



High-Voltage / High-Speed Gate Drivers

DGD21xxx gate drivers provide a simple means of switching power MOSFETs and IGBTs in half-bridge and full-bridge configurations.

Featuring both high-side and low-side output drive capability, with simple logic level input, enables an easy interface between the controller and the power MOSFET / IGBT switches. Supporting up to 600V via a floating high-side driver allows operation on high-voltage rails commonly used in power supplies, motor drive and DC-AC inverters.

Encompassing self-protection features: such as fixed dead-time delay 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} supply to avoid malfunction under low supply voltage.



The Diodes Advantage

The DGD21xx series are high-voltage / high-speed gate drivers capable of driving N-channel MOSFETs and IGBTs in half bridge or full bridges.

- **Fast Switching**
Enabling more efficient switching under high-frequency operation
- **Low Quiescent Current**
Improved standby efficiency with a low quiescent current consumption
- **Logic Level Input**
Can be driven directly from μC or other IC with 3.3V logic level
- **Dead-Time and Matched Delays**
To protect the MOSFET / IGBT from shoot through, these gate drivers have a pre-set internal dead time and matched delays

Applications

Motor Drive

>100W AC and DC Motors inc. BLDC, PMSM, Induction motors:

- White Goods: Washing Machines, Refrigerators, Air Conditioners
- Industrial Automation
- Drones, RC cars and planes
- Battery operated vehicles

Power Supplies

Offline AC and DC SMPS with half bridge and full bridge topologies:

- Server, Telecom PSU
- LED and LCD TV

DC-AC Inverters

- Solar, Wind and Fuel Cells



Half-Bridge Gate Drivers

Part Number	Offset Voltage Max(V)	Inputs	Output Current lo+ typ (mA)	Output Current lo- typ (mA)	Internal Deadtime typ (ns)	t _{on} /t _{off} typ (ns)	t _r /t _f typ (ns)	Package
DGD2103S8	600	HIN, LIN*	290	600	520	680 / 150	70 / 35	SO8
DGD2103AS8	600	HIN, LIN*	210	360	520	680 / 150	100 / 50	SO8
DGD2104S8	600	IN, SD^	290	600	520	680 / 150	70 / 35	SO8
DGD2104AS8	600	IN, SD^	210	360	520	680 / 150	100 / 50	SO8
DGD2108S8	600	HIN, LIN*	290	600	520	220 / 200	100 / 35	SO8
DGD2184S8	600	IN, SD^	1,900	2,300	400	680 / 270	40 / 20	SO8

* = Out of phase and ^ = Enable low

High-Side / Low-Side Gate Drivers

Part Number	Offset Voltage Max(V)	Inputs	Output Current lo+ typ (mA)	Output Current lo- typ (mA)	t _{on} /t _{off} typ (ns)	t _r /t _f typ (ns)	Package
DGD2110S16	500	HIN, LIN, SD	2,500	2,500	105 / 94	25 / 17	SO16
DGD2101S8	600	HIN, LIN	290	600	160 / 150	70 / 35	SO8
DGD2106S8	600	HIN, LIN	290	600	220 / 200	100 / 35	SO8
DGD2181S8	600	HIN, LIN	1,900	2,300	180 / 220	40 / 20	SO8
DGD2113S16	600	HIN, LIN, SD	2,500	2,500	105 / 94	25 / 17	SO16
DGD2190S8	600	HIN, LIN	4,500	4,500	140 / 140	25 / 20	SO8

Cross Reference

Manufacturer's Part Number	Diodes Exact Equivalent	Diodes Near Equivalent	Manufacturer's Part Number	Diodes Exact Equivalent	Diodes Near Equivalent
FAN7390MX	DGD2190S8-13		IR2184STRPBF		DGD2184S8-13
FAN7392MX		DGD2113S16-13	IRS2101STRPBF	DGD2101S8-13	
FAN7842MX		DGD2101S8-13	IRS2103STRPBF	DGD2103S8-13	DGD2103AS8-13
IR2101STRPBF		DGD2101S8-13	IRS2104STRPBF	DGD2104S8-13	DGD2104AS8-13
IR2103STRPBF	DGD2103AS8-13	DGD2103S8-13	IRS2106STRPBF	DGD2106S8-13	
IR2104STRPBF	DGD2104AS8-13	DGD2104S8-13	IRS2108STRPBF	DGD2108S8-13	
IR2106STRPBF		DGD2106S8-13	IRS2110STRPBF	DGD2110S16-13	
IR2108STRPBF		DGD2108S8-13	IRS2113STRPBF	DGD2113S16-13	
IR2110STRPBF		DGD2110S16-13	IRS2181STRPBF	DGD2181S8-13	
IR2113STRPBF		DGD2113S16-13	IRS2184STRPBF	DGD2184S8-13	
IR2181STRPBF		DGD2181S8-13			