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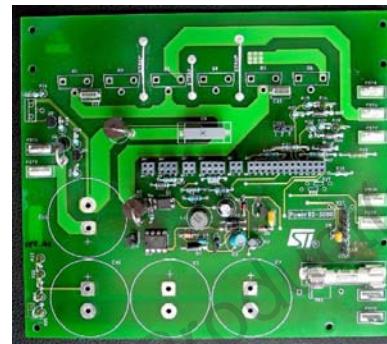
STEVAL-IHM005V1

BLDC & AC motor control
Power driver board 3 KW

Data Brief

Features

- Quick to set up, to install and easy to run
- Inverter stage IGBT short circuit rugged based
- Design is re-usable (the ORCAD source files are available for free)
- Several kinds of applications with six-step commutation or 6-signal PWM (sine wave-modulated) outputs, including: 3 Phase AC Induction motor control, 3 Phase BLDC/AC PM motor control (6-step sensorless), 3 Phase BLAC PM motor control (sinusoidal driven, with Hall sensors)
- Optimized layout to provide very low level of interference between the Power and the Signal noise
- Modular approach with three different power board module (300W, 1kW, 3kW)



STEVAL-IHM005V1

Description

The general hardware architecture of the reference design kit is based on an Inverter topology suitable to efficiently drive three types of motors: "3 Phase BLDC/AC Permanent Magnet (in six-step mode)" , "3 Phase AC Induction" and "3 Phase BLAC PM motor (sinusoidal driven)" plus a plug-in control board, based on ST7FMC MCU.

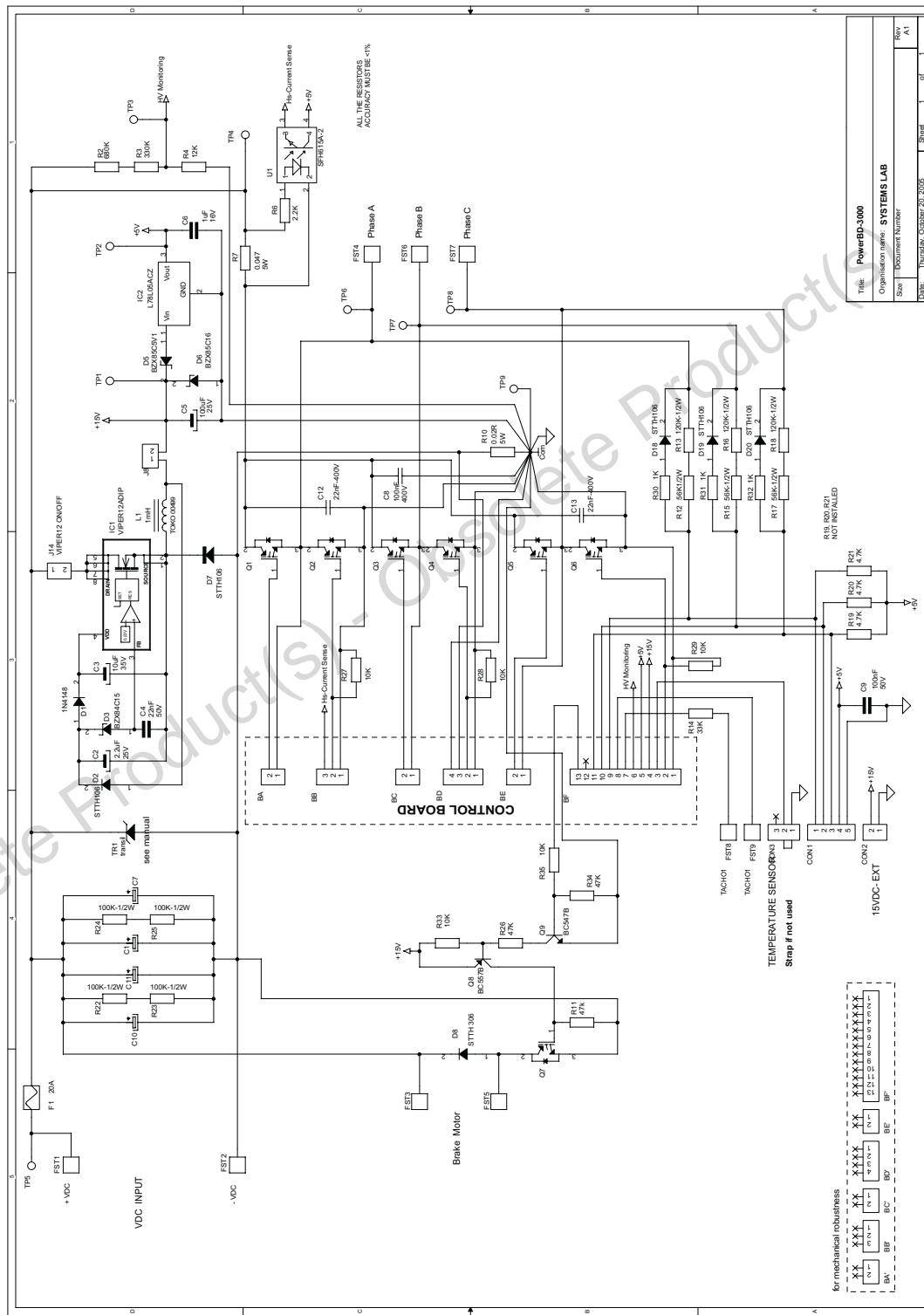
The inverter bridge is made by six IGBTs short circuit rugged rated at 10uS with different option of current capability in relationship to the power needed by the customer final application. The driving of the bridge is made by three IGBTs drivers (suited in the control board) with High Side/Low Side integrated functionality in a single chip with also several protections. The supply of the power is implemented using the Viper, a Vertical Intelligent Power Enhanced Regulators which combines an optimized, high voltage, Vertical Power MOSFET with state-of-the-art PWM circuitry.

Board schematic

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1 Board schematic

Figure 1. Scheme



STEVAL-IHM005V1**Revision history****2 Revision history****Table 1. Document revision history**

| Date | Revision | Changes |
|-------------|----------|-----------------|
| 19-Jul-2007 | 1 | Initial release |

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