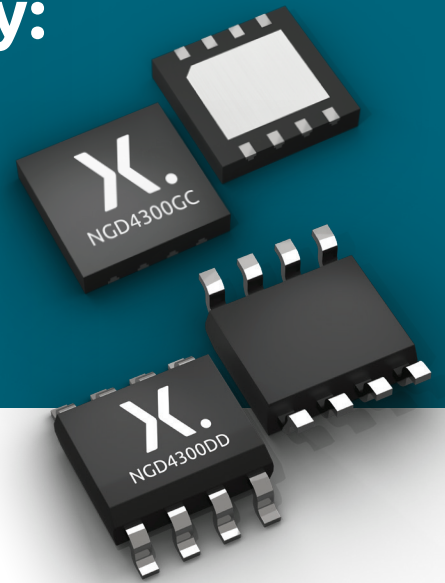


Driving Power with Efficiency: The NGD4300 Half-bridge Gate Driver



Power Management Gate Driver ICs

In the world of power conversion and motor control, the most basic idea is to turn ON and OFF of power devices under certain sequence in certain topology, where gate drivers are there to driving those ON/OFFs. According to different application and topology there are normally 3 kind of gate drivers, half bridge gate drivers, low side drivers and isolated drivers, in which the half gate drivers are used when you want to drive the power devices connected in bridge or cascade connection.

The NGD4300 half bridge gate driver with high driving capability and excellent dynamic performance has been designed to improve the efficiency and robustness of any power conversion system such as telecom/server DC to DC power supply, micro inverter system, automotive DC to DC conversion, and motor driving application like automotive EPS, robotics, etc.

Features and Benefits

- › TTL and CMOS compatible inputs
- › VDD supply range from 8V to 17 V (-0.3 to 20 V absolute max)
- › Integrated Boot strap diode
- › -5V to 115V absolute maximum range for VHS
- › UVLO protection on both HS & LS drivers
- › High driving capability of $I_{pk} +4/-5$ A at 12 V supply
- › Typical 13 ns propagation delay
- › Typical 4ns rising edge and 3.5ns falling edge @ $V_{DD}=12V$ and $C_{out}=1nF$
- › Typical 1ns Delay matching from HS to LS driver

Applications

- › Power Supplies for Telecom, Datacom
- › Half- and Full-Bridge Power Converters
- › Motor driver (stepper motors, HVAC, fans, power tools, robotics, drones)
- › Automotive applications (EPS, DCDC converter)



nexperia

EFFICIENCY WINS.

Nexperia Half Bridge Gate Driver

Half bridge gate drivers are semiconductor device designed to driver power device like MOSFETs that are configured in bridge connection, as in most DC to DC conversion and motor driving applications. With integrated bootstrap circuit and components, the NGD4300 simplifies system design by removing dedicate high side driving circuit.

High performance on robustness and efficiency

To achieve high robustness in power conversion and motor driving applications, NGD4300 used SOI process to extend negative voltage tolerance of HS pin to -5VDC, this significantly reduces the risk to damage the IC caused by system parasitic component and unexpected spikes across all working conditions. NGD4300 also has 4ns and 3ns typical rise and fall time to contribute to high driving efficiency, and 13ns typical delay and 1ns delay matching to support high frequency and fast system control.

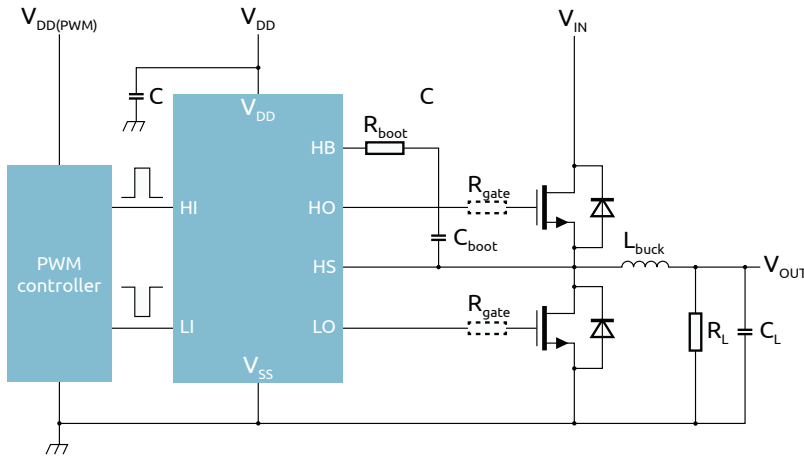


Fig 1. Typical half bridge circuit in Buck configuration

Ordering Information

Products	Description	Status	Quick access
NGD4300DD-Q100	4 A peak high-performance dual MOSFET gate driver	Production	Samples Buy online
NGD4300DD	4 A peak high-performance dual MOSFET gate driver	Production	Samples Buy online
NGD4300GC	4 A peak high-performance dual MOSFET gate driver	Production	Samples Buy online
NGD4300D	4 A peak high-performance dual MOSFET gate driver	Production	Samples Buy online

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