



## New Product Announcement

### DGD2003/2005 & DGD2012

## Half-Bridge Gate Driver ICs

The DGD2003/2005 and DGD2012 are 200V gate driver ICs designed for driving two external N-channel MOSFETs in a half-bridge configuration.

Featuring both high-side and low-side output drive capability, with simple logic level input, enables an easy interface between the MCU and the power MOSFET switches. Supporting up to 200V via a floating high-side suits a wide range of motor driving in battery-operated applications.

These gate drivers encompass self-protection features such as dead-time and matched delays to evade shoot-through issues, Schmitt triggered inputs to avoid false triggering, gate drive tolerance to negative transients caused during high  $dV/dt$  switching, and undervoltage lockout (UVLO) protection on the  $V_{CC}$  and  $V_{BS}$  supply to avoid malfunction under low supply voltage.



### The Diodes Advantage

The DGG2003, DGD2005 and DGD2012 are 200V gate drivers capable of driving N-channel MOSFETs in half-bridge configuration.

- **Source & Sink Currents (0.29A, 0.6A DGD2003/5; 1.9A, 2.3A DGD2012)**  
Increasing system efficiencies by minimizing switching time of power MOSFETs
- **Logic Level Input > 2.5V**  
PWM control directly from 3.3V MCU while the output steps up to the  $V_{CC}$  supply (8 to 14V) to ensure the MOSFET is fully enhanced to reduce losses
- **Shoot-Through Prevention Logic**  
To protect the MOSFET from shoot-through, these gate drivers have matched delays.
- **SO-8 Footprint**  
Standard package and pinout for ease of use

### Applications

#### Motor Drive

Brushless DC (BLDC) motor driving up to 200V, especially in battery operated applications:

- Cordless power tools, garden tools and domestic appliances.
- Light Electric Vehicles (LEVs)
- Robotics
- Drones

#### Power Conversion

- Inverter Drives

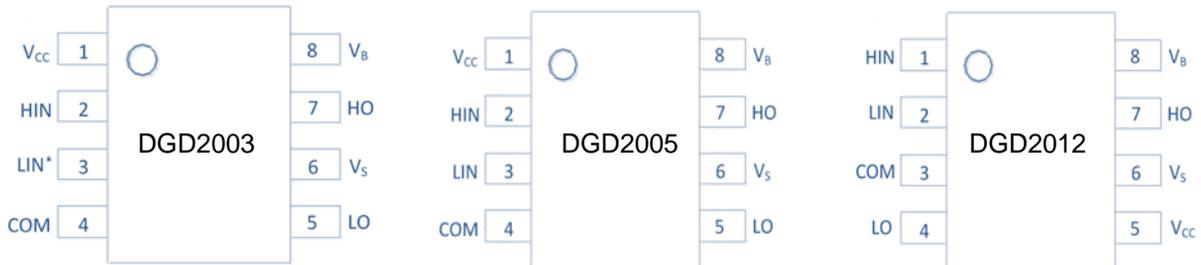


### Product Information

Orderable Part Number	Integrated Boot Strap Diode	V <sub>CC</sub> Min / Max (V)	Offset Voltage Max (V)	Inputs	Output Current I <sub>o+</sub> Typ (A)	Output Current I <sub>o-</sub> Typ (A)	Internal Deadtime Typ (ns)	t <sub>ON</sub> / t <sub>OFF</sub> Typ (ns)	t <sub>R</sub> / t <sub>F</sub> Typ (ns)	Package
<b>Half-Bridge Gate Drivers</b>										
DGD2003S8-13	N	10 / 20	200	HIN, LIN*	0.29	0.6	420	680 / 150	70 / 35	SO-8
<b>High-Side / Low-Side Gate Drivers</b>										
DGD2005S8-13	N	10 / 20	200	HIN, LIN	0.29	0.6	-	220 / 200	100 / 35	SO-8
DGD2012S8-13	N	10 / 20	200	HIN, LIN	1.9	2.3	-	180 / 220	40 / 20	SO-8

\* = Out of phase

### Pin Assignments



### Typical Configuration

