



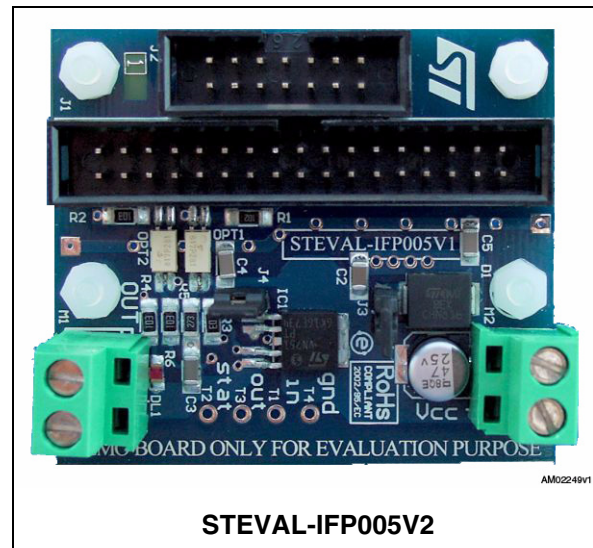
# STEVAL-IFP005V2

## High side driver demonstration board based on the VN751PT

Data brief

### Features

- 3 independent application programs
  - Hand dryer with infrared sensor and T1235H-6T switch
  - Bathroom fan with humidity sensor and ACS108 switch
  - Multi-entrance room controller with push button and BTB08-600SW switch
- Two potentiometers for setting sensor sensitivity and TRIAC turn-off delay
- Capacitive power supply (680 nF capacitor EPCOS B32923C3684
  - 5 V  $\pm$ 10%
  - Average output current: 16 mA
  - Standby power losses < 0.3 W @ 230 V
- Program selector (U2)
- ICC connector for software adjustment
- Free development area with hole matrix available for application breadboard adaptation
- Overvoltage protection is not implemented on the board but some solder pads are available to implement it in two different ways:
- Varistor addition between mains voltage
- Transil addition between TRIAC A2-G terminals
- RoHS compliant



### Description

The purpose of this design is to demonstrate the features of the VN751PT high-side driver.

The application offers robustness and complies with EMC industrial standards.

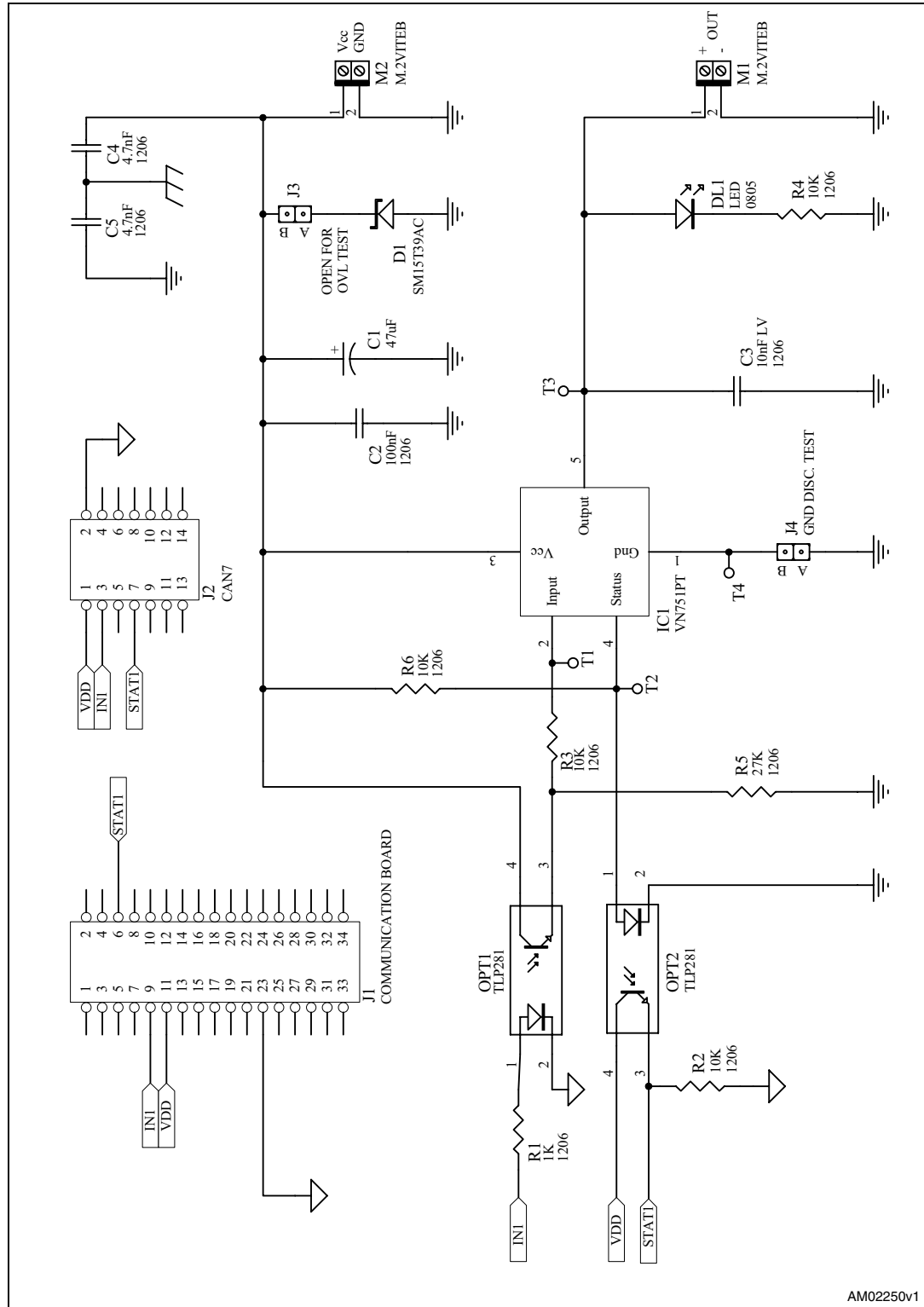
It implements short-circuit/overload protection and thermal management as well, achieving best in class MTBF values.

The reference design is suitable for use in programmable logic controllers (PLCs) as well as to drive generic loads which require up to 2.5 A of nominal current (the typical current limitation is 4.5 - 5 A).

Thanks to the very low  $R_{DSon}$  (only 60 m $\Omega$  Typ. @ 25 °C) the device allows very low power consumption during the operation and for this reason it represent an ideal solution for IP65 / IP67 requirements. The device is compliant with IEC 61131-2 (programmable controllers international standard).

# 1 Circuit schematic

Figure 1. Schematic diagram



AM02250v1

## 2 Revision history

Table 1. Document revision history

Date	Revision	Changes
16-Jul-2009	1	Initial release.

**Please Read Carefully:**

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

**UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.**

**UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZED ST REPRESENTATIVE, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.**

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2009 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

[www.st.com](http://www.st.com)