

## Automotive fully integrated H-bridge motor driver

Data brief



### Description

The VNH5200AS-E is a full bridge motor driver intended for a wide range of automotive applications. The device incorporates a dual monolithic high-side driver and two low-side switches.

Both switches are designed using STMicroelectronics' well known and proven proprietary VIPower<sup>®</sup> M0 technology that allows to efficiently integrate on the same die a true Power MOSFET with an intelligent signal/protection circuitry. The three dies are assembled in SO-16N package on electrically isolated leadframes.

Moreover, its fully symmetrical mechanical design allows superior manufacturability at board level. The input signals  $IN_A$  and  $IN_B$  can directly interface to the microcontroller to select the motor direction and the brake condition. The  $DIAG_A/EN_A$  or  $DIAG_B/EN_B$ , when connected to an external pull-up resistor, enables one leg of the bridge. Each  $DIAG_A/EN_A$  provides a feedback digital diagnostic signal as well. The normal operating condition is explained in the truth table. The CS pin allows to monitor the motor current by delivering a current proportional to its value.

### Features

Type	$R_{DS(on)}$	$I_{out}$	$V_{CCmax}$
VNH5200AS-E	200 m $\Omega$ typ (per leg)	8 A	41 V

- Output current: 8 A
- 3 V CMOS-compatible inputs
- Undervoltage shutdown
- Overvoltage clamp
- Thermal shutdown
- Cross-conduction protection
- Current and power limitation
- Very low standby power consumption
- Protection against loss of ground and loss of  $V_{CC}$
- Current sense output proportional to motor current
- Output protected against short to ground and short to  $V_{CC}$
- Package: ECOPACK<sup>®</sup>

Table 1. Device summary

Package	Order codes	
	Tube	Tape and reel
SO-16N	VNH5200AS-E	VNH5200ASTR-E

# 1 Revision history

**Table 2. Document revision history**

<b>Date</b>	<b>Revision</b>	<b>Changes</b>
14-June-2013	1	Initial release.
16-Sep-2013	2	Updated disclaimer.

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