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Every switch needs a driver

Gate driver application matrix

www.infineon.com/gatedriver





Home Appliances

Discover the next level of power and efficiency

Infinion’s gate driver ICs utilize level-shift silicon-on-insulator technology (SOI), and level-shift junction isolation technology (JI) to meet the high performance requirements in home appliance applications.

Recommended Gate Drivers		Aircon	Charger	Lighting	Power tools	Fans	Fridge	Vacuum cleaner	Washing machine	Laundry dryer	Dishwasher
Home Appliances	General	Air Conditioner (Residential)	Commercial Lighting	Electric Tools (Battery)	Hood Fan/ Ceiling Fan/ Freezer Fan	Power Tools (AC)	Refrigerator/ Washer/ Dryer	Vacuum Cleaner			
PFC	<ul style="list-style-type: none"> ● IRS4427S ● IRS44273L ● 2EDN8524F 	<ul style="list-style-type: none"> ● IRS44273L ● 2EDN8524F ● 1EDN8511B 							<ul style="list-style-type: none"> ● IRS4427S ● IRS44273L ● 2EDN8524F 		
SMPS	ICESQR4770AZ (CoolSET™)	<ul style="list-style-type: none"> ● 2EDN8524F ● IRS4427S ● IRS2153(1)D 									
DC-DC	<ul style="list-style-type: none"> ● 1EDI20N12AF 										
Inverter (<1 kW)		<ul style="list-style-type: none"> ● 6EDL04I06PT ● IR2136S ● IRS2890DS ● 2ED2304S06F 		<ul style="list-style-type: none"> ● 6EDL04N02PR ● IRS2007S ● IRS2301S 	<ul style="list-style-type: none"> ● 6EDL04I06PT ● IR2136S ● 2ED2304S06F 	<ul style="list-style-type: none"> ● 6EDL04I06PT ● IR2136S ● 2EDL05I06PF 	<ul style="list-style-type: none"> ● 6EDL04I06PT ● IRS2890DS ● 2ED2304S06F 				
Inverter (<3 kW)						<ul style="list-style-type: none"> ● IR2235 ● 2EDL23I06PJ ● IR2214SS 					
SR Motor Inverter										<ul style="list-style-type: none"> ● 2EDL05I06PF ● IRS2181(4) ● IRS2890DS 	
Half-bridge Topology			<ul style="list-style-type: none"> ● 2EDL05N06PF ● 2ED2304S06F ● IRS2153(1)D 								
HS-Buck			<ul style="list-style-type: none"> ● IRS2117 ● IRS25752L ● IRS20752L 								
Sync-Buck			<ul style="list-style-type: none"> ● 2EDL05N06PF ● 2ED2304S06F 								








All statements are without any engagement. Subject to modifications and amendments. | P-316-E-06-2018-v1



Industrial

Reliable, high quality solutions for the most rugged situations

Infinion's gate driver ICs are the expert's choice. With the breadth and depth of the portfolio, customers can quickly design and build efficient and robust systems for every industrial application.

Recommended Gate Drivers							
	 Aircon	 Automatic opening system	 Fans	 Sewing machine	 Drives	 Forklift Truck/ CAV	 UPS
Industrial	Air Conditioner (Commercial)	Automatic Door Opening Systems	Building Fans & Pumps	Commercial Sewing Machine	Drives	Forklift Truck/ CAV	UPS
Compressor/ Fan/CAC	<ul style="list-style-type: none"> 1ED020112-F2 1EDI10112MF 2ED020112-F2 						
Inverter (<5 kW)		<ul style="list-style-type: none"> 6EDL04I06PT IR2136S IRS2103 	<ul style="list-style-type: none"> 6EDL04(I,N)06PT 2EDL23I06PJ IR2214SS 	<ul style="list-style-type: none"> 6EDL04I06PT IR2136S IRS2334 	<ul style="list-style-type: none"> 6EDL04I06PT IR2133 2EDL23I06PJ 		<ul style="list-style-type: none"> 1EDI60I12AF 2EDL23I06PJ IR7106S
Inverter (<30 kW)			<ul style="list-style-type: none"> 1EDI30I12MF 1EDI60I12AF 1EDU20I12SV 		<ul style="list-style-type: none"> 1EDI40I12AF 1ED020I12-BT 2ED020I12-FI 	<ul style="list-style-type: none"> 1EDI60N12AF 2EDL23I06PJ IRS2127(1) 	
Inverter (<200 kW)					<ul style="list-style-type: none"> 1EDI60I12AF 1ED020I12-B2 1EDU20I12SV 	<ul style="list-style-type: none"> 1EDU20I12SV 1ED020I12-B2 1EDI60I12AF 	<ul style="list-style-type: none"> 1EDI60I12AF 1ED020I12-F2 1EDU20I12SV
PFC			<ul style="list-style-type: none"> IRS4427S IRS44273L 2EDN8524F 				<ul style="list-style-type: none"> IRS4427S IRS44273L 2EDN8524F
DC-DC (1 kW - 100 kW)							<ul style="list-style-type: none"> 2EDL05N06PJ 2EDL23N06PJ 1EDI20N12AF 1EDI60N12AF
SMPS					<ul style="list-style-type: none"> 2EDN8524F IR7106S IRS2186(4) 		<ul style="list-style-type: none"> IRS4427S IRS44273L 2EDN7524F
Brake Chopper					<ul style="list-style-type: none"> 1EDI05I12AF 1EDI10I12MF IRS44273L 		
Active Bridge Rectifier							<ul style="list-style-type: none"> 2ED020I12-F2 1ED020I12-F2 1ED020I12-FT











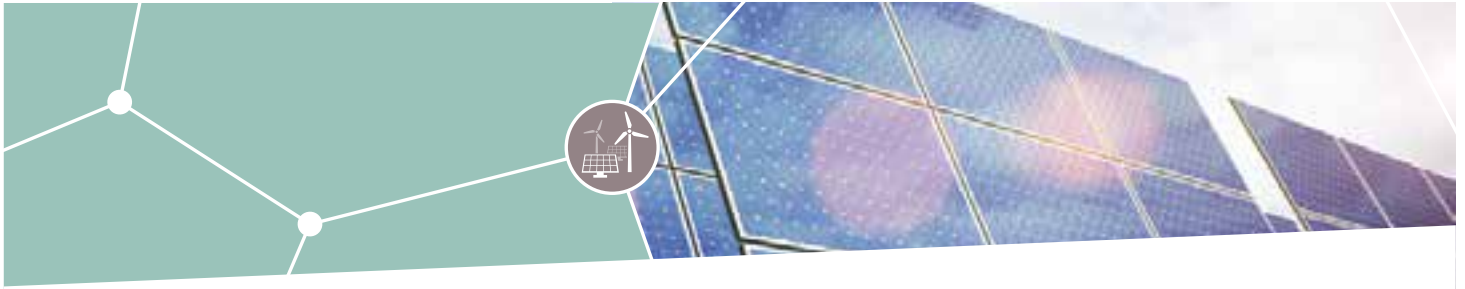
Mobility & Battery Driven

Full range of best-in-class components

From EV charger and light electric vehicle (LEV) to service robotics and drones, Infineon’s family of configurable half-bridge and three-phase gate driver ICs can be combined with powerful Infineon MOSFETs to provide the required power and efficiency. Automotive-specific gate drivers qualified according to AEC-Q100 are also available.

For battery-driven applications, saving battery power is the key. Infineon offers an excellent selection of gate driver ICs providing the highest-possible energy efficiency and top precision.

Recommended Gate Drivers					
	       				
Mobility & Battery Driven	Drones/ E-Bike/ E-Scooter	EV Charger/ Battery Charger	General Traction	Light Electric Vehicle (LEV)	Lawn Mower/ Vacuum/ Service Robotics
Inverter	<ul style="list-style-type: none"> ● 6EDL04N02PR ● IRS2334 ● IRS2007S 	<ul style="list-style-type: none"> ● IRS2186S 	<ul style="list-style-type: none"> ● 1EDI60I12AF ● IR2214SS ● IR2213 	<ul style="list-style-type: none"> ● 6EDL04N02PR ● IR2136S ● 2EDL05N06PF ● IRS2183 	<ul style="list-style-type: none"> ● 6EDL04N02PR
DC-DC		<ul style="list-style-type: none"> ● 1EDI20I12AF ● 1EDI40I12AF ● IR2214SS 			
PFC		<ul style="list-style-type: none"> ● IRS4427S ● IRS44273L ● 2EDN7524F 			
HB (LLC)		<ul style="list-style-type: none"> ● 1EDI60I12AF ● 1EDU20I12SV 			
Sync-Buck		<ul style="list-style-type: none"> ● IR2010S 			
BLDC					<ul style="list-style-type: none"> ● 6EDL04N02PR ● IR2136S ● IRS2007S





Renewable Energy

Powering an energy-smart world

Improving efficiency is the number one objective in the field of photovoltaics. Efficiency gains of as little as one percent can still yield enormous returns in renewable energy segment.






Infineon provides a comprehensive portfolio of high-performance gate driver ICs for photovoltaic inverters. By combining EiceDRIVER™ with super-junction MOSFETs such as CoolMOS™, IGBTs, Silicon Carbide (SiC) MOSFET such as CoolSiC™, as well as IGBT and SiC modules, Infineon enables solutions that maximizing uptime and energy production.

Recommended Gate Drivers		 Solar	 Pumps
Renewable Energy	Heat Pump	Solar Inverter	
Inverter (<2 kW)	<ul style="list-style-type: none"> ● 6EDL04I06PT ● IR2136S ● 2ED2304S06F 		
Inverter (>2 kW)	<ul style="list-style-type: none"> ● IR2214SS ● IR2213 ● IR2235 ● 1EDI20I12AF 		
μInverter Boost		<ul style="list-style-type: none"> ● IRS4427S ● 2EDN7524F ● IRS44273L 	
μInverter DC-AC		<ul style="list-style-type: none"> ● 2ED2304S06F ● IR2114SS ● 2EDL05N06PJ 	
String Boost		<ul style="list-style-type: none"> ● 2EDN8524F ● IRS4427S ● 1EDI20N12AF 	
String Inverter		<ul style="list-style-type: none"> ● 1ED020I12-F2 ● IR7106S ● 1EDI60N12AF 	
Central Boost/SMPS		<ul style="list-style-type: none"> ● 2EDN8524F ● 1EDI60I12AF 	
Central Inverter		<ul style="list-style-type: none"> ● 1EDI60I12AF ● 1ED020I12-F2 ● IR2214SS 	

+SiC Silicon Carbide Drive Requirements

Ultra-fast switching 1200-V power transistors such as CoolSiC™ MOSFETs can be easier handled by means of isolated gate output sections. Therefore, the following galvanically isolated EiceDRIVER™ ICs based on Infineon's coreless transformer technology are recommended as most suitable.

For a larger selection of isolated gate drivers, refer to the product portfolio overview section of the selection guide. The drivers incorporate most important key features and parameters for SiC driving such as tight propagation delay matching, precise input filters, wide output-side supply range, negative gate voltage capability, and extended CMTI capability.

Product	Part Number	Typical Peak Drive Current	VCC2- VEE2	Typical Propagation Delay	Active Miller Clamp	Other Key Features	Package
1EDI Compact Isolated High-Side Driver Family	● 1EDI20I12MF	3.5 A	20 V	≤ 300 ns	✓	Functional isolation	DSO-8 
	● 1EDC20H12AH	3.5 A	40 V	≤ 125 ns	-	7.6 mm creepage clearance; UL 1577 certified with $V_{ISO}=2500$ V(rms) for 1 min	DSO-8 
	● 1EDC60H12AH	9.4 A	40 V	≤ 125 ns	-		
	● 1EDC20I12MH	3.5 A	20 V	≤ 300 ns	✓		
1ED-F2 Isolated High-Side Driver with Integrated Protection	● 1ED020I12-F2	2.0 A	28 V	≤ 170 ns	✓	Short circuit clamping; DESAT protection; Active shutdown	DSO-16 
2ED-F2 Isolated Dual High-Side Driver with Integrated Protection	● 2ED020I12-F2	2.0 A	28 V	≤ 170 ns	✓		DSO-36 
1EDU Slew Rate Control (SRC) Isolated High-Side Driver	● 1EDU20I12SV	2.0 A	28 V	≤ 485 ns	✓	Real-time adjustable gate current control; Over-current protection; Soft turn-off shut down; Two-level turn-off; UL 1577 certified with $V_{ISO}=5000$ V(rms) for 1 min	DSO-36 

Every Switch Needs A Driver

Technology leadership

- › Rugged and proven high-voltage processes
- › Coreless transformer technology for galvanic isolation
- › Highest performance and best-in-class protection features

System knowledge

- › Optimum solutions based on detailed understanding of the system
- › Comprehensive range of products for different system requirements

Comprehensive portfolio

- › Over 500 gate driver ICs

Quality

- › Proactive quality management of products and processes
- › Highest reliability for demanding industrial applications

Support

- › Regional application support centers
- › Detailed application notes and evaluation boards
- › Supply continuity for long-term production



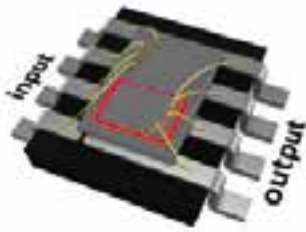
Gate Driver Support

Tools and Materials

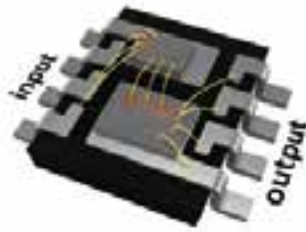
- › Infineon Gate Drivers Home Page – www.infineon.com/gatedriver
- › Selection Guide Brochure – www.infineon.com/gdbrochure
- › Gate Driver Finder Tool – www.infineon.com/gdfinder
- › Cross Reference Search Tool – www.infineon.com/crs
- › Simulation Tools – www.infineon.com/ifxdesigner



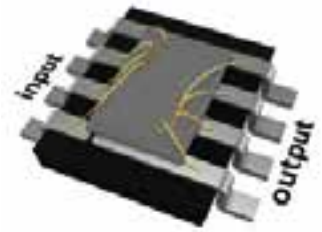
Infineon Gate Driver IC Technologies



Level-shift junction isolation (JI) & silicon-on-insulator (SOI)
 > International Rectifier pioneering junction-isolation technology and new-generation Infineon SOI technology.



Coreless transformer (CT)
 > Magnetically-coupled technology for galvanic isolation.



Non-isolated (N-ISO)
 > Industry-leading non-isolated mixed-signal low-voltage process technologies.

Driver Configuration			5 V	25 V	100 V	200 V	500 V	600 V	700 V	1200 V
Drivers	1-Channel	High-Side			●	●	●	●		●
		Low-Side	●	●						
	2-Channel	High-Side								●
		Low-Side		●						
		High-Side + Low-Side				●	●	● ●	●	●
	Half-Bridge			●	●		● ● ●	●	● ●	
	4-Channel	H Bridge			●					
6-Channel	Three-Phase Bridge				●		● ●		● ●	
System Building Blocks	Current Sense							●		●
	Start-Up						●			

● Non-Isolated (N-ISO) ● Junction Isolation (JI) ● Silicon On Insulator (SOI) ● Coreless Transformer (CT)



Infineon Gate Driver IC Package Options

DSO-8 (SOIC-8N)		DSO-28 (SOIC-28WB)		MQFP-64	
DSO-8 300-mil (SOIC-8WB)		DSO-36		WSON-6	
DSO-14 (SOIC-14N)		DIP-8 (PDIP-8)		WSON-8	
DSO-16 300-mil (SOIC-16WB)		DIP-14 (PDIP-14)		SSOP-24	
DSO-18		DIP-28 (PDIP-28)		TSSOP-28	
DSO-19		SOT23-5		TSSOP-8	
DSO-20 (SOIC-20WB)		SOT23-6		VQFN-14 (MLPQ 4X4 14L)	
VQFN-34 (MLPQ 7X7 34L)		LCC-32 (PLCC-44)		VQFN-28 (MLPQ 5X5 28L)	
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