



GATE DRIVERS



- **SINGLE / DUAL CHANNEL GATE DRIVERS**

Low-side and high-side Gate Drivers with inverting and non-inverting options

- **HALF-BRIDGE GATE DRIVERS**

High-side / low-side and half-bridge Gate Drivers rated from 50 to 600V

- **3-PHASE GATE DRIVERS**

Three half-bridge drivers integrated to provide a single package solution

SINGLE / DUAL CHANNEL GATE DRIVERS

This family of high-speed Gate drivers is configured in single and dual formats for efficient and reliable driving of MOSFETs or IGBTs.

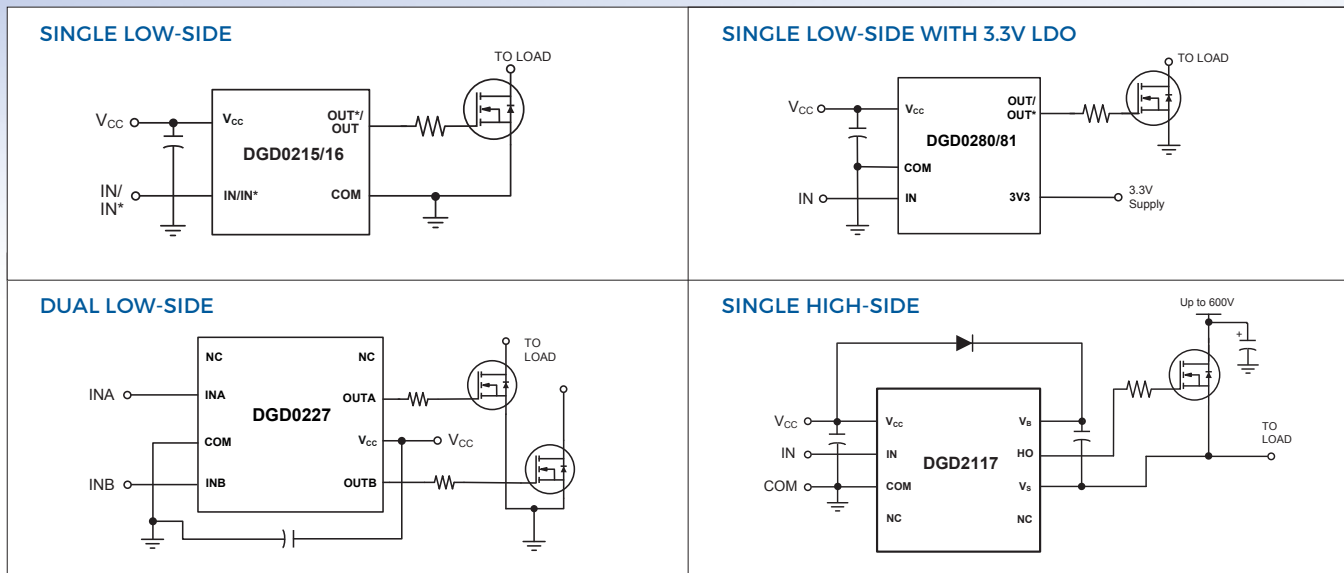
The low side drivers are offered in both single and dual channels whereas the high-side devices are single channel parts.

Inverting and non inverting input configurations are available.

Orderable Part Number	V _{CC} Min / Max	Offset Voltage Max	Inputs	Output Current I _{o+} Typ	Output Current I _{o-} Typ	t _{on} / t _{off} Typ	t _r / t _f Typ	Package
	(V)	(V)		(A)	(A)	(ns)	(ns)	
SINGLE CHANNEL LOW-SIDE GATE DRIVERS								
DGD0215WT-7	4.5 / 18	-	IN, IN*	1.9	1.8	35 / 35	15 / 15	TSOT25
DGD0216WT-7	4.5 / 18	-	IN, IN*	1.9	1.8	35 / 35	15 / 15	TSOT25
SINGLE CHANNEL LOW-SIDE GATE DRIVERS WITH INTEGRATED 3.3V LDO								
DGD0280WT-7 +	4.5 / 18	-	IN	2.5	2.8	35 / 30	20 / 15	TSOT25
DGD0281WT-7 +	4.5 / 18	-	IN*	2.5	2.8	35 / 30	20 / 15	TSOT25
DUAL CHANNEL LOW-SIDE GATE DRIVERS								
DGD02271S8-13 +	4.5 / 18	-	INA, INB	1.5	1.5	40 / 35	20 / 20	SO8
DGD02273S8-13 +	4.5 / 18	-	INA, INB	2.3	3.3	40 / 35	20 / 20	SO8
DGD02272S8-13 +	4.5 / 18	-	INA, INB	2.5	2.5	40 / 35	20 / 20	SO8
DGD02275S8-13 +	4.5 / 18	-	INA, INB	2.5	5	40 / 35	20 / 20	SO8
DGD0227S8-13	4.5 / 18	-	INA, INB	4	4	40 / 35	20 / 20	SO8
SINGLE CHANNEL HIGH-SIDE GATE DRIVERS								
DGD2117S8-13	10 / 20	600	IN	0.29	0.6	125 / 105	75 / 35	SO8
DGD2118S8-13	10 / 20	600	IN*	0.29	0.6	125 / 105	75 / 35	SO8

* = out of phase with output + = Engineering samples. Release in Q2

TYPICAL CONFIGURATIONS



TYPICAL APPLICATIONS

- Switch Mode Power Supplies
- Line Drivers
- Level Translators
- Motor and Solenoid Drive

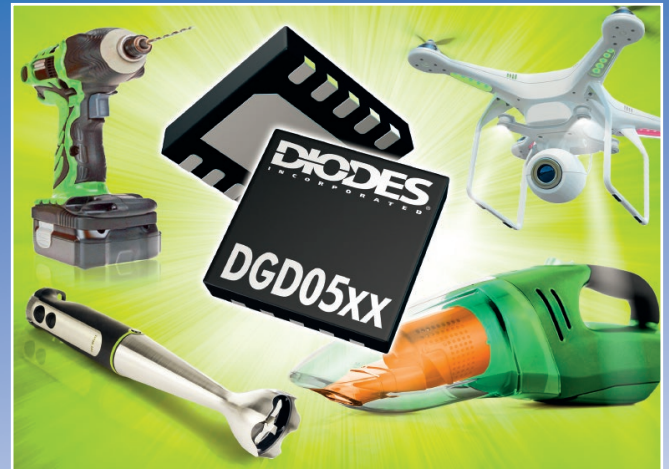


LOW VOLTAGE HALF-BRIDGE GATE DRIVERS

The ability to drive two N-Channel MOSFETs in a half-bridge configuration with high-side drive ratings up to 100V. The integrated Bootstrap diodes on the 50V devices allow a reduction to the BOM contributing to reduced solution cost.

THE DIODES ADVANTAGE

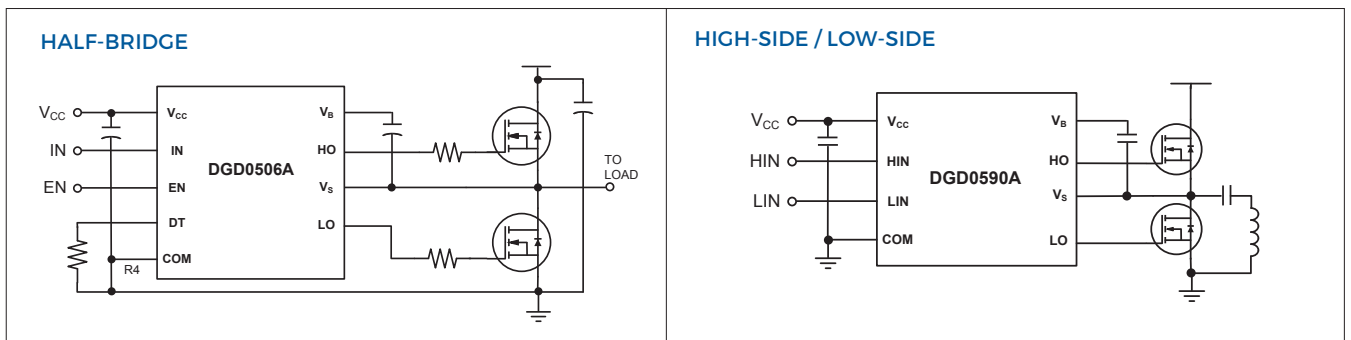
- Source and sink currents up to 2.5A
- Integrated bootstrap diode
- 3.3v logic input control
- Fast switching
- 3 x 3 mm footprint



Orderable Part Number	Integrated Bootstrap Diode	V _{CC} Min / Max	Offset Voltage Max (V)	Inputs	Output Current I _{o+} Typ	Output Current I _{o-} Typ	Internal Deadtime Typ (ns)	ton / toff Typ (ns)	tr / tf Typ (ns)	Package	
		(V)			(A)	(A)		(ns)	(ns)		
HALF-BRIDGE GATE DRIVERS											
DGD05463FN-7	Y	4.9 / 14	50	IN, DT, EN	1.5	2.5	70 - 430 #	96 / 22	17 / 12	DFN3030-10	
DGD0506AFN-7	Y	8 / 14	50	IN, DT, EN	1.5	2	70 - 430 #	96 / 22	17 / 12	DFN3030-10	
DGD0506AM10-7	Y	8 / 14	50	IN, DT, EN	1.5	2	70 - 430 #	96 / 22	17 / 12	MSOPI0	
DGD05062FN-7	N	8 / 14	50	IN, DT, EN	1.25	2	70 - 430 #	96 / 22	17 / 12	DFN3030-10	
DGD0503FN-7	N	10 / 20	100	HIN, LIN*	0.29	0.6	430	680 / 150	70 / 35	DFN3030-10	
DGD0504FN-7	N	10 / 20	100	IN, SD^	0.29	0.6	430	680 / 150	70 / 35	DFN3030-10	
HIGH-SIDE / LOW-SIDE GATE DRIVERS											
DGD0590AFU-7	Y	4.5 / 5.5	40	HIN, LIN	1.0	1.0 / 3.0	-	16/17, 12/17	27 / 17	QFN3030-8	
DGD05473FN-7	Y	4.9 / 14	50	HIN, LIN, EN	1.5	2.5	-	20 / 23	16 / 12	DFN3030-10	
DGD05473FNQ-7†	Y	4.9 / 14	50	HIN, LIN, EN	1.5	2.5	-	20 / 23	16 / 12	DFN3030-10	
DGD0507AFN-7	Y	8 / 14	50	HIN, LIN, EN	1.5	2.0	-	20 / 23	16 / 18	DFN3030-10	

* = out of phase with output ^ = enable low # = Adjustable by external resistor † = Automotive Qualified

TYPICAL CONFIGURATIONS



TYPICAL APPLICATIONS

- 12V, 24V, 36V and 48V BLDC Motors
 - Power Tools
 - Unmanned Aerial Vehicles (UAV)
 - Robotics
- Wireless Charging



QFN3030-8

DFN3030-10

MSOPI0

HIGH VOLTAGE HALF-BRIDGE GATE DRIVERS

Covering 200V to 600V for high-side drive, these Gate Drivers are designed for driving high-voltage N-Channel MOSFETs or IGBTs in half-bridge configuration. A variety of inputs are available giving options for synchronous / independent control with inverting or non-inverting outputs.

THE DIODES ADVANTAGE

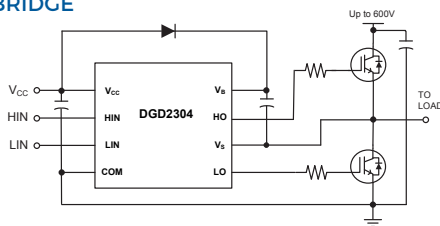
- Up to 4.5A source and sink current
- Operational up to an offset voltage of 600V
- Dead-time and cross-conduction prevention logic
- Variety of input options for synchronous or independent operation
- Tolerant to negative voltage transients



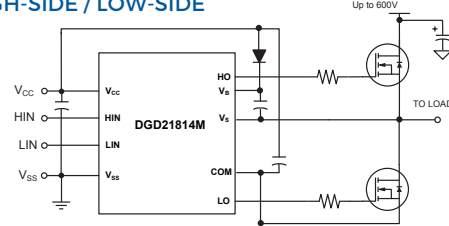
Orderable Part Number	Integrated Bootstrap Diode	V _{CC} Min / Max (V)	Offset Voltage Max (V)	Inputs	Output Current I _{o+} Typ (A)	Output Current I _{o-} Typ (A)	Internal Deadtime Typ (ns)	t _{on} / t _{off} Typ (ns)	t _r / t _f Typ (ns)	Package
HALF-BRIDGE GATE DRIVERS										
DGD2003S8-13	N	10 / 20	200	HIN, LIN*	0.29	0.6	420	680 / 150	70 / 35	SO8
DGD1504S8-13	N	10 / 20	250	IN, SD [^]	0.29	0.6	430	680 / 150	70 / 35	SO8
DGD2103MS8-13	N	10 / 20	600	HIN, LIN*	0.29	0.6	420	680 / 150	70 / 35	SO8
DGD2104MS8-13	N	10 / 20	600	IN, SD [^]	0.29	0.6	420	680 / 150	70 / 35	SO8
DGD2304S8-13	N	10 / 20	600	HIN, LIN	0.29	0.6	100	95 / 100	70 / 35	SO8
DGD2108S8-13	N	10 / 20	600	HIN, LIN*	0.29	0.6	540	220 / 200	100 / 35	SO8
DGD21084S14-13	N	10 / 20	600	HIN, LIN*	0.2	0.6	540 - 5000 #	220 / 200	100 / 35	SO14
DGD2184MS8-13	N	10 / 20	600	IN, SD [^]	1.9	2.3	395	680 / 270	40 / 20	SO8
DGD21844MS14-13	N	10 / 20	600	IN, SD [^]	1.9	2.3	400 - 5000 #	680 / 270	40 / 20	SO14
HIGH-SIDE / LOW-SIDE GATE DRIVERS										
DGD2005S8-13	N	10 / 20	200	HIN, LIN	0.29	0.6	-	220 / 200	100 / 35	SO8
DGD2012S8-13	N	10 / 20	200	HIN, LIN	1.9	2.3	-	180 / 220	40 / 20	SO8
DGD2110S16-13	N	10 / 20	500	HIN, LIN, SD	2.5	2.5	-	105 / 94	15 / 13	SO16(WB)
DGD2113S16-13	N	10 / 20	600	HIN, LIN, SD	2.5	2.5	-	105 / 94	15 / 13	SO16(WB)
DGD2101MS8-13	N	10 / 20	600	HIN, LIN	0.29	0.6	-	160 / 150	70 / 35	SO8
DGD2106MS8-13	N	10 / 20	600	HIN, LIN	0.29	0.6	-	220 / 200	100 / 35	SO8
DGD21064MS14-13	N	10 / 20	600	HIN, LIN	0.29	0.6	-	220 / 200	100 / 35	SO14
DGD2181MS8-13	N	10 / 20	600	HIN, LIN	1.9	2.3	-	180 / 220	40 / 20	SO8
DGD21814MS14-13	N	10 / 20	600	HIN, LIN	1.9	2.3	-	180 / 220	40 / 20	SO14
DGD2190MS8-13	N	10 / 20	600	HIN, LIN	4.5	4.5	-	140 / 140	25 / 20	SO8
DGD21904MS14-13	N	10 / 20	600	HIN, LIN	4.5	4.5	-	140 / 140	25 / 20	SO14

* = out of phase with output ^ = enable low # = Adjustable by external resistor

HALF-BRIDGE

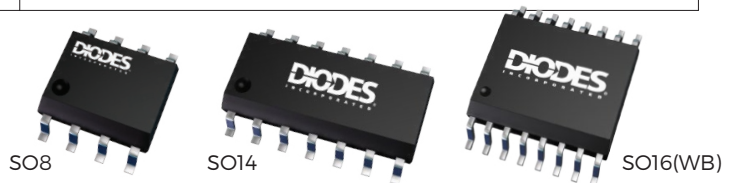


HIGH-SIDE / LOW-SIDE



TYPICAL APPLICATIONS

- Home Appliances
- Refrigerator Compressors
- Industrial Motor Control
- Telecom Power
- Inverters



3-PHASE GATE DRIVERS

Highly integrated 3-phase Gate Drivers designed to drive 6 x N-Channel MOSFETs or IGBTs in half-bridge configuration. Cross conduction prevention logic, overcurrent protection and undervoltage lockout functions are incorporated into the devices to ensure reliable operations.

THE DIODES ADVANTAGE

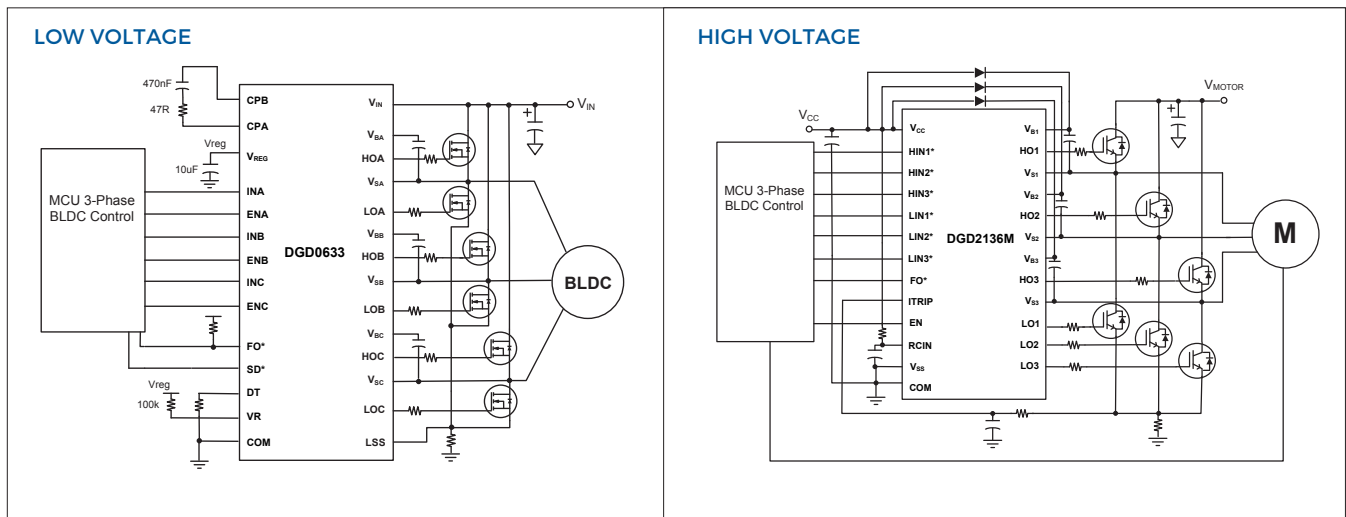
- 3 floating high-side drivers in bootstrap operation
- Overcurrent Protection
- Integrated Bootstrap Diodes (DGD0633)
- 3.3V logic input compatible



Orderable Part Number	Integrated Bootstrap Diode	V _{CC} Min / Max	Offset Voltage Max	Inputs	Output Current I _{o+} Typ	Output Current I _{o-} Typ	Internal Deadtime Typ	t _{on} / t _{off} Typ	t _r / t _f Typ	Package
		(V)	(V)		(A)	(A)	(ns)	(ns)	(ns)	
LOW VOLTAGE 3-PHASE DRIVERS										
DGD0633FIC-13 +	Y	5 / 35	50	IN ^{A,B,C} , EN ^{A,B,C} , SD [*] , DT, FO [*] , OCREF	0.8	1.0	30 - 6000 #	70 / 25	50 / 40	QFN4040-28
DGD0636MS28-13	N	10 / 20	100	HIN ^{1,2,3} , LIN ^{1,2,3} , EN, ITRIP	0.2	0.35	290	330 / 330	90 / 35	SO28 (WB)
HIGH VOLTAGE 3-PHASE DRIVERS										
DGD2136MS28-13	N	10 / 20	600	HIN ^{1,2,3} , LIN ^{1,2,3} , EN, ITRIP	0.2	0.35	290	330 / 330	90 / 35	SO28 (WB)
DGD23892S28-13	N	10 / 15	600	HIN ^{1,2,3} , LIN ^{1,2,3} , EN, FO [*] , RCIN	0.35	0.65	290	270 / 270	40 / 25	SO28 (WB)

* = out of phase with output # = Adjustable by external resistor + = Engineering samples. Release in Q2

TYPICAL CONFIGURATIONS



TYPICAL LV APPLICATIONS

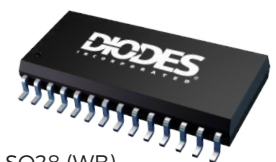
- 12 and 24V BLDC Motors
- Power Tools
- Unmanned Aerial Vehicles (UAV)
- Light Electric Vehicles (LEV)
- Robotics

TYPICAL HV APPLICATIONS

- Home Appliances
- Refrigerator Compressors
- Industrial Motor Control
- Telecom Power
- Inverters



QFN4040-28



SO28 (WB)



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