



VND5E008AY-E

Double channel high-side driver with analog current sense for automotive applications

Data brief

Features

Max transient supply voltage	V_{CC}	41V
Operating voltage range	V_{CC}	4.5 to 28V
Typ On-State resistance (per ch.)	R_{ON}	8 m Ω
Current limitation (typ)	I_{LIMH}	85 A
Off-state supply current	I_S	2 μ A ⁽¹⁾

1. Typical value with all loads connected

- General
 - Inrush current active management by power limitation
 - Very low standby current
 - 3.0 V CMOS compatible input
 - Optimized electromagnetic emission
 - Very low electromagnetic susceptibility
 - Compliance with European directive 2002/95/EC
 - Proportional load current sense
 - High current sense precision for wide range current
 - Very low current sense leakage
- Diagnostic functions
 - Off-state open-load detection
 - Current sense disable
 - Thermal shutdown indication
 - Output short to V_{CC} detection
 - Overload and short to ground (power limitation) indication
- Protection
 - Undervoltage shutdown
 - Overvoltage clamp
 - Load current limitation
 - Self limiting of fast thermal transients
 - Protection against loss of ground and loss of V_{CC}
 - Thermal shutdown
 - Reverse battery protection with self switch of the Power MOS



- Electrostatic discharge protection

Applications

- All types of resistive, inductive and capacitive loads

Description

The VND5E008AY-E is a device made using STMicroelectronics™ VIPower™ MO-5 technology. It is intended for driving resistive or inductive loads with one side connected to ground. Active V_{CC} pin voltage clamp protects the device against low energy spikes (see ISO7637 transient compatibility table).

This device integrates an analog current sense which delivers a current proportional to the load current when CS_DIS high leads the current sense pin in high impedance.

Fault conditions such as overload, overtemperature or open-load are reported via the current sense pin

Output current limitation protects the device in overload condition. In case of long overload duration, the device limits the dissipated power to safe level up to thermal shutdown intervention. Thermal shutdown with automatic restart allows the device to recover normal operation as soon as fault condition disappears.

Table 1. Device summary

Package	Order codes	
	Tube	Tape and reel
PowerSSO-36	VND5E008AY-E	VND5E008AYTR-E

1 Revision history

Table 2. Document revision history

Date	Revision	Changes
07-Mar-2011	1	Initial release
18-Sep-2013	2	Updated Disclaimer

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