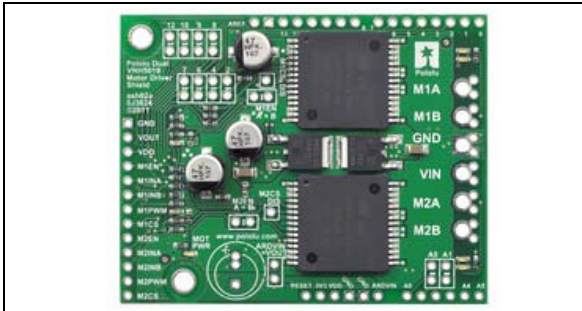


Dual VN5019 Motor Driver Shield Arduino-Compatible

Data brief



- Can survive input voltages up to 41 V
- Undervoltage and overvoltage shutdown
- High-side and low-side thermal shutdown
- Short-to-ground and short-to-Vcc protection

Description

This motor driver shield makes it easy to control two bidirectional, high-power, brushed DC motors with an Arduino-Compatible, SPC56P-Discovery and STM32 Nucleo boards. The board features a pair of robust VN5019A motor drivers, which operate from 5.5 to 24 V and can deliver a continuous 12 A (30 A peak) per channel, and incorporate most of the components of the typical application, like pull-up's and protection resistors and FETs for reverse battery protection. This versatile motor driver is intended for a wide range of users, from beginners who just want a plug-and-play motor control solution for their Arduinos and Nucleo to experts who want to directly interface with ST's great motor driver ICs. The Arduino pin mappings can all be customized if the defaults are not convenient and the VN5019A control lines are broken out along the left side of the board for general-purpose use without an Arduino. This versatility, along with an option to power the Arduino directly from the shield, set this board apart from similar competing motor shields and it is as well a perfect tool to evaluate VN5019A performance.

For more information please visit Pololu web site.

Features

- Wide operating voltage range: 5.5 - 24 V
- High output current: up to 12 A continuous (30 maximum) per motor
- Motor outputs can be combined to deliver up to 24 A continuous (60 A maximum) to a single motor
- Inputs compatible with both 5 V and 3.3 V systems (logic high threshold is 2.1 V)
- PWM operation up to 20 kHz for quieter motor operation
- Current sense voltage output proportional to motor current
- Motor indicator LEDs show what the outputs are doing even when no motor is connected
- Can be used with Arduino compatible boards, SPC56P-Discovery, STM32 Nucleo or other microcontroller boards
- When used as a shield, the motor power supply can optionally be used to power the Arduino base as well
- Arduino pin mappings can be customized if the default mappings are not convenient
- Arduino library or SPC5Studio makes it easy to get started using this board as a motor driver shield
- Reverse-voltage protection
- Robust drivers:

Table 1. Device summary

| Order code | Reference |
|-----------------|-------------------------------------|
| EVAL-VNH5019-P2 | EVAL-VNH5019-P2 Evaluation board |

1 Revision history

Table 2. Documen revision history

| Date | Revision | Changes |
|-------------|----------|--|
| 06-Dec-2013 | 1 | Initial release. |
| 05-Jun-2014 | 2 | Updated Features and Description. Add Table 1 . |

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.

ST PRODUCTS ARE NOT DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE ST PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER’S SOLE RISK, EVEN IF ST HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY ST AS BEING INTENDED FOR “AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL” INDUSTRY DOMAINS ACCORDING TO ST PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.

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.

© 2014 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

