



# STEVAL-IEM003V1

Low voltage 3-phase power stage for electric traction with MC connector

Data brief

## Features

- BUS voltage up to 48 V and up to 3 kW
- 3-phase full bridge inverter topology
- Efficient power dissipation with power MOSFETs mounted on a dedicated IMS layer
- Motor current feedback via ICS
- Protection features:
  - bus overcurrent detection
  - bus voltage monitoring
  - power stage temperature sensing
- RoHS compliant

## Description

The STEVAL-IEM003V1 demonstration board is designed to drive a low voltage/high current 3-phase brushless synchronous or asynchronous motor up to 3 kW. Typical uses for the system include battery-powered traction system applications or high-power tools.

The demonstration board is composed of two stacked boards. The top layer is a power board where the power devices are mounted on a dedicated IMS layer, and the bottom board includes the gate driving, current sensing and power supply sections.

The STEVAL-IEM003V1 provides a compact solution and efficient power dissipation thanks to the power MOSFET used.

Thanks to the on-board MC connector, the STEVAL-IEM003V1 can be easily interfaced with any ST MCU control board equipped with the same type of MC connector.



# 1 Schematic diagrams

Figure 1. Power supply section circuit schematic

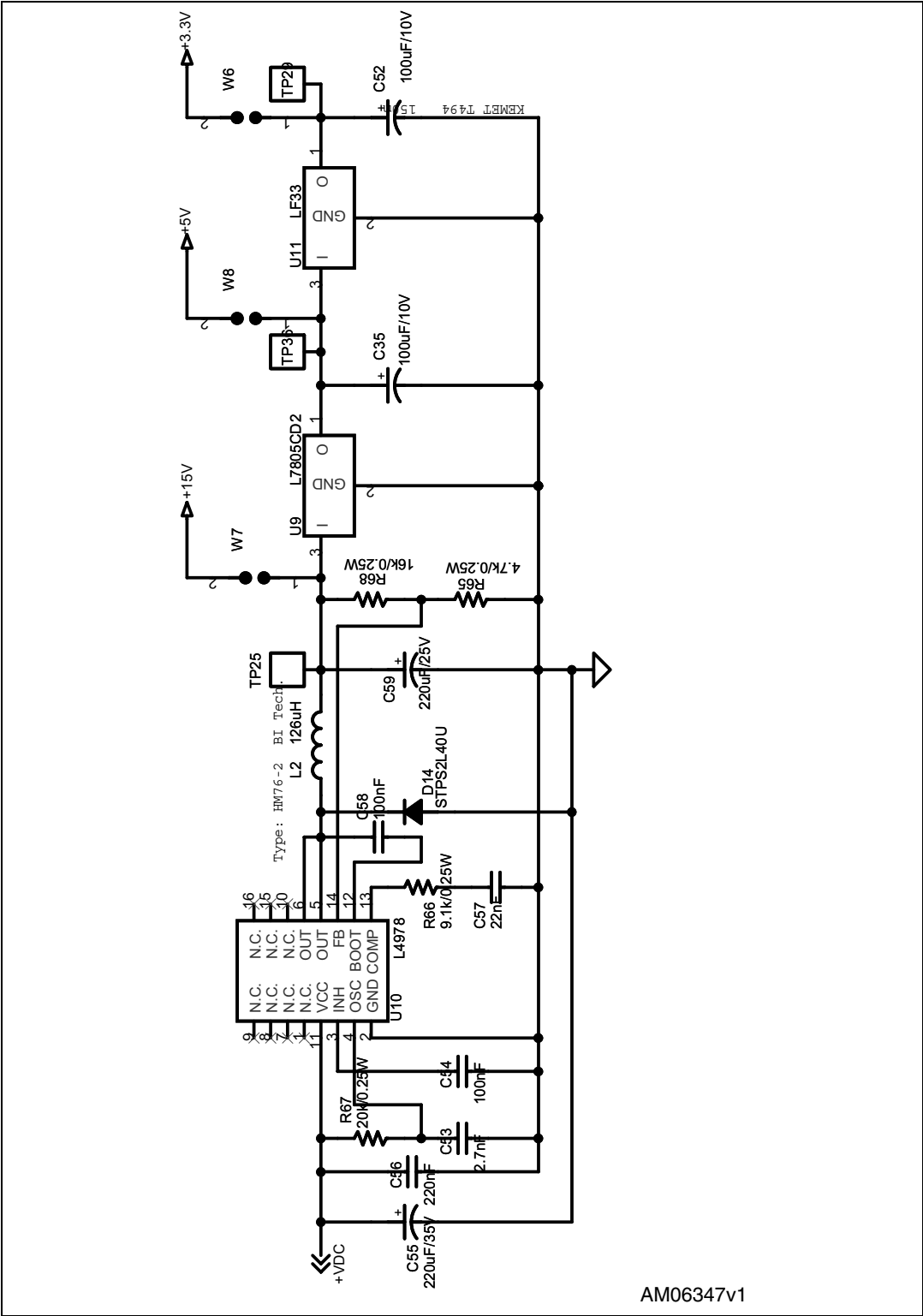
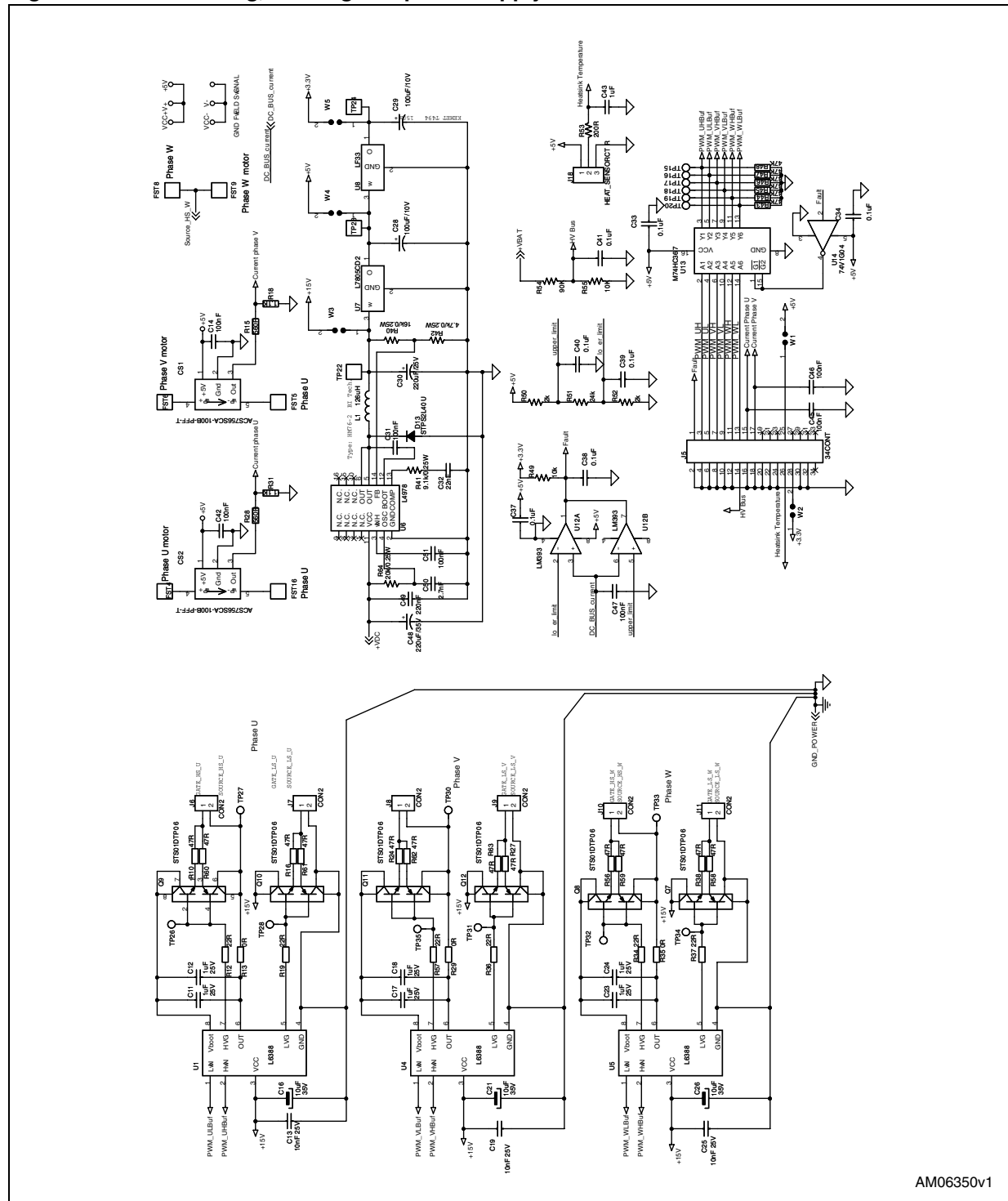


Figure 2. Gate driving, sensing and power supply section schematics



AM06350v1



## 2 Revision history

**Table 1. Document revision history**

| Date        | Revision | Changes          |
|-------------|----------|------------------|
| 08-Mar-2010 | 1        | Initial release. |

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