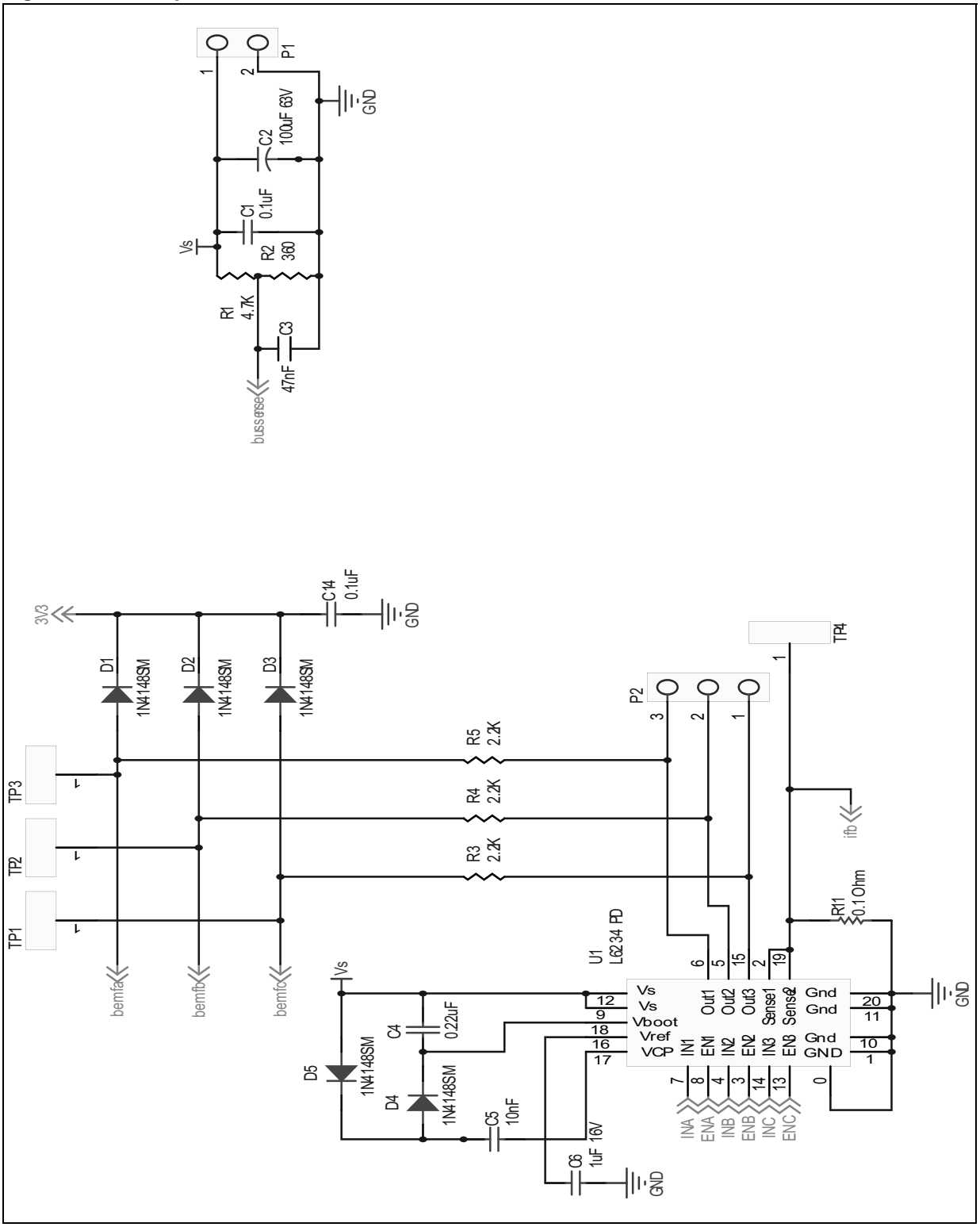
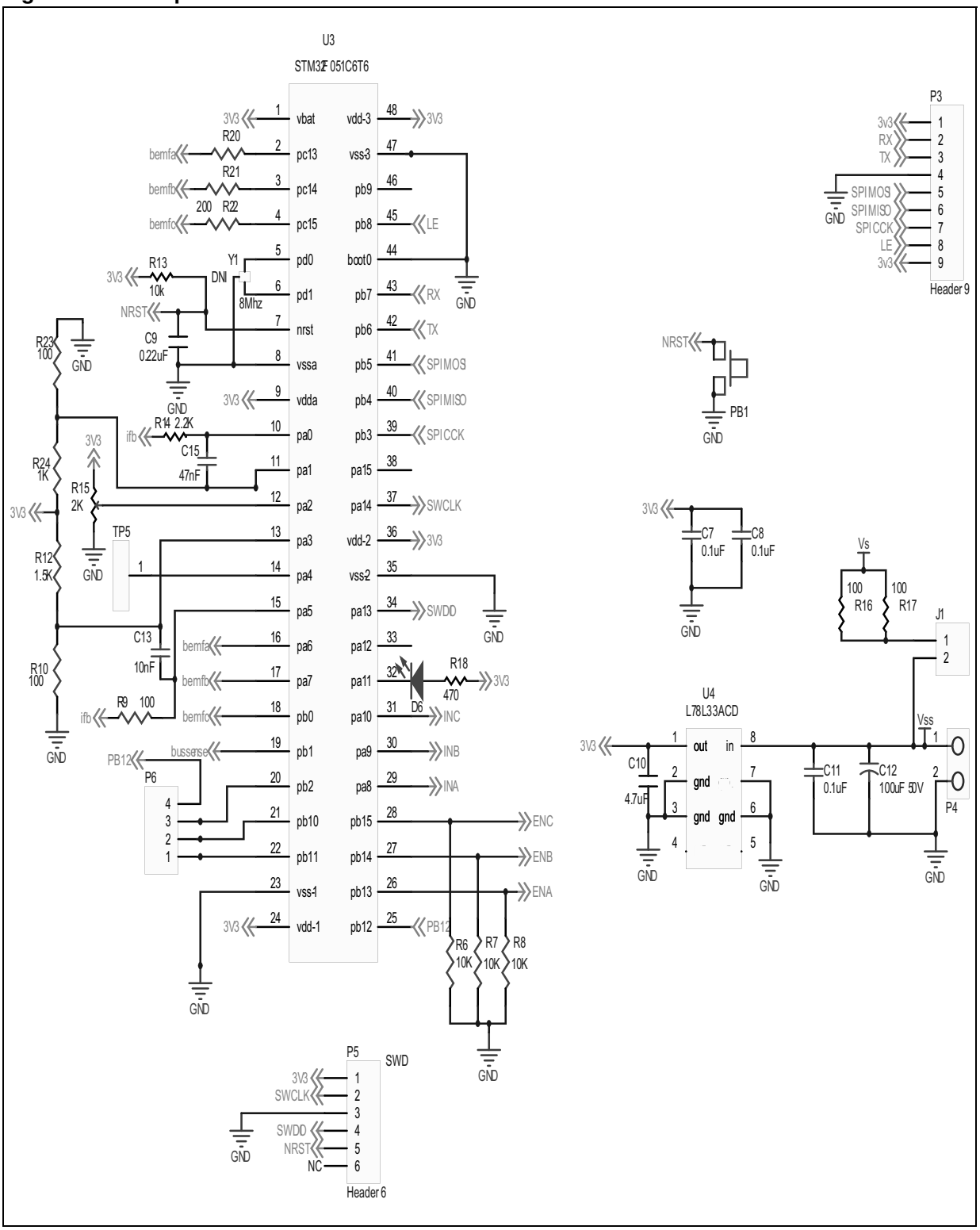


Figure 2. 6-Step BLDC driver connector section



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
11-Feb-2013	1	Initial release.