Infineon EiceDRIVER™ gate driver ICs

Selection guide 2022

Every switch needs a driver

www.infineon.com/gatedriver
www.infineon.com/gdbrochure

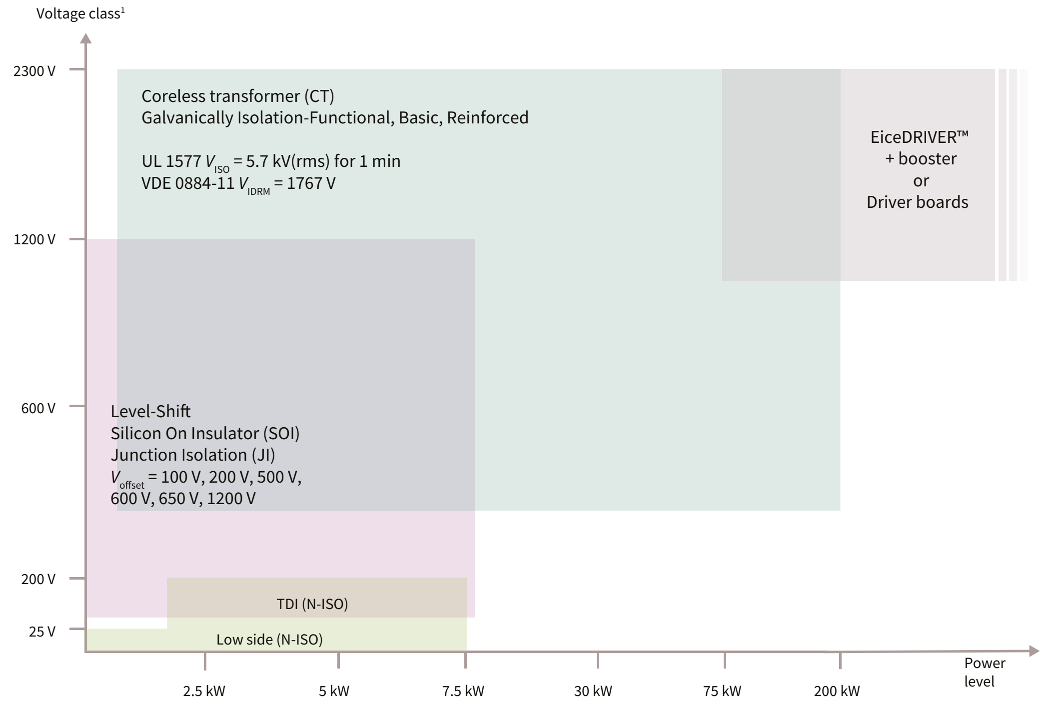
Contents

EiceDRIVER™ and MOTIX™ gate driver IC

Gate driver ICs serve as the interface between control signals (digital or analog controllers) and power switches (IGBTs, MOSFETs, SiC MOSFETs, and GaN HEMTs). The integrated gate driver solutions reduce your design complexity, development time, bill of materials (BOM), and board space while improving reliability over discretely-implemented gate-drive solutions.

Every switch needs a driver, the right driver makes a difference. Infineon offers a comprehensive portfolio of EiceDRIVER™ gate driver ICs with a variety of configurations, voltage classes, isolation levels, protection features, and package options. EiceDRIVER™ gate driver ICs are complementary to Infineon IGBT discretes and modules, silicon (CoolMOS™, OptiMOS™ and StrongIRFET™) and silicon carbide MOSFETs (CoolSiC™), gallium nitride HEMTs (CoolGaN™), or as part of integrated power modules (CIPOS™ IPM and iMOTION™ smart IPM).

In addition, MOTIX™ gate driver is part of the MOTIX™ scalable product portfolio for low-voltage motor control solutions including MOTIX™ Driver, MOTIX™ Bridge, MOTIX™ SBC, and MOTIX™ MCU.



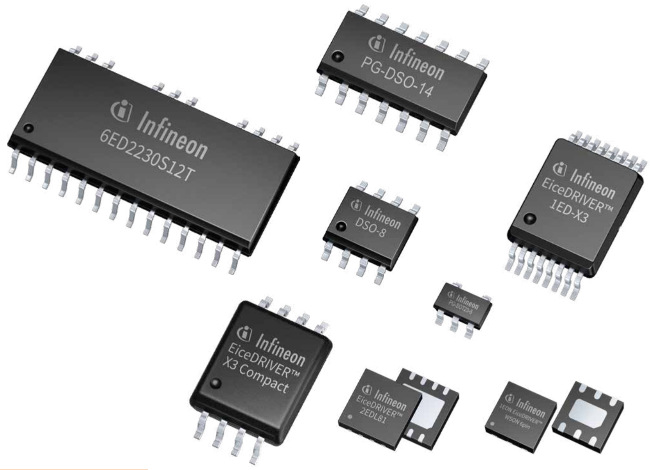
Gate driver configuration			25 V	25 - 105 V	200 V	500 V	600 V	650 V	1200 V	2300 V
Gate drivers	1-Channel	Isolated							🔵	🔵
		High-side		🟢 🟠	🟢 🟠	🟠	🟠			
		Low-side	🟢							
	2-Channel	Isolated			🔵			🔵	🔵	
		High-side		🟢						
		Low-side	🟢							
		High-side + Low side			🟠 🟣	🟠	🟠 🟣	🟣	🟠	
		Half-bridge		🟠	🟠 🟣		🟠 🟣	🟣	🟠	
	4-Channel	Full-bridge		🟠			🟠			
	6-Channel	Three-phase			🟣		🟠 🟣		🟠 🟣	

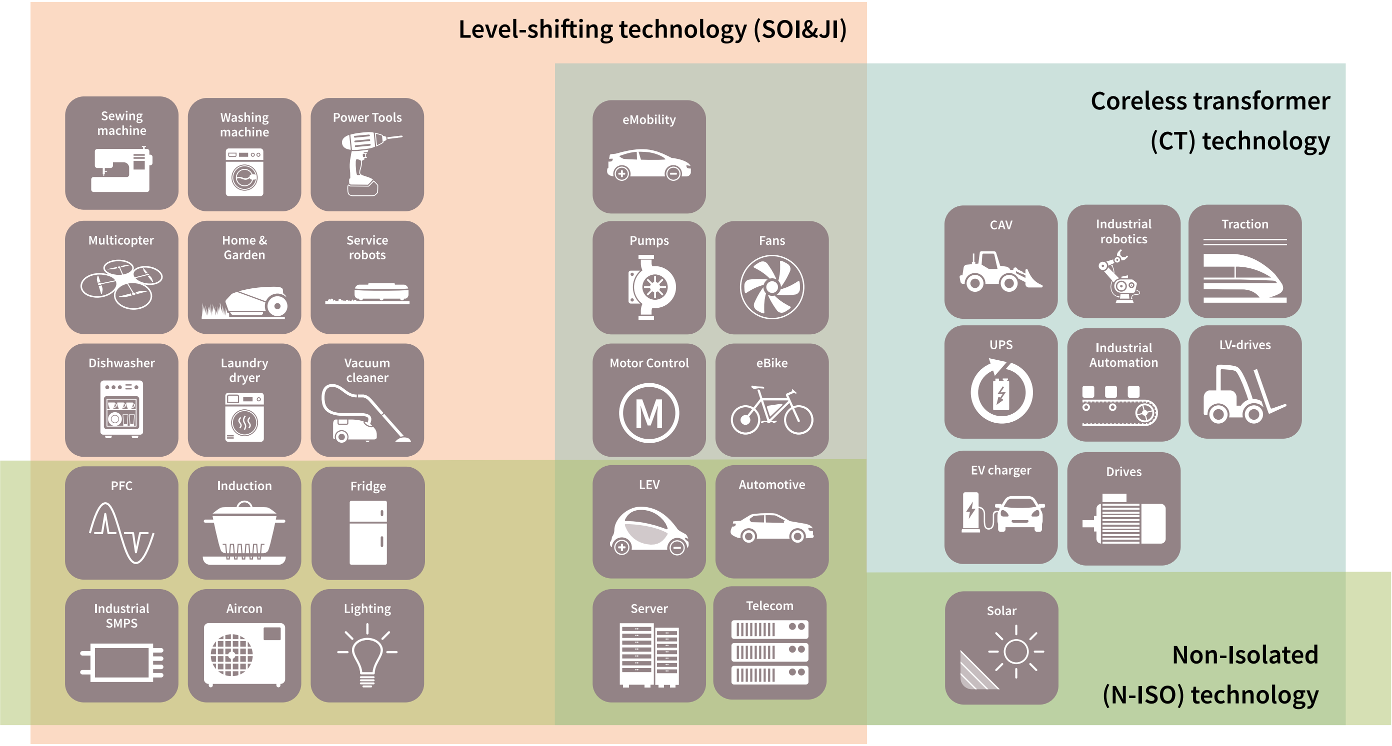
🟢 Non-isolated (N-ISO) 🟠 Junction isolation (JI) 🟣 Silicon on insulator (SOI) 🔵 Coreless transformer (CT)

Note 1 Voltage class on the top row is defined base on different driver configurations for the maximum Voltage class.
1. For single high-side, high-side and low-side, half bridge and three phase gate drivers, voltage class is defined as switch break down voltage in applications.
2. For low side drivers (N-ISO), voltage class is defined as maximum operating range supply voltage.
3. For special cases as 1EDNx550 (1EDN-TDI, N-ISO), voltage class is defined as maximum bus voltage (highest floating voltage it can manage).

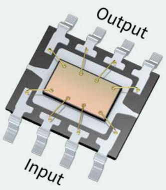
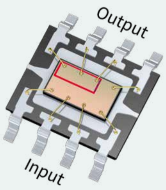
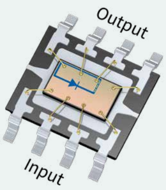
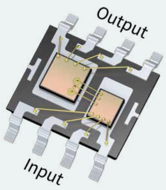
Infineon gate driver IC applications

Leveraging the application expertise and advanced technologies of Infineon and International rectifier, EiceDRIVER™ gate driver ICs are well-suited for many applications such as industrial motor drives, home appliances, solar inverters, automotive applications, EV-charging, UPS, switch-mode power supplies (SMPS), high-voltage lighting, battery-powered applications, etc.



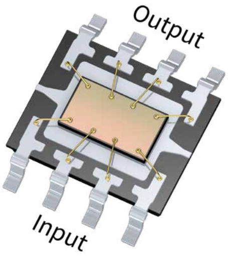


Infineon gate driver IC technologies

Non-isolated GD	Level-shift GD		Isolated GD
● Non-isolated (N-ISO)	● Junction isolation (JI)	● Silicon on insulator (SOI)	● Coreless transformer (CT)
			
› Monolithic construction of ground-reference gate drivers for 20 to 35 V supply voltage applications › **Comprehensive families** of single- and dual-low-side drivers with flexible options for output current, logic configurations and UVLOs (plus non-isolated TDI) › Uses **rugged and high-performance technologies** of HVIC process or **state-of-the-art 130-nm** process	› Monolithic construction of 1 to 6 gate drive channels up to 1200 V rating › Industrial pioneering **high-voltage IC (HVIC) technology** used in all high-voltage gate drive applications › **Gen 2** technology (**IR** prefix): Industrial pioneering HVIC process › **Gen 5** technology (**IRS** prefix): Cost-effective pin-to-pin versions of Gen 2	› Monolithic construction of 2 to 6 gate drive channels up to 1200 V rating › Built-in **PN-based bootstrap diode** (36 Ω typ.) for simplified bootstrap operation & reduced PCB area › **Negative transient immunity** to prevent latch-up: -100 V for 300 ns › **>50% lower level-shift losses** for higher efficiency, higher frequency operation, smaller heat sinks, and higher reliability	› Two separate chips solution with **magnetic coupling** providing **galvanically isolated** single- and dual channel gate drivers › **VDE 0884-11 isolation technology** providing **isolation up to 8 kV$_{pk}$** V_{IOTM} and up to **±2300 V functional isolation** › CMTI of more than 300 V/ns › **Strongest gate-drive output currents** (up to ±18 A) reducing need for external booster

Infineon non-isolated (N-ISO) technology

Non-isolated (N-ISO) technology refers to the gate driver ICs utilizing low-voltage circuitry with the robust technology of high-voltage gate drivers, and the state-of-the-art 0.13-µm process. Infineon's world-class fabrication techniques enable high-current gate drivers for high-power-density applications.



Low side gate driver

Infineon offers comprehensive families of single-low-side and dual-low-side gate driver ICs with flexible options for output current, logic configurations, packages, and protection features such as under-voltage lockout (UVLO), integrated overcurrent protection (OCP) in industry-standard DSO-8 and small form-factor SOT23 and WSON packages.
The new 1ED4417x low side driver family provides the best-in-class fault reporting accuracy with OCP threshold tolerance of ± 5%. In addition, Infineon's IC technology enables a tiny PG-SOT23 package by combining the fault output and enable functions into a single pin.

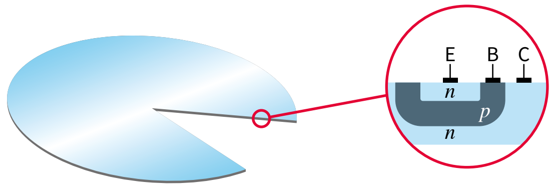
Truly differential inputs (TDI) gate driver

The input signal levels of conventional low-side gate driver ICs are referenced to the ground potential of the gate driver IC. If in the application the ground potential of the gate driver IC shifts excessively, false triggering of the gate driver IC can occur. The 1EDN-TDI gate driver ICs have truly differential inputs. Their control signal inputs are largely independent from the ground potential. Only the voltage difference between its input contacts is relevant. This prevents false triggering of power MOSFETs.

www.infineon.com/GDlowside
www.infineon.com/tdi

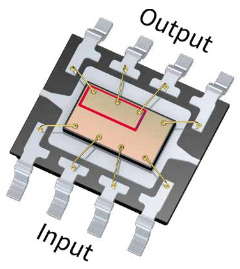
Infineon junction-isolation (JI) technology

Infineon p-n junction-isolation (JI) technology is a mature, proven industry-standard MOS/CMOS fabrication technique. Infineon's proprietary HVIC and latch-immune CMOS technologies enable rugged monolithic construction. The advanced process allows monolithic high-voltage and low-voltage circuitry construction with the best price per performance for specific motor-control and switch-mode power supply applications.



Main benefits of Infineon JI technology:

- High current capability (4 A)
- Precision analog circuitry (tight timing / propagation delay)
- Most comprehensive portfolio with industry-standard gate driver ICs
- Voltage classes: 100 V, 200 V, 500 V, 600 V, and 1200 V
- Configurations: single channel, half-bridge / high- and low-side, three-phase, and more
- Gate driver ICs tailored towards the best price-performance ratio



Pioneered by International Rectifier (IR) since 1984 with the introduction of the first monolithic product, the high-voltage integrated circuit (HVIC) technology uses patented and proprietary monolithic structures integrating bipolar, CMOS, and lateral DMOS devices with breakdown voltages above 700 V and 1400 V for operating offset voltages of 600 V and 1200 V respectively.

Using this mixed-signal HVIC technology, both high-voltage level-shifting circuits and low-voltage analog and digital circuits can be implemented. This is done with the ability to place high-voltage circuitry (in a 'well' formed by polysilicon rings).

These HVIC gate drivers with floating switches are well-suited for topologies requiring high-side, half-bridge, and three-phase configurations.

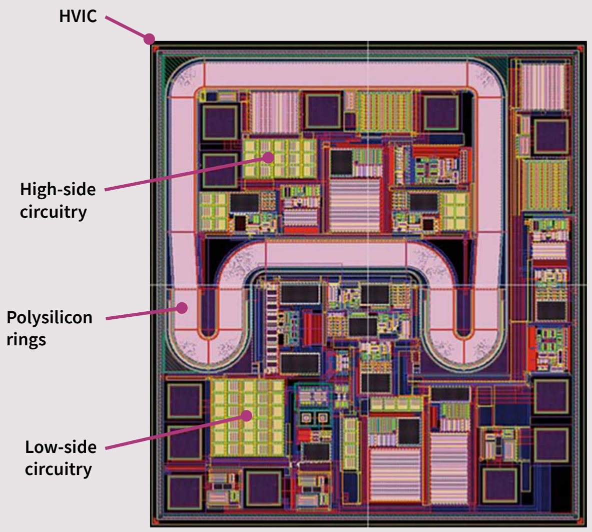


Figure 1: Top down view of JI gate driver IC

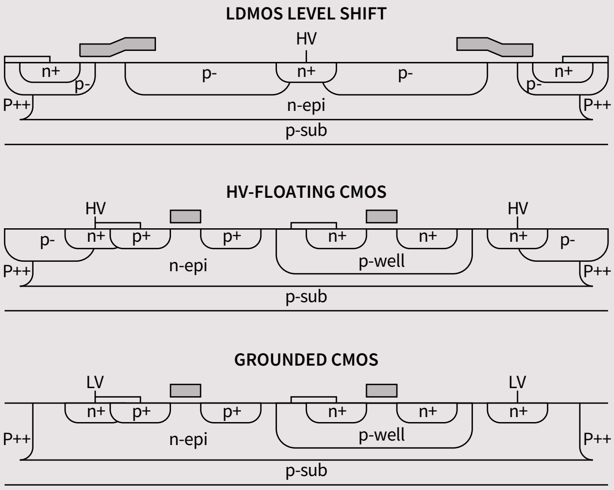
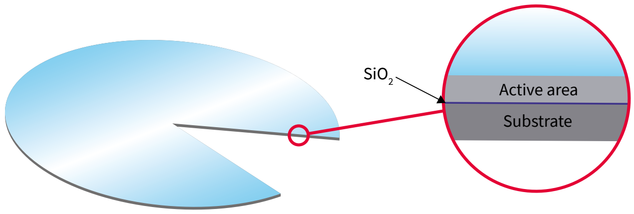


Figure 2: Device cross section of the high-voltage integrated circuit

www.infineon.com/ji

Infineon silicon-on-insulator (SOI) technology

Infineon silicon-on-insulator (SOI) technology is a high-voltage, level-shift technology for Infineon EiceDRIVER™ level-shift gate driver ICs with integrated bootstrap-diode (BSD) and industry-best-in-class robustness to protect against negative transient voltage spikes. Each transistor is isolated by buried silicon dioxide eliminating parasitic bipolar transistors that can cause latch-up. This technology can also lower the level-shift power losses to minimize device-switching power dissipation. The advanced process allows monolithic high-voltage and low-voltage circuitry construction with technology-enhanced benefits.

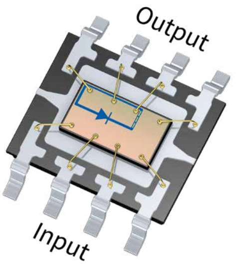


Main benefits of Infineon SOI technology:

- Best-in-class immunity to negative transient voltage prevents erratic operation and latch-up while improving reliability
- Low ohmic integrated bootstrap diodes (BSD) have the lowest reverse recovery and forward losses resulting in increased efficiency, faster switching, lower temperature, and increased reliability
- Minimum level-shift losses improve driver efficiency and allow flexible housing designs
- Integrated input filters enhance noise immunity
- 160 V, 200 V, 600 V, 650 V and 1200 V withstand voltages for each voltage design class providing operating margin

Operation robustness of negative transient voltage on the VS pin (-VS)

Today's high-power switching inverters and drives carry a large load current. The voltage swing on VS pin does not stop at the level of the negative DC bus. It swings below the level of the negative DC bus due to the parasitic inductances in the power circuit and from the die bonding to the PCB tracks. This undershoot voltage is called "negative transient voltage".



EiceDRIVER™ SOI level-shift gate drivers have the best-in-the-industry operational robustness. In Figure 4, the safe operating line of 6ED2230S12T is shown at V_{BS} = 15 V for pulse widths up to 1000 ns. In the green area, the products do not show unwanted functional anomalies or permanent damage to the IC.

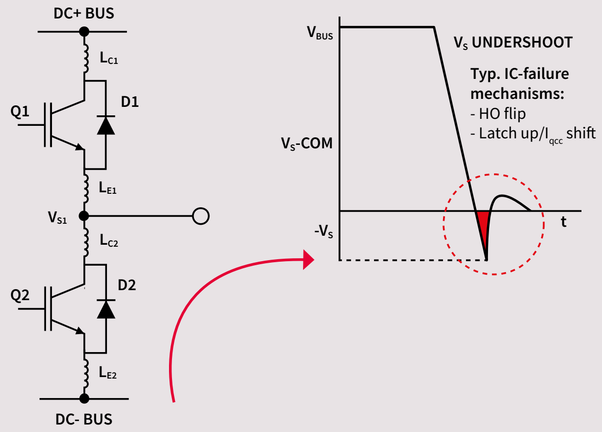


Figure 3:
Parasitic elements of a half-bridge configuration

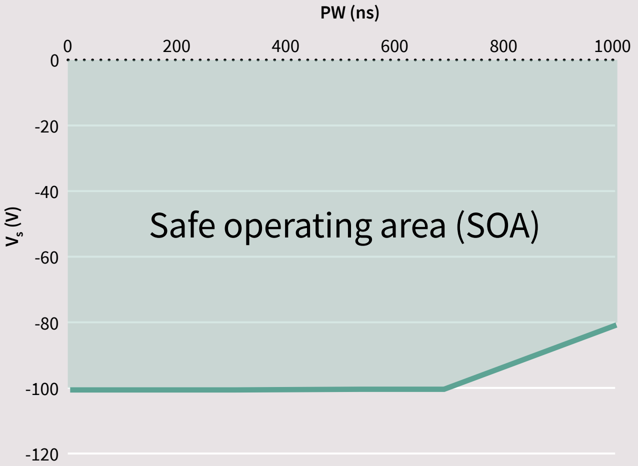


Figure 4:
Negative VS transient SOA characterization @ V_{BS}=15 V of 6ED2230S12T

www.infineon.com/soi

Infineon silicon-on-insulator (SOI) technology

Integrated bootstrap diode (BSD)

The bootstrap power supply is the most common technique for supplying power to the high-side driver circuitry due to its simplicity and low cost. As shown in Figure 5, the bootstrap power supply consists of a bootstrap diode and capacitor. The floating channel of level-shift gate drivers is typically designed for bootstrap operation. Infineon SOI gate drivers integrate the ultra-fast bootstrap diodes. The low diode resistance of $R_{BS} \leq 40\ \Omega$ enables a wide operating range.

The Infineon SOI gate drivers with BSD can drive larger IGBTs without the risk of self-heating, minimize BOM count, and reduce system cost.

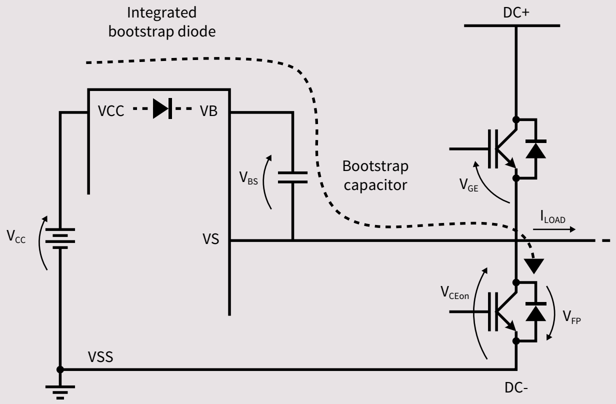


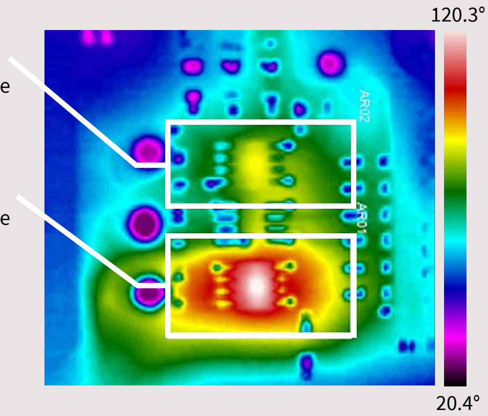
Figure 5:
Typical connection diagram with integrated bootstrap diode (BSD)

Low level-shift losses

Level-shift losses become a significant part as the operating frequency increases. A level-shift circuit is used to transmit the switching information from the low-side to the high-side. The necessary charge of the transmission determines the level-shift losses.

EiceDRIVER™ SOI level-shift gate drivers require a very low charge to transmit the information. Minimizing level-shifting power consumption allows design flexibility of higher frequency operations, as well as longer lifetime, improved system efficiency and application reliability.

In Figure 6, the thermal diagrams on the same PCB board show a temperature difference of 55.6°C lower in the power dissipation of the EiceDRIVER™ SOI gate driver (2ED2106S06F).



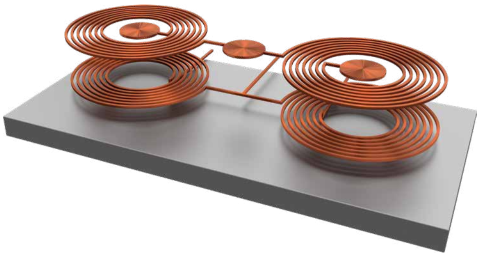
Infineon SOI
HS+LS driver
Max. temperature
66.6°

Standard
HS+LS driver
Max. temperature
122.2°

Figure 6:
DC Bus voltage = 300 V; With CoolMOS™ P7 in D-Pak; 300 kHz switching frequency

Infineon galvanically isolated coreless transformer (CT) technology

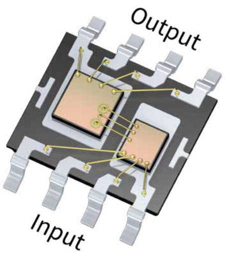
Infineon coreless transformer (CT) technology is a magnetically coupled, galvanically isolated technology which uses semiconductor manufacturing processes to integrate an on-chip transformer consisting of metal spirals and silicon oxide insulation. The on-chip coreless transformers are used for transmitting switching information and other signals between the input chip and output chip. The CT technology enables short propagation delay, best-in-class delay matching, and strong robustness for driving SiC MOSFETs, GaN HEMTs, state-of-the-art IGBTs, and MOSFETs.



Main benefits of Infineon CT technology:

- Galvanic isolation (functional, basic, reinforced)
- Allows large voltage swings of ±2300 V or larger
- Immunity against negative and positive transients
- Low power losses
- Flexible configurations and features such as
  - High output current (up to 18 A)
  - Precise DESAT protection
  - Active Miller clamp
  - I2C configurability
  - Isolation rating and certification (UL 1577 and VDE 0884-11)
  - 4 mm and 8 mm creepage

Robustness



- Extremely robust signal transfer independent of common mode noise
- Common mode transit immunity (CMTI) up to 300 V/ns
- Tight propagation-delay matching: tolerance improves application robustness without variations due to aging, current, and temperature

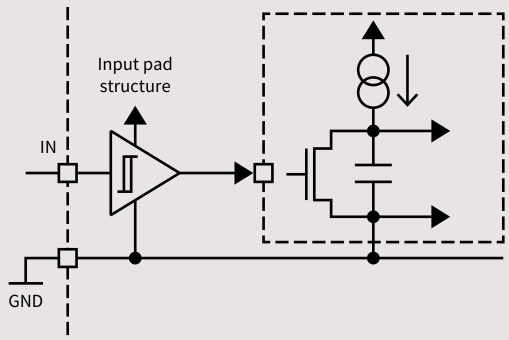
Design flexibility

- Wide range of gate voltages up to 40 V, including negative gate voltage
- CT technology is ready for use with wide bandgap such as SiC MOSFETs and GaN HEMTs
- Closed-loop gate current control option

Precise timing control

- Precise, integrated filters reduce propagation-delay variation over a wide range of operating conditions
- Integrated filters reduce the need of external filters
- Tight propagation delay allows minimum deadtime improving system efficiency and decreasing harmonic distortion

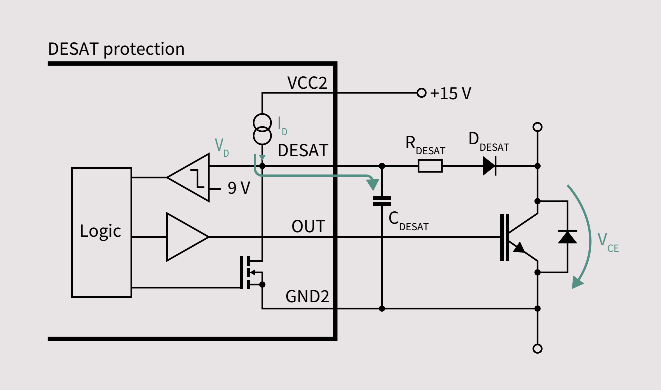
Integrated ramp-based filter



www.infineon.com/GDisolated

Protection

- Reliable short-circuit detection via accurate desaturation (DESAT) detection circuits (current source and comparator) protects the power switches from damage during short-circuit condition
- Two-level turn-off (TLTO) for short-circuit current protection to lower collector-emitter voltage overshoot
- Active Miller clamping option protects against parasitic turn-on due to high dV/dt
- Built in short-circuit clamping limits the gate voltage during short circuit



Safety certifications

- Safety certifications available for VDE 0884-11 and UL 1577

UL CERTIFIED

For SiC MOSFET switching

- Ideal for ultra-fast switching of 650 V - 2000 V silicon carbide power transistors such as CoolSiC™ SiC MOSFETs
- The EiceDRIVER™ isolated gate drivers incorporate the most important key features and parameters for SiC MOSFET driving:
  - Accurate DESAT for short circuit protection
  - Active Miller clamp for parasitic turn-on
  - Tight propagation delay matching
  - Precise input filters
  - Wide output side supply range
  - Negative gate voltage capability
  - Extended common mode transient immunity (CMTI) capability

CoolSiC™

Definitions of the various isolation types

Galvanic isolation

Supplementary isolation
Independent isolation applied in addition to basic isolation for fault protection

Basic isolation
Isolation of hazardous-live-parts which provides basic protection

Double isolation
Isolation consisting of both basic isolation and supplementary isolation

Functional isolation
Isolation between conductive parts which is necessary only for the proper functioning of the equipment

Reinforced isolation
Isolation of hazardous-live-parts which provides a degree of protection against electric shock equivalent to double isolation

Sources: IEC 60664-1:2020,
VDE 0884-11, UL 1577

Choosing a gate driver IC

Gate driver

Isolation requirement	Non-isolated			Functional level shift				
# of channels & configuration	1-Ch	2-Ch	4-Ch, 6-Ch, 8-Ch, 16-Ch	1-Ch	2-Ch		4-Ch	6-Ch
					Half-bridge	High-side & Low-side	Full-bridge	3-Phase
Voltage class	22 V 25 V 40 V 65 V 200 V	22 V 24 V 25 V 75 V 105 V	28 V 55 V 90 V	100 V 200 V 500 V 600 V	120 V 200 V 600 V 650 V 1200 V	200 V 500 V 600 V 650 V 1200 V	600 V	200 V 600 V 1200 V
Product family	**22 V** › 1EDN75xx › 1EDN85xx **25 V** › 1ED4417x › IRS44273 **65 V (Auto)** › AUIR324x **200 V (TDI)** › 1EDNx550 › 1EDN71x6U	**22 V** › 2EDN743x › 2EDN753x › 2EDN853x **24 V** › 2ED24427 **25 V** › IR(S)442x **75 V (Auto)** › 2ED2410-EM **105 V (Auto)** › 2ED4820-EM	**Multi half-bridges** › TLE956x › TLE9210x › TLE9180x › TLE7189F	**100 V (JI)** › IRS10752L **200 V (JI)** › IRS20752L **500 V (JI)** › IR2125 **600 V (JI)** › IR(S)21271S › IRS25752L **600 V (Auto)** › AUIRS2118	**120 V** › 2EDL8x2xG3C **200 V (JI)** › IRS200xS **600 V (JI)** › IR(S)2304 › IR(S)2153x **600 V (SOI)** › 2EDL05N06 › 2EDL23I06 **600 V (Auto)** › AUIRS2181 **650 V (SOI)** › 2ED2304 › 2ED2103 › 2ED2182 **1200 V (JI)** › IR2214SS	**200 V (JI)** › IR2010 › IRS2011S **500 V (JI)** › IR(S)2110S **600 V (JI)** › IR(S)2106 › IRS2113 › IRS2181 › IRS21867 **650 V (SOI)** › 2ED2101S06 › 2ED2106S06 › 2ED2181S06 › 2ED2110S06 **1200 V (JI)** › IR2213	**600 V (JI)** › IRS24531 › IRS2453	**200 V (SOI)** › 6EDL04N02 **600 V (SOI)** › 6EDL04I06 › 6EDL04N06 **600 V (JI)** › IR2136S › IRS2334M **1200 V (JI)** › IR2233S › IR2235S **1200 V (SOI)** › 6ED2230S12

Isolation requirement	Galvanic Isolation					
	Functional (UL 1577)			Basic (UL 1577 + VDE)	Reinforced (UL 1577 + VDE)	
# of channels & configuration	1-Ch	2-Ch		1-Ch	1-Ch	2-Ch
		Isolation on high-side only	Isolation on high-side and low-side			Isolation on high-side and low-side
Voltage class	650 V 1200 V 2300 V	650 V 1200 V	650 V 1200 V	1200 V	650 V 1200 V 2300 V	650 V
Product family	**650 V (GaN)** › 1EDF5673x **650 V (MOSFET)** › 1EDBx275F **1200 V (Compact)** › 1EDIxxx12MF › 1EDIxxx12AF **1200 V (Enhanced)** › 1ED020I12-F2 **1200 V (Auto)** › 1ED020I12FA2 › 1EDI2010AS **2300 V (Compact)** › 1ED31xxMU12F › 1ED31xxMU12H **2300 V (Enhanced)** › 1ED34xxMU12M › 1ED38xxMU12M	**650 V (Enhanced)** › 2ED020I06-FI **1200 V (Enhanced)** › 2ED020I12-FI	**650 V (MOSFET)** › 2EDF72x5K › 2EDFxx75F › 2EDBx259x* **650 V (IGBT, SiC)** › 2EDF9275F › 2EDB9259Y* **1200 V (Enhanced)** › 2ED020I12-F2	**1200 V (IGBT)** › 1EDI302xAS **1200 V (SiC FET)** › 1EDI303xAS **1200 V (Enhanced)** › 1ED020I12-B2	**650 V (GaN)** › 1EDS5663H **1200 V (1ED-SRC)** › 1EDS20I12SV **2300 V (Compact)** › 1ED31xxMC12H › 1ED32xxMC12H **2300 V (Enhanced)** › 1ED332xMC12N › 1ED34xxMC12M › 1ED38xxMC12M	**650 V** › 2EDSxx65H › 2EDRx25xx*

*Coming soon

Infineon power switch technologies

OptiMOS™ and StrongIRFET™ power MOSFET

20-300 V N-channel power MOSFETs

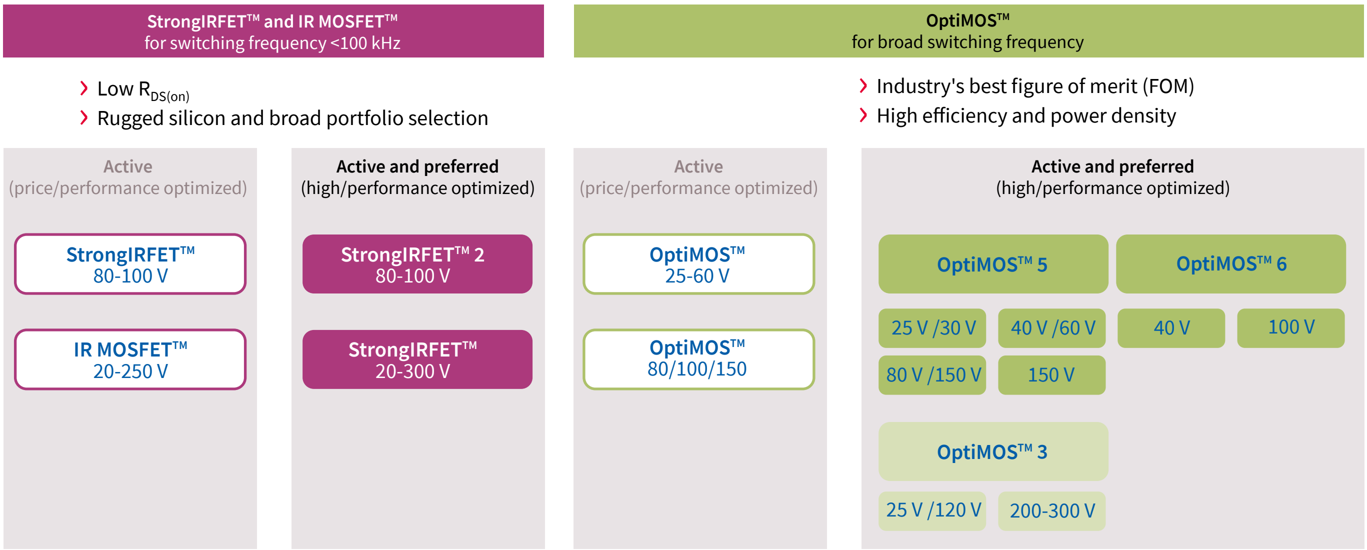
Infineon’s semiconductors are designed to bring more efficiency, power density and cost effectiveness. The full range of OptiMOS™ and StrongIRFET™ power MOSFETs enables innovation and performance in applications such as switch mode power supplies (SMPS), motor control and drives, inverters and computing.

Infineon’s highly innovative OptiMOS™ and StrongIRFET™ families consistently meet the highest quality and performance demands in key specifications for power system design such as on-state resistance ($R_{DS(on)}$) and figure of merit characteristics.

OptiMOS™ power MOSFETs provide excellent best-in-class performance. Features include ultra-low $R_{DS(on)}$, as well as low charge for high switching-frequency applications. StrongIRFET™ power MOSFETs are designed for rugged applications, and are ideal for designs with a low switching frequency as well as those that require a high current-carrying capability.

Automotive qualified OptiMOS™ is also available.
Please refer to the application section and www.infineon.com/automotivemosfet

Technology development and product family positioning



StrongIRFET™ and IR MOSFET™
for switching frequency <100 kHz

- Low $R_{DS(on)}$
- Rugged silicon and broad portfolio selection

Active
(price/performance optimized)

StrongIRFET™
80-100 V

IR MOSFET™
20-250 V

Active and preferred
(high/performance optimized)

StrongIRFET™ 2
80-100 V

StrongIRFET™
20-300 V

OptiMOS™
for broad switching frequency

- Industry's best figure of merit (FOM)
- High efficiency and power density

Active
(price/performance optimized)

OptiMOS™
25-60 V

OptiMOS™
80/100/150

Active and preferred
(high/performance optimized)

OptiMOS™ 5
25 V /30 V
40 V /60 V
80 V /150 V
150 V

OptiMOS™ 6
40 V
100 V

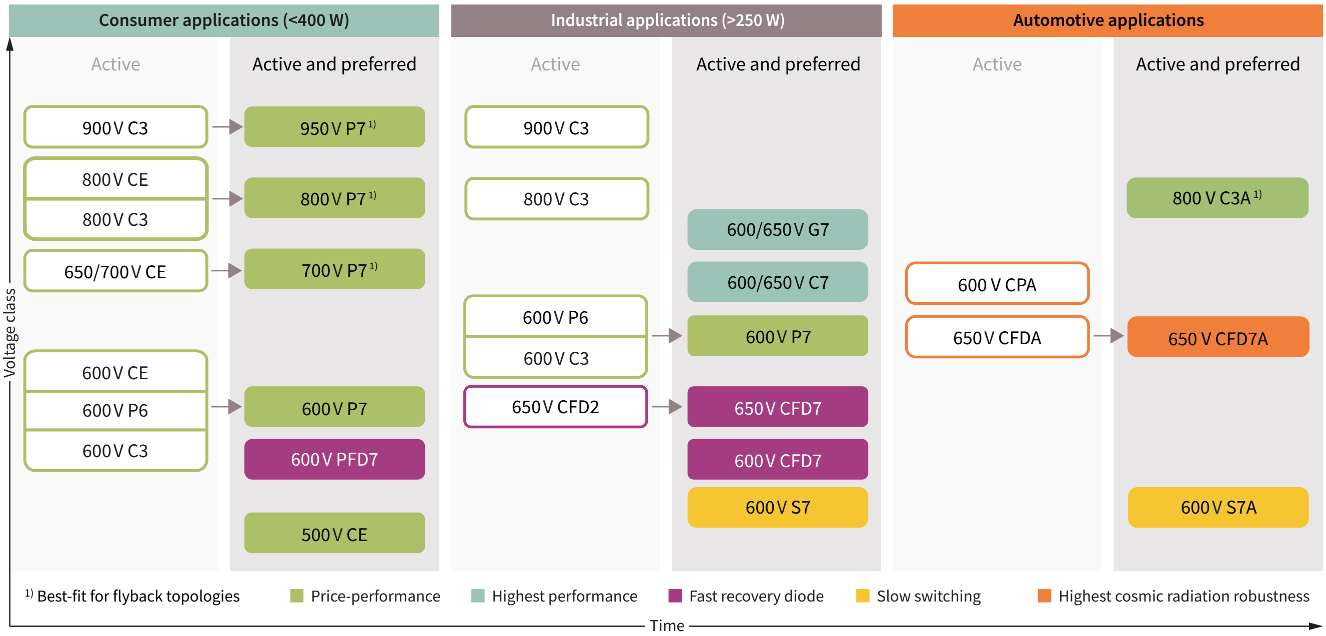
OptiMOS™ 3
25 V /120 V
200-300 V

www.infineon.com/powermosfet-12V-300V

CoolMOS™ SJ MOSFETs

Trusted leader in high voltage MOSFETs

The revolutionary CoolMOS™ power MOSFET sets new standards in the field of energy efficiency. Our CoolMOS™ products offer a significant reduction of conduction, switching and driving losses, and enable high power density as well as efficiency for superior power conversion systems.



CoolMOS™ low power package innovations
Click to learn more

CoolMOS™ high power package innovations
Click to learn more

High voltage superjunction MOSFETs address consumer applications, such as home appliance drives, smartphone/tablet chargers, notebook adapters, LED lighting, PC power, as well as audio and TV power supplies. Customers are increasingly replacing standard MOSFETs with superjunction MOSFETs to benefit from higher efficiency and lower power consumption for end users. CoolMOS™ P7 sets a new benchmark by offering high performance and competitive price all at once. CoolMOS™ PFD7 as brand new series is a state-of-the-art solution for high density chargers/adapters as well as home appliance drives (e.g., refrigerator compressors).

Also for industrial applications such as server, telecom, PC power, solar, UPS, EV-charging and others, Infineon's latest CoolMOS™ 7 superjunction MOSFETs with C7, G7, CFD7 and P7 product families offer what you need - from highest efficiency to best price performance. Complementary to the silicon CoolMOS™ portfolio, Infineon offers a broad wide bandgap (WBG) portfolio of CoolGaN™ e-mode HEMTs and CoolSiC™ MOSFETs to further optimize efficiency and system cost.

Infineon's industrial- and consumer-qualified CoolMOS™ superjunction MOSFET offering is complemented by the automotive qualified series 600 V CPA, 650 V CFDA, 800 V C3A and our latest 650 V CFD7A and 600 V S7A. Gain your momentum in the rapidly growing xEV market with our excellent performing automotive series addressing on-board charger, DC-DC converter, active pre-charge and discharge function, insulation monitor, HV eFuse and HV eDisconnect with proven outstanding quality standards that go well beyond AEC Q101.

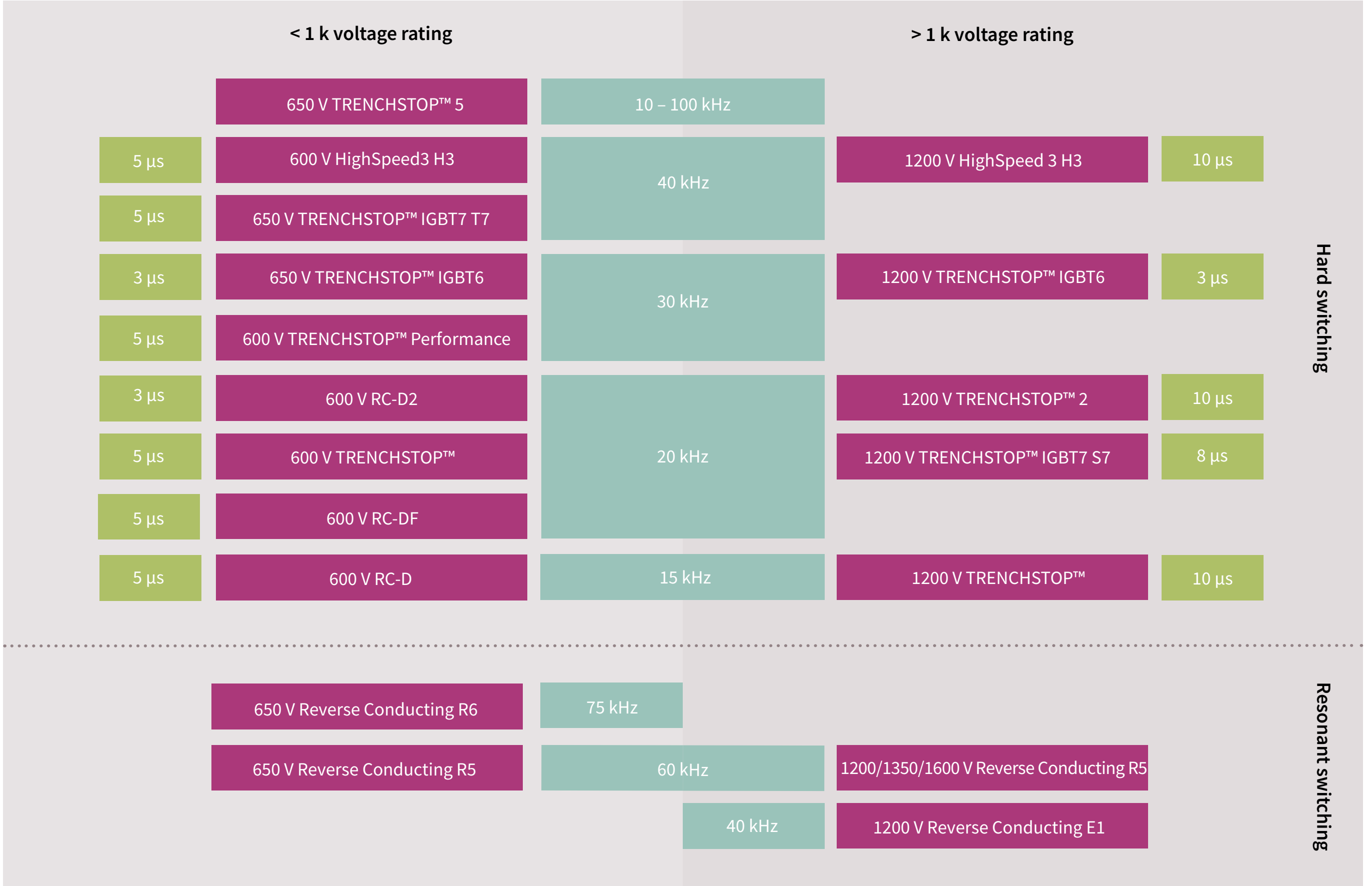
www.infineon.com/coolmos

Discrete IGBTs

Market leadership through groundbreaking innovation and application focus

Resolute to achieve the highest standards in performance and quality, Infineon offers a comperhensive portfolio of application-specific discrete IGBTs. From 600 V up to 1600 V, we offer a wide range of IGBT voltage classes to meet different voltage requirements in each application.

Our discrete IGBT package portfolio contains SMD (Surface Mount Device) packages, for example, D^2PAK, DPAK, SOT-223, and through-hole packages, for example, TO-220, TO-220FP, TO-247, TO-247-3-HCC, TO-247-4, TO-247PLUS, TO-247PLUS-4 and TO-247 Advanced Isolation packages. Automotive qualified IGBT Discretes are also available. Please refer to the application section or go to www.infineon.com/igbtdiscretes for the most up-to-date Discrete IGBT family overview.



	< 1 k voltage rating		> 1 k voltage rating		
	650 V TRENCHSTOP™ 5	10 – 100 kHz			Hard switching
5 µs	600 V HighSpeed3 H3	40 kHz	1200 V HighSpeed 3 H3	10 µs	
5 µs	650 V TRENCHSTOP™ IGBT7 T7				
3 µs	650 V TRENCHSTOP™ IGBT6	30 kHz	1200 V TRENCHSTOP™ IGBT6	3 µs	
5 µs	600 V TRENCHSTOP™ Performance				
3 µs	600 V RC-D2	20 kHz	1200 V TRENCHSTOP™ 2	10 µs	
5 µs	600 V TRENCHSTOP™		1200 V TRENCHSTOP™ IGBT7 S7	8 µs	
5 µs	600 V RC-DF				
5 µs	600 V RC-D	15 kHz	1200 V TRENCHSTOP™	10 µs	
	650 V Reverse Conducting R6	75 kHz			Resonant switching
	650 V Reverse Conducting R5	60 kHz	1200/1350/1600 V Reverse Conducting R5		
		40 kHz	1200 V Reverse Conducting E1		

kHz f_{sw} [kHz] (typical used up to) µs Short circuit withstand time [µs]

www.infineon.com/igbtdiscretes

Low to medium IGBT power modules

The EasyPIM™/EasyPACK™ and the EconoPIM™/EconoPACK™ families

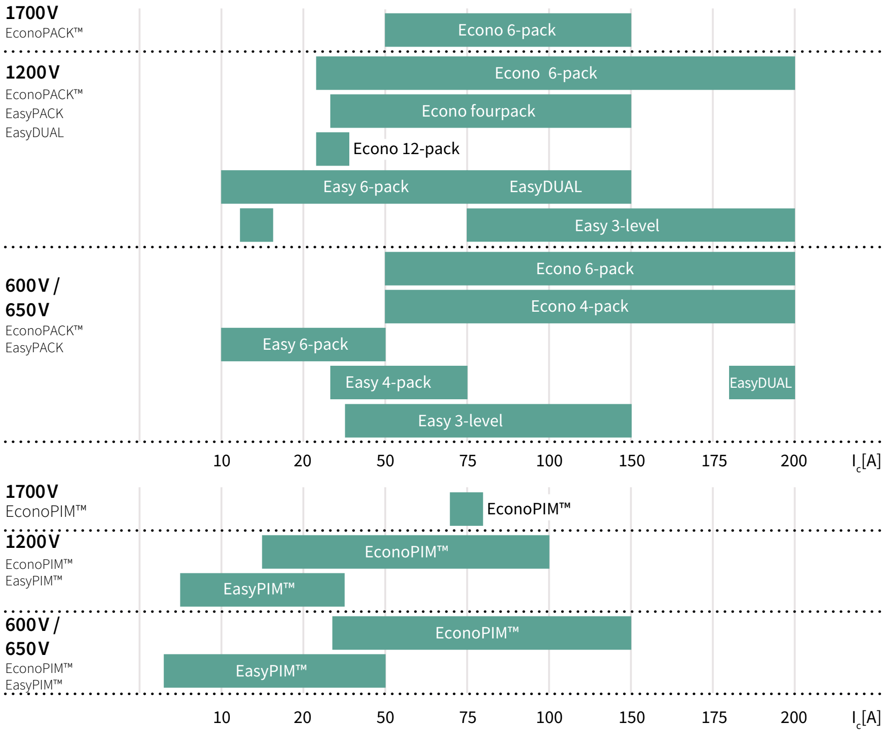
The EasyPIM™/EasyPACK ™ as well as the EconoPIM™/EconoPACK™ families have been developed to provide a cost-effective, compact design as well as simplified and reliable assembly. With these modules, we offer an optimized product generation for low and medium-power industrial drives.

The Easy family with its EasyPIM™, EasyPACK™ and EasyDUAL™ configurations covers the full power range from IC 6 A up to 200 A at 600 V, 650 V, and 1200 V. The modules are without base plates, and include the latest IGBT4 technology. The screw clamp provides a new, fast and reliable, low-cost mounting concept. This series has been extended to include the Easy1B and Easy2B sizes to offer more flexibility, with reduced height from 17 mm to 12 mm, and injected screw clamps for mounting.

The Econo family extends the power range from 15 A up to 300 A with nominal current at 600 V, 650 V, 1200 V and 1700 V. The available configurations are the well-known EconoPIM™ and EconoPACK™ series. The Econo housing features a copper base plate for optimized heat spread, and includes a thermistor (NTC). The Econo modules are available with solderable pins or PressFIT pins, and an increasing number of Econo modules are available with pre-applied TIM.

Besides the standard planar IGBT chip technology for low switching losses, saturation voltage and high-switching frequency, the Econo family also includes the optimized IGBT4 in 650 V, 1200 V and 1700 V. For ease of design, IGBTs with 10 µs short-circuit robustness are now available in 650 V, 1200 V and 1700 V in the same mechanical design. Selected Econo modules feature integrated shunts for accurate and cost-efficient current sensing.

Automotive qualified IGBT modules are also available. Please refer to the application section and www.infineon.com/automotive-igbt



www.infineon.com/easy
www.infineon.com/econo

CoolSiC™ silicon carbide MOSFETs

Deliver reliable and cost-effective top performance, and enables radically new product designs

Silicon carbide (SiC) opens up new degrees of freedom for designers to unseen levels of efficiency and system flexibility. In comparison to traditional silicon-based switches like IGBTs and MOSFETs, the SiC MOSFET offers a series of advantages. The Infineon CoolSiC™ MOSFETs maximize the advantages of silicon carbide, offering a high-performance product that also meets power electronics design requirements, like reliability and ease of use.

Some aspects of Infineon's SiC technology, like superior gate oxide reliability, excellent thermal behavior, advanced avalanche ruggedness and short circuit capabilities, contribute to the robustness of the device. Additional unique features, like 0 V turn-off VGS, wide VGS range, and the use of silicon MOSFET drivers and driving schemes make the CoolSiC™ MOSFETs easy to integrate and use. CoolSiC™ MOSFET products in 650 V, 1200 V and 1700 V target applications such as automotive, EV charging, photovoltaic inverters, battery charging, energy storage, motor drives, UPS, auxiliary power supplies and SMPS.

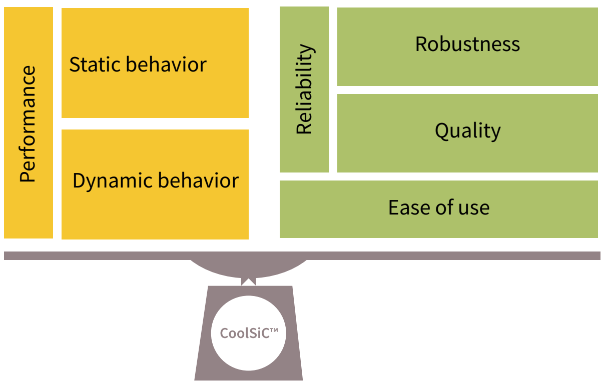
Key features

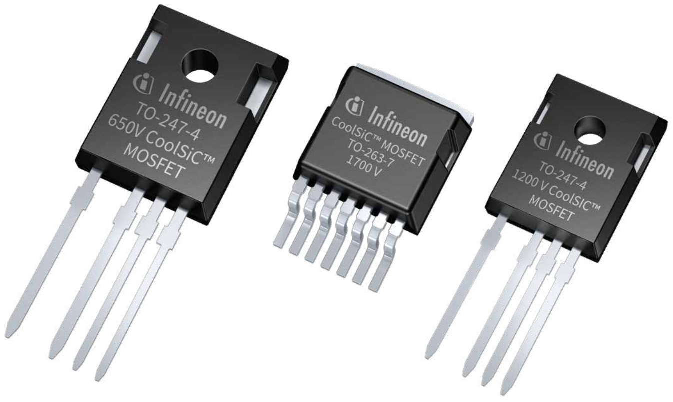
- Very low switching losses
- Superior gate-oxide reliability
- Threshold-free on-state characteristic
- Wide gate-source voltage range
- Benchmark gate threshold voltage, $V_{GS(th)} = 4.5$ V
- Fully controllable dV/dt
- Commutation robust body diode, ready for synchronous rectification

Key benefits

- Best-in-class system performance
- Efficiency improvement and reduced cooling effort
- Longer lifetime and higher reliability
- Enables higher frequency operation, allowing the increase in power density
- Reduction in system cost
- Ease of use

Leveraging SiC's material properties





Energy storage
UPS
Drives
EV-Charging
SMPS
Solar

www.infineon.com/coolsic-mosfet-discretes
www.infineon.com/SiCgd

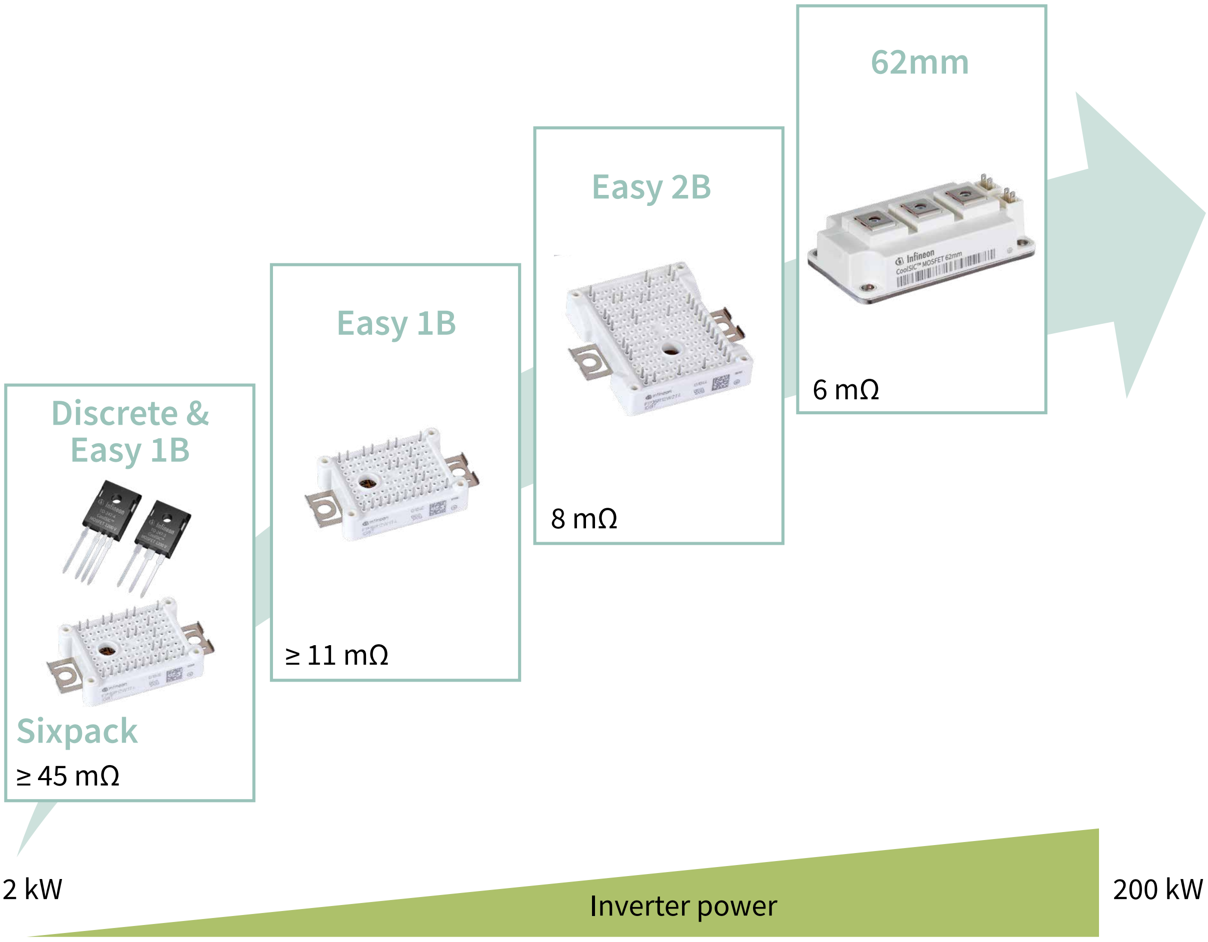
CoolSiC™ Silicon Carbide MOSFET Modules

Power modules with CoolSiC™ MOSFET open up new opportunities for inverter designers to realize never before seen levels of efficiency and power density. In addition, Silicon Carbide (SiC) is tailoring to application needs by different available topologies from 45 mOhm to 2 mOhm $R_{DS(on)}$.

Available in different configurations such as 3-level, dual, fourpack, sixpack or as booster, our 1200 V SiC MOSFET modules offer a superior gate oxide reliability enabled by state-of-the-art trench design, best in class switching and conduction losses.

Not only, can all EasyPACK™, EasyDUAL™, and 62 mm CoolSiC™ MOSFET power modules be ordered with pre-applied Thermal Interface Material (TIM), but additional features can be offered as well. For example Easy modules with a high-performance aluminum nitride (AlN) ceramic, that significantly improves the thermal performance of R_{thJH}.

Easy 1B (Sixpack, fourpack, booster, half-bridge)	**Easy 2B (3-Level, Fourpack, Half-bridge)**	**62 mm (Half-bridge)**
DF11MR12W1M1P_B11, DF23MR12W1M1_B11 DF23MR12W1M1P_B11, DF11MR12W1M1_B11 F4-23MR12W1M1_B11, F4-23MR12W1M1P_B11 F4-45MR12W1M1_B76, F4-23MR12W1M1_B76 FF23MR12W1M1P_B11, FF11MR12W1M1_B70 FF45MR12W1M1_B11, FF23MR12W1M1_B11 FF11MR12W1M1P_B11, FF08MR12W1MA1_B11A FF11MR12W1M1_B11, FS45MR12W1M1_B11	F3L11MR12W2M1_B74, F4-15MR12W2M1_B76 F4-11MR12W2M1_B76, FF8MR12W2M1P_B11 FF8MR12W2M1_B11, FF6MR12W2M1_B70 FF6MR12W2M1P_B11, FF6MR12W2M1_B11	FF2MR12KM1, FF2MR12KM1P FF3MR12KM1, FF3MR12KM1P FF6MR12KM1, FF6MR12KM1P



www.infineon.com/coolsic-mosfet-modules

+SiC

Silicon carbide MOSFET gate driver ICs

Ultra-fast switching 650 V to 2000 V power transistors such as CoolSiC™ SiC MOSFETs can be more easily handled by isolated gate driver solutions. Therefore, the following EiceDRIVER™ isolated gate drivers based on Infineon coreless transformer technology are recommended as most suitable. For a larger selection of isolated gate drivers, refer to the product portfolio overview section of this selection guide.

The following EiceDRIVER™ isolated gate drivers incorporate the most important key features for driving SiC MOSFET such as tight propagation delay matching, precise input filters, wide output supply voltage range, negative gate voltage capability, extended CMTI capability, Miller clamp, and DESAT protection.

Product family	Part number	Typ. current	VCC2-VEE2	UVLO	Prop. delay (accuracy)	CMTI	Other key features	Package
Achieve high efficiency and power density: Take advantage of low propagation delay and high CMTI								
1EDB 1-channel family	1EDB9275F	5 / 9 A	20 V	14.9 / 14.4 V	45 ns (+6 / -4 ns)	300 V/ns	Separate source/sink outputs, Fast start-up times and fast recovery, Basic isolation, UL 1577	DSO-8, 150 mil
	1EDB6275F			12.2 / 11.5 V				
2EDi 2-channel family	2EDR9259X* 2EDR9258X* 2EDR6258X*	5 / 9 A	20 V	14.9 / 15.4 V 14.9 / 15.4 V 12.5 / 11.5 V	38 ns (+9 / -5 ns)	150 V/ns	2EDi Gen.II, Dead-time control, Disable/ Enable, Reinforced isolation, UL 1577, VDE-11, IEC 62368-1, GB4943.1	DSO-14, 300mil
	2EDB9259Y*			14.9 / 15.4 V			2EDi Gen.II, Dead-time control, Basic isolation, UL 1577, GB4943.1	DSO-14, 150 mil
1EDN-TDI 1-channel family	1EDN6550B	4 / 8 A	20 V	12.2 / 11.5 V	45 ns (+10 / -7 ns)	N/A	Separate source/sink outputs	SOT23-6
	1EDN9550B			14.9 / 14.4 V				
Avoid parasitic turn-on: Take advantage of Miller Clamp options								
1ED Compact 1-channel family	1EDI20I12MF	4 A	20 V	12.7 / 10.5 V	300 ns	100 V/ns	Miller clamp, Functional isolation	DSO-8, 150 mil
	1EDI60N12AF	10 A	35 V	10 / 8 V	125 ns	100 V/ns	Separate source/sink outputs, Functional isolation	
X3 Compact 1-channel family	1ED31xxMC12H 1ED31xxMU12F	5.5 / 10 / 14 A	35 V	12.5 / 10.5 V 14.2 / 12 V	90 ns (+/- 7 ns)	200 V/ns	Miller clamp, Reinforced isolation, UL 1577 & VDE-11	DSO-8, 300 mil DSO-8, 150 mil
2L-SRC Compact 1-channel family	1ED32xxMC12H	10 / 18 A	35 V	12.5 / 10.4 V	110 ns (+/- 15 ns)	200 V/ns	Two-level slew-rate control, Miller clamp, Reinforced isolation, UL 1577 & VDE-11	DSO-8, 300 mil
Short-circuit protect your CoolSiC™: Take advantaqge of the fast & accurate DESAT protection								
1ED-F3 1-channel family	1ED332xMC12N	3 / 6 A	35 V	12.6 / 10.4 V 13.6 / 12.6 V	85 ns	300 V/ns	Miller clamp, Short circuit protection, soft-off, Reinforced isolation, UL 1577 & VDE-11	DSO-16, 300 mil
X3 Analog 1-channel family	1ED34x1MC12M	3 / 6 / 9 A	35 V	12.6 / 10.4 V	244 ns (+/- 30 ns)	200 V/ns	Analog configurable, fast & accurate short circuit protection and soft turn-off Miller clamp, Reinforced isolation, UL 1577 & VDE-11	DSO-16, 300 mil
X3 Digital 1-channel family	1ED38x0MC12M	3 / 6 / 9 A	35 V	12.6 / 10.4 V	244 ns (+/- 30 ns)	200 V/ns	Digital configurable (I2C), fast & accurate short circuit protection, Rich monitoring functionality (predictive maintenance) Miller clamp, Reinforced isolation, UL 1577 & VDE-11	DSO-16, 300 mil
2ED-F2 2-channel family	2ED020I12-F2	2.0 A	28 V	12.6 / 10.4 V	170 ns	50 V/ns	Miller clamp, Short circuit protection	DSO-36, 300mil

*Coming soon

www.infineon.com/gd-SiC

CoolGaN™ e-mode HEMTs

Tailor-made for the highest efficiency and power density in switch mode power supplies

In comparison to the next best silicon alternative, CoolGaN™ enables higher power density and the highest efficiency, especially in the partial load range, through novel topologies such as the CCM totem-pole PFC stage. GaN e-mode HEMT performance features a low reverse recovery charge and excellent dynamic performance in reverse conduction compared to silicon FET solutions. This enables more efficient operation at established frequencies and much higher frequency operation, improving power density by shrinking the size of passive components. CoolGaN™ enables doubled output power in a given energy storage slot size, freeing up space and realizing higher efficiency at the same time. Infineon's CoolGaN™ comes with industry-leading reliability. During the quality management process, it is not only the device that is thoroughly tested but also its behavior in the application environment. The performance of CoolGaN™ goes beyond other GaN products in the market.

Features

- Low output charge and gate charge
- No reverse recovery charge

Design benefits

- High power density, small and light design
- High efficiency in resonant circuits
- New topologies and current modulation
- Fast and (near-)lossless switching

Advantages

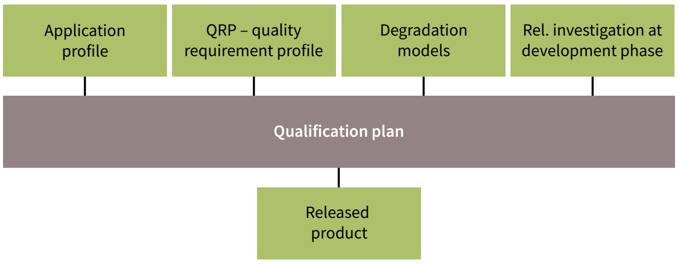
- Operational expenses (OPEX) and capital expenditure (CAPEX) reduction
- BOM and overall cost savings

Infineon leverages its unique portfolio of high- and low-voltage MOSFETs, gate-driver ICs and digital controllers to complement its CoolGaN™ product line, thus enabling full exploit for GaN benefits.

The highest quality

The qualification of GaN switches requires a dedicated approach, well above existing silicon standards

- Infineon qualifies GaN devices well beyond industry standards
- Application profiles are an integral part of the qualification process
- Failure models, based on accelerated test conditions, ensure target lifetime and quality are met
- Infineon sets the next level of wide bandgap quality



CoolGaN™ e-mode HEMTs overview

CoolGaN™ e-mode HEMTs

CoolGaN™ 600 V e-mode HEMTs

CoolGaN™ 400 V e-mode HEMTs

Single-channel functional and reinforced isolated gate-driver ICs for enhancement-mode GaN HEMTs

Perfect fit for CoolGaN™ e-mode HEMTs 600V

1EDF5673K

1EDF5673F

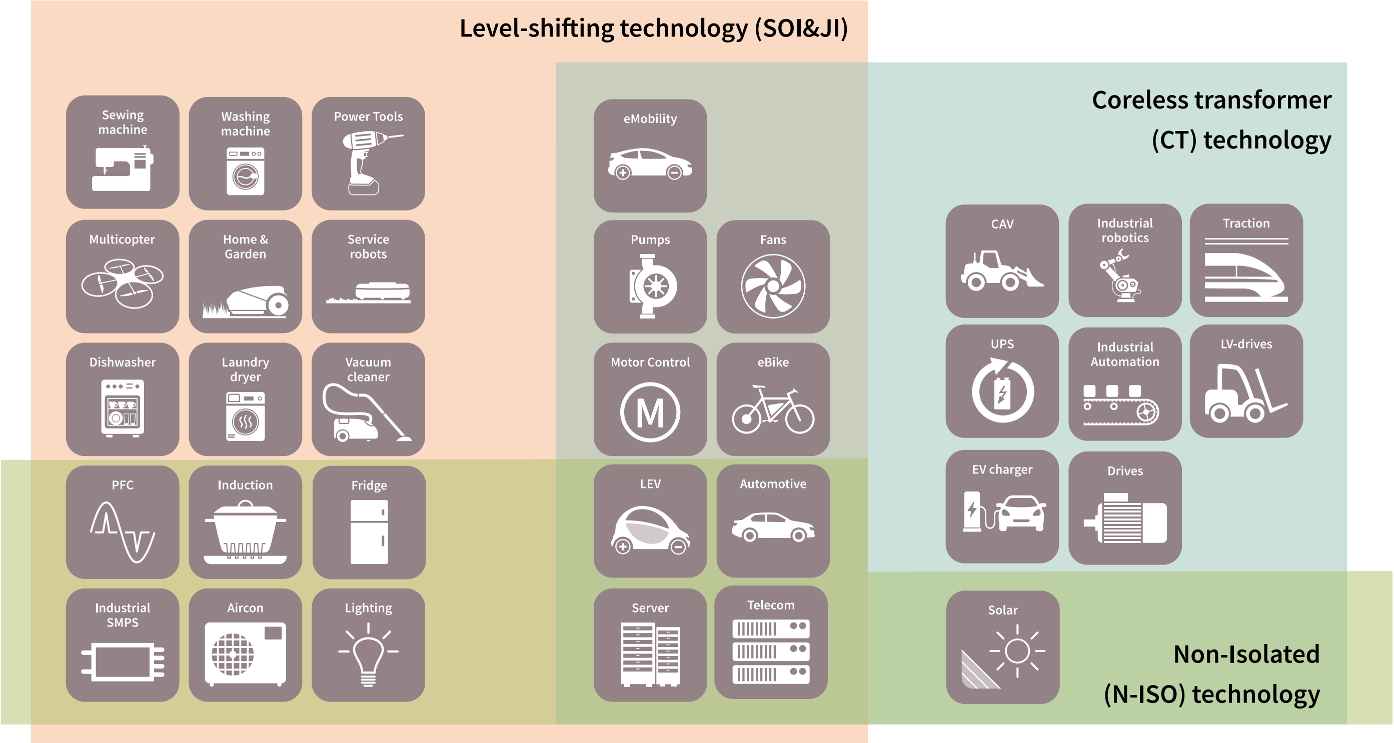
1EDS5663H

www.infineon.com/gan

Typical gate-driver applications

From product thinking to system understanding, Infineon enables total solutions which make generation, transmission and conversion of electrical energy more efficient and reliable.

The following pages describe typical applications using Infineon gate drivers and power switches.



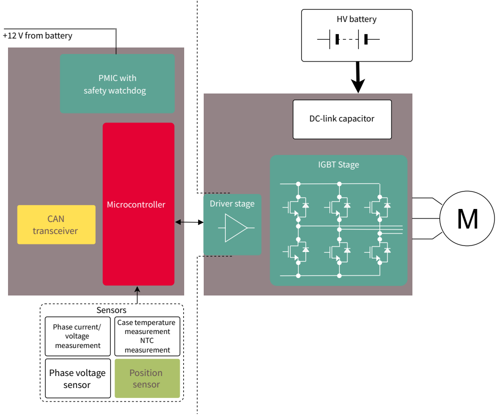
eMobility

Automotive electric drive train

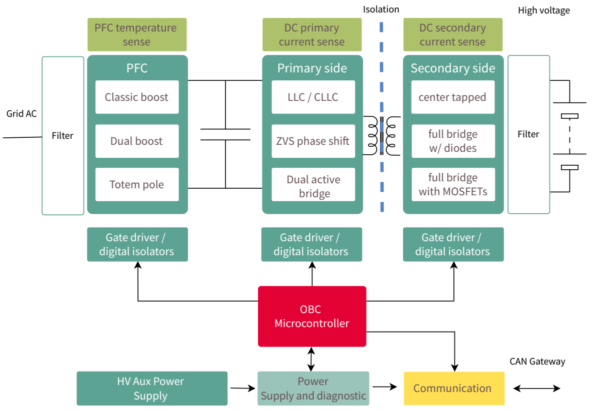
(Hybrid) electric vehicles applications

- On-board charger
- HV/LV DC-DC converter
- Auxiliary inverter
- Wireless in-cabin phone charging

Typical application diagram- main inverter



Typical application diagram- on-board charger



Within an electric drivetrain, the inverter controls the electric motor, captures energy released through regenerative breaking and feeds this back to the battery. As a result, the range of the vehicle is directly related to the efficiency of the traction inverter. Efficiency is also the key success factor for auxiliary applications. The Infineon EiceDRIVER™ gate driver family includes single and dual-channel automotive IGBT and SiC MOSFET driver ICs that provide galvanic isolation and bidirectional signal transmission. These products are ideal for automotive traction inverter systems where efficiency, space saving and functional safety are priorities.

Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Main Inverter & DCDC Converter boost HV/HV	1200 V	1-ch isolated	1EDI3020AS NEW	12 A	DSO-20	IGBT gate driver IC, ADC for Temperature Diode, ISO 26262-compliant for ASIL D on system level	HybridPACK™ (FS650R08A6P2, FS950R08A6P2B, FS380R12A6T4B) EasyPACK™ (FF300R08W2P2_B11A) IGBT TRENCHSTOP™ (AIKQ120N75CP2*, AIKQ200N75CP2*) (AIKW75N60CT, AIKQ120N60CT)
			1EDI3021AS NEW	12 A	DSO-20	IGBT gate driver IC, secondary side ASC, ISO 26262-compliant for ASIL D on system level	
			1EDI3023AS NEW	12 A	DSO-20	IGBT gate driver IC, ADC for NTC & DC-Link, ISO 26262-compliant for ASIL D on system level	
			1EDI2004AS	2 A	DSO-36	16-bit SPI interface (up to 2 MBaud) with daisy chain support, ISO 26262-compliant. Compatible with booster 1EBN1001AE	
			1EDI3030AS NEW	12 A	DSO-20	SiC MOS gate driver IC, ADC for Temperature Diode, ISO 26262-compliant for ASIL D on system level	CoolSiC™ HybridPACK™ (FS03MR12A6MA1B; FS05MR12A6MA1B) CoolSiC™ EasyPACK™ (FF08MR12W1MA1_B11A)
			1EDI3031AS NEW	12 A	DSO-20	SiC MOS gate driver IC, secondary side ASC, ISO 26262-compliant for ASIL D on system level	
			1EDI3033AS NEW	12 A	DSO-20	SiC MOS gate driver IC, ADC for NTC & DC-Link, ISO 26262-compliant for ASIL D on system level	
On-board charger & DC-DC converter	100 V	Half-bridge	AUIR2085STR	1 A	DSO-8	Simple primary side control solution, programmable switching frequency < 500 kHz, adjustable dead-time	IGBT TRENCHSTOP™ 5 (AIKW40N65DH5, AIKW50N65F5) CoolMOS™ CFD7A (IPBE65R115CFD7A, IPBE65R050CFD7A) CoolSiC™ 750 V (AIMBG75R063M1H*, AIMBG75R017M1H*) CoolSiC™ Hybrid (AIKW50N65RF5) EasyPACK™ IGBT (F4-75R07W1H3_B11A, FS75R07W2E3_B11A)
	200 V	Single low-side	AUIRS1170S	6 A	DSO-8	Secondary side high speed synchronous rectification controller, ccm operation with SYNC function, > 500 kHz, cycle by cycle MOT check	
	600 V	High and low-side	AUIRS2191S	3.5 A	DSO-16	Floating channel for bootstrap operation, negative transient voltage tolerance, UVLO , matched propagation delay	
Auxiliary drives (fans, pumps, HVAC, heat pump, PTC heater)	600 V		AUIRS21814S	2.3 A	DSO-14	Floating channel for bootstrap operation, negative transient voltage tolerance, UVLO , matched propagation delay	Gen Trench 6.2 IGBT (AUIRGP4062D(-E), AUIRGP4063D(-E)) Gen4 Planar IGBT (AUIRG4PC40S-E, AUIRG4PH50S, AUIRGDC0250) TRENCHSTOP™ IGBT (AIKW30N60CT, AIKW20N60CT, AIKW50N60CT) EasyPACK™ IGBT 3 (F4-75R07W1H3_B11A, FS75R07W2E3_B11A)
Wireless in-cabin phone charging	600 V	High and low-side	AUIRS2301S	3.5 A	DSO-8	Floating channel for bootstrap operation, negative transient voltage tolerance, UVLO , matched propagation delay	OptiMOS™ (IPG20N04S4L-11A, IPZ40N04S5L-4R8)

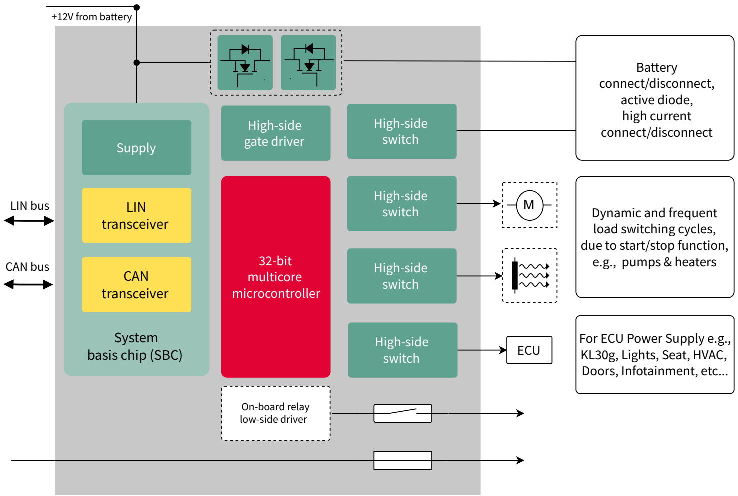
*Coming soon

Table provides representative products. For complete portfolio please visit www.Infineon.com

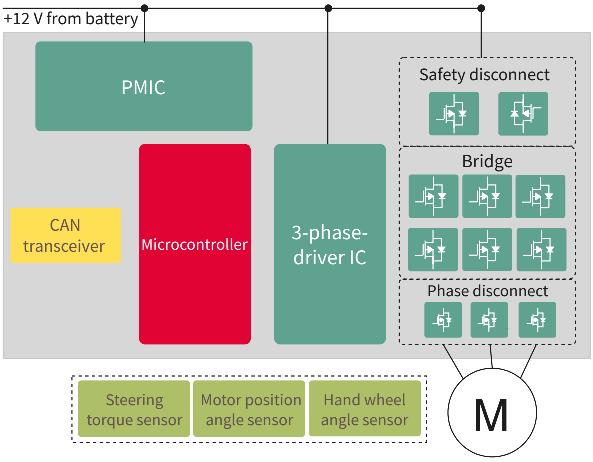
eMobility

Automotive low voltage drives

Power distribution box



System diagram electric power steering (EPS)



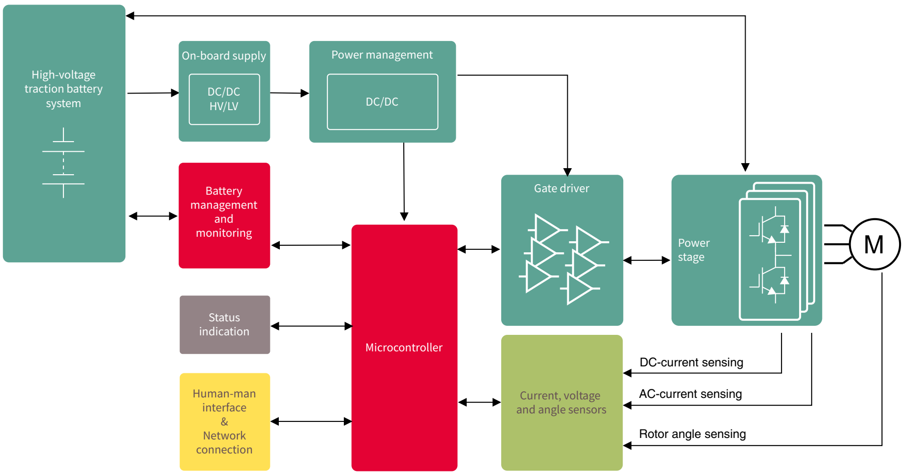
Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Battery protection switch, Input protection Switch (e.g. DC/DC), Q-Diode (e.g. Start /Stop) Load switch	65 V	Single high-side	AUIR3241STR	0.3/0.3 A	DSO-8	Support back to back MOSFET structure, static operation, low quiescent current in ON-Status, back to back, input active high	OptiMOS™ 6 (IAUC120N04S6L, IAUA250N04S6N) OptiMOS™-T2 (IPLU300N04S4)
			AUIR3242STR	0.3/0.3 A	DSO-8	Support back to back MOSFET structure, static operation, low quiescent current in ON-Status, back to back, input active low	
	75 V	Dual high-side	2ED2410-EM* NEW	0.18/1.4 A	TSDSO-24	Support back to back MOSFET structures, static operation, low quiescent current in idle mode, adjustable I-t wire protection, overcurrent and short-circuit protection	
	105 V		2ED4820-EM NEW	0.3/1.0 A	TSDSO-24	Support back to back MOSFET structures, SPI Interface, static operation, adjustable overcurrent and short-circuit protection	OptiMOS™ 5 (IAUA250N08S5N018, IAUS300N10S5N)
Cooling Fans, Water Pump, Oil Pump, HVAC Compressor, CAV	90 V	Three-Phase	TLE9180D-21QK	2 A	LQFP-64	Advanced gate driver IC dedicated for high current 3 phase motor drive applications up to 48 V. The 21QK has 2 whereas the 31QK has 3 current sense amplifiers.	OptiMOS™ 5 (IAUA180N08S5N026, IAUA250N08S5N018, IAUA170N10S5N031, IAUA210N10S5N024)
			TLE9180D-31QK	2 A			
	28 V		TLE9563-3QX	0.15 A	VQFN-48	Multifunctional system IC with integrated power supply, communication interfaces, multiple half-bridges.	OptiMOS™ 6 (IAUC100N04S6N028, IAUC45N04S6N070H)
			TLE9564QX	0.15 A			
Door module, Power lift gate, Power sliding doors, Seat control module, Seatbelt pretension, Steering column lock, Sunroof module	28 V	2 x Half-bridges	TLE9560-3QX	0.1 A			
		4 x Half-bridges	TLE9561QX	0.1 A			
			TLE9561-3QX	0.1 A			
			TLE9562QX	0.1 A			
			TLE9562-3QX	0.1 A			
		4/8 x half-bridges	TLE92108-232QX	0.1 A	VQFN-48	2 x Currnet Sense Amplifier, 3 x PWM inputs, Brake mode, adaptive MOSFET control	OptiMOS™ 6 (IAUC100N04S6N028, IAUC45N04S6N070H)
			TLE92108-231QX	0.1 A		2 x Currnet Sense Amplifier, 3 x PWM inputs, adaptive MOSFET control	
			TLE92104-232QX	0.1 A		2 x Currnet Sense Amplifier, 3 x PWM inputs, Brake mode, adaptive MOSFET control	
			TLE92104-131QX	0.1 A		1 x Currnet Sense Amplifier, 3 x PWM inputs, adaptive MOSFET control	

*Coming soon

Table provides representative products. For complete portfolio please visit www.Infineon.com

CAV



Compactness, reliability and efficiency. These factors, along with safety and robustness, are what distinguish successful powertrain inverter for truck and agricultural vehicle designs from the rest. A scalable system level solution that reduces the time to market and the total cost of ownership is key.

Infineon offers all powertrain components from one source. Be it for controls, drivers or power electronics. Benefit from our extensive application know-how and comprehensive product portfolio of high-quality semiconductors, including IGBT stack, IGBT modules, discrete IGBT and gate drivers. We do all we can to ensure you bring a reliable, cost-effective power inverter for truck to market.

CAV applications

- Commercial vehicles
- Construction vehicles
- Agricultural vehicles

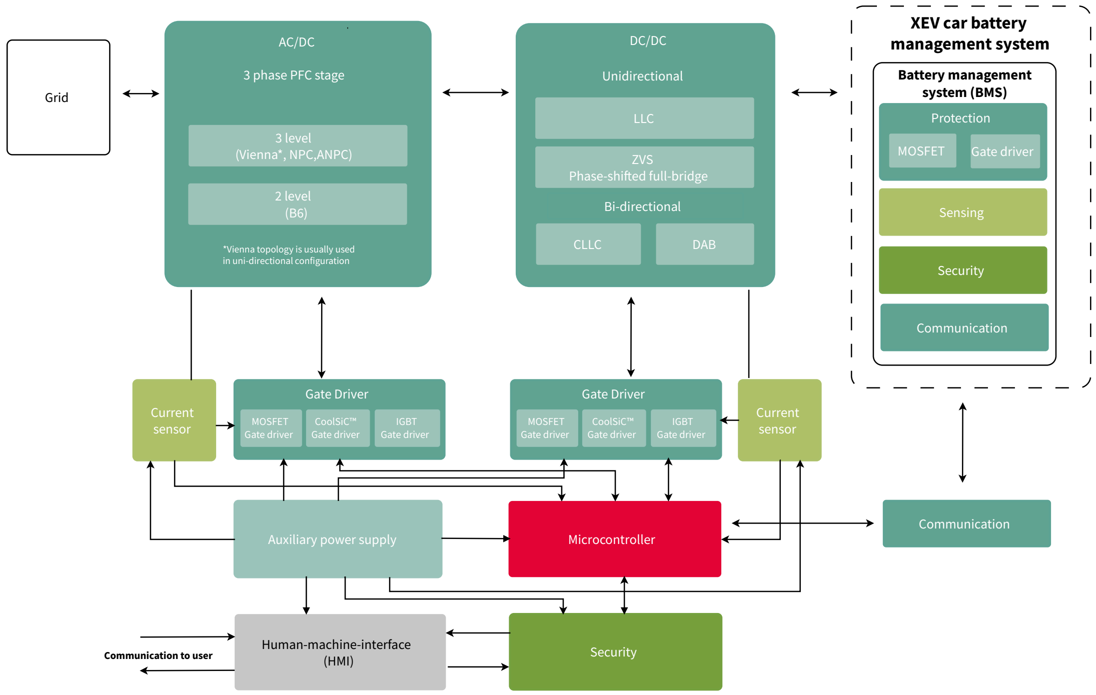
Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Auxiliary Inverters	600 V	Half-bridge	2EDL23N06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	TRENCHSTOP™ IGBT+Diode (IKW40N65ET7, IKB40N65ES5) EasyPACK™ 1B module (FS20R06W1E3_B11)
	650 V		2ED2182S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	1200 V	2-ch isolated	2ED020I12-F2	2/2 A	DSO-36	EiceDRIVER™ Enhanced 2ED-F2 with DESAT and Miller clamp	CoolSiC™ SiC MOSFET module (FS45MR12W1M1_B11, FF8MR12W2M1_B11) EasyPACK™ 1B module (FS25R12W1T7_B11) EasyPACK™ 2B module (FS50R12W2T7, FS75R12W2T7_B11) EconoPACK™ 2/3 module (FS50R12KT4_B15)
	1200 V	Three-phase	6ED2230S12T	0.35/0.65 A	DSO-24	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	1200 V	Half-bridge	IR2214SS	2/3 A	SSOP-24	DESAT, soft-off, two stage turn on, fault reporting, Synchronization	
	1200 V	Three-phase	IR2233S	0.25/0.5 A	DSO-28	OCP, Enable, fault reporting	
Powertrain Inverter	1200 V	1-ch isolated	1EDB6275F NEW	5.4/9.8 A	DSO-8	EiceDRIVER™ 1EDi with basic isolation (3kV UL 1577)	EconoPACK™ 2/3/4 module (FS150R12N2T7, IFS200B12N3E4_B37) EconoPack™+ module (FS300R12OE4, FS450R12OE4) EconoDUAL™ 3 module (FF300R12ME7_B11, FF900R12ME7_B11) PrimePACK™ 2 module (FF1200R12IE5P) PrimePACK™ 3+ module (FR900R12IP4D) HybridPACK™ Drive module (FS380R12A6T4B, FS03MR12A6MA1B)
	1200 V		1EDI60I12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
	2300 V		1ED3124MC12H NEW	13.5/14 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with separate output	
	2300 V		1ED3241MC12H NEW	18/18 A	DSO-8 300mil	EiceDRIVER™ 2L-SRC Compact with 2-level slew rate control	
	2300 V		1ED3321MC12N NEW	6/8.5 A	DSO-16	EiceDRIVER™ Enhanced 1ED-F3 with DESAT, soft-off and Miller clamp	
	2300 V		1ED3491MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Analog with programmable DESAT, soft-off and Miller clamp	
	2300 V		1ED3890MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Digital with I2C configurability, DESAT, soft-off and Miller clamp	

Table provides representative products. For complete portfolio please visit www.Infineon.com

EV charger

EV charging



As electro-mobility increasingly becomes part of our daily lives, there is a growing need for more efficient charging solutions. Fast EV-charging stations equipped with powerful DC EV chargers are today's answer to the challenge. DC EV chargers are an attractive choice, as they allow much faster charging than the standard AC EV chargers that many EV owners use. Today, a DC charger with 150 kW can supply an EV with a 200 km charge in around 15 minutes. As fast-charging and battery technologies continue to evolve and improve, experts anticipate that charging time will drop even further.

The unique expertise in e-mobility and power supplies makes Infineon the natural partner for advancing DC electric vehicle charging in terms of efficiency, performance, optimal cost and innovation.

Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
DC-DC (<22 kW)	600 V	High and low-side	IRS2186S	4/4 A	DSO-8	High current for high power and fast switching frequency	CoolMOS™ MOSFET (IPW60R018CFD7, IPW60R037CSFD) CoolSiC™ MOSFET (IMW65R027M1H, IMZ120R030M1H)
	650 V		2ED2110S06M NEW	2.5/2.5 A	DSO-16 300 mil	Infineon SOI, integrated BSD, fast level-shift, Shutdown, separate VSS/COM	
	650 V		2ED2181S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	1200 V	1-ch isolated	1EDI20N12AF	4/3.5 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
	1200 V	High and low-side	IR2213S	2/2.5 A	DSO-16 300 mil	Shutdown and Separate power supply	
	1200 V	Half-bridge	IR2214SS	2/3 A	SSOP-24	DESAT, soft-off, two stage turn on, fault reporting, Synchronization	
DC-DC (<50 kW)	1200 V	1-ch isolated	1EDI60N12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	CoolMOS™ MOSFET (IPW60R018CFD7, IPW60R037CSFD) CoolSiC™ Module (F4-23MR12W1M1P_B11, FF45MR12W1M1_B11)
	1200 V	2-ch isolated	2EDR8259H*	4/8 A	DSO-16 300 mil	EiceDRIVER™ 2EDi with reinforced isolation	
	2300 V	1-ch isolated	1ED3122MC12H NEW	10/9 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with Miller clamp	
DC-DC (<150 kW)	2300 V		1ED3124MC12H NEW	13.5/14 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with separate output	CoolMOS™ MOSFET (IPW60R018CFD7) CoolSiC™ Module (FF8MR12W1M1_B11, FF6MR12W2M1P_B11)
	2300 V		1ED3241MC12H NEW	18/18 A	DSO-8 300mil	EiceDRIVER™ 2L-SRC Compact with 2-level slew rate control	
	2300 V		1ED3321MC12N NEW	6/8.5 A	DSO-16	EiceDRIVER™ Enhanced 1ED-F3 with DESAT, soft-off and Miller clamp	
	2300 V		1ED3890MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Digital with I2C configurability, DESAT, soft-off and Miller clamp	
Single-end boost PFC	25 V	1-ch non-isolated	1EDN8511B	4/8 A	SOT23-6	Separate output, 19 ns propagation delay	CoolMOS™ MOSFET P7 (IPW60R037P7, IPW60R024P7) 650 V CoolSiC™ (IMW65R048M1H, IMW65R027M1H) 650 V TRENCHSTOP™ IGBT (IKW50N65EH5) 1200 V CoolSiC™ (IMW120R045M1, IMW120R030M1H) 1200 V IGBT HighSpeed 3 (IGW40N120H3, IGW25N120H3) CoolSiC™ Diode (IDH20G65C5, IDWD20G120C5)
	25 V		1ED44171N01B*	2.6/2.6 A	SOT23-5	Enable, programmable fault clear time, UVLO	
	25 V		1ED44175N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V		1ED44176N01F	0.8/1.75 A	DSO-8	Fast, accurate (±5%) OCP, fault reporting, Enable, positive current sensing, separate VSS / COM	
	25 V		IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
	200 V		1EDN8550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static ground-shift robustness	
Interleaved boost PFC	22 V	2-ch non-isolated	2EDN8534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	
	24 V		2ED24427N01F NEW	10/10 A	DSO-8 with power pad	Enable, Low $R_{DS(on)}$ outputs, thermal pad	
	25 V		IRS4427S	2.3/3.3 A	DSO-8	Matched propagation delay	
Totem pole PFC	650 V	High and low-side	2ED2181S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	600 V CoolMOS™ CFD7 MOSFET (IPP60R070CFD7, IPP60R280CFD7, IPT60R035CFD7) EasyPACK™ IGBT Module (FS50R12W1T7_B11, FS100R12W2T7)
	1200 V	2-ch isolated	2EDB8259F*	4/8 A	DSO-16	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
	1200 V		2EDB8259Y*	5/9 A	DSO-14	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
Vienna rectifier	22 V	2-ch non-isolated	2EDN7534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	650 V CoolMOS™ C7 MOSFET (IPP65R045C7, IPW65R019C7, IPL65R070C7) 600 V CoolMOS™ P7 MOSFET (IPP60R060P7, IPP60R360P7, IPW60R024P7) CoolSiC™ Module (F3L15MR12W2M1_B69, F3L11MR12W2M1_B65)
	1200 V	1-ch isolated	1EDB6275F NEW	5/9 A	DSO-8	EiceDRIVER™ 1EDB with basic isolation (3kV UL 1577)	
	1200 V		1EDI60N12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	

*Coming soon

Table provides representative products. For complete portfolio please visit www.Infineon.com

Drives

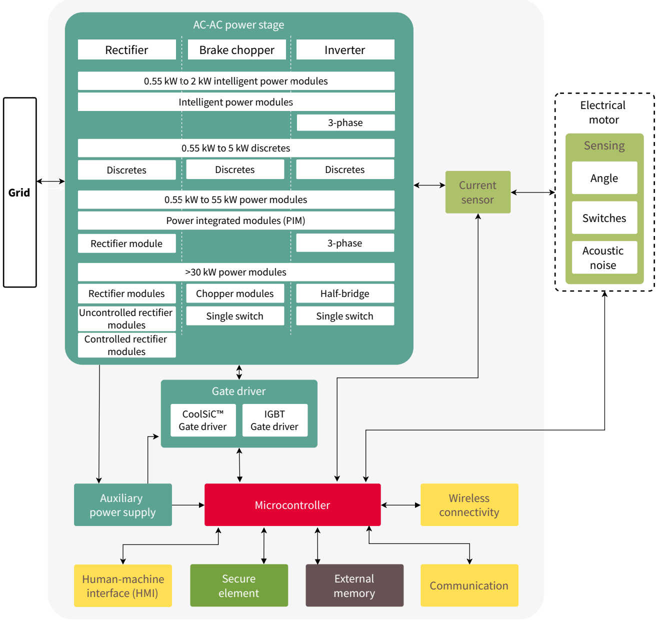
Industrial drives

Electronic speed-control systems for energy and performance gains

A low-voltage drive covers a voltage range from 100 to 690 Volt and power from several watts to megawatts. The drive system is connected to the grid and generates a 3-phase voltage which is variable in amplitude and frequency. This enables control of the electrical motor in torque and speed. Our broad portfolio of semiconductor modules enables you to design low-voltage drives that help to increase process productivity as well as energy efficiency, and furthermore reduce maintenance costs.

Drive applications

- Commercial HVAC
- General purpose drives
- Elevators/escalators
- Heavy duty drives (<200 kW)
- Commercial sewing machines
- Fans and pumps (PFC, inverter)
- Servo drives
- Robotics
- Forklift trucks (hydraulic pump inverter, motor inverter)
- Stepper motors



Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Inverter (<2.2 kW)	160 V	High and low-side	2ED2732S01G*	1/2 A	DFN10 3x3mm	Infineon SOI, integrated BSD, separate VSS/ COM, thermal pad	StrongIRFET™ (IRF200P222)
	160 V	Half-bridge	2ED2748S01G*	4/8 A	DFN10 3x3mm	Infineon SOI, integrated BSD, separate VSS/ COM, thermal pad	
	160 V	Three-phase	6ED2742S01Q*	1/2 A	QFN32 5x5mm	Infineon SOI, integrated BSD, PMU, trickle charge pumps, programmable OCP, and current sense amp, RFE	
	200 V	Half-bridge	IRS2007S	0.29/0.6 A	DSO-8	VCC & VBS UVLO, matched propagation delay	
	600 V		2EDL23I06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	StrongIRFET™ (IRF250P224, IRF300P226) TRENCHSTOP™ IGBT+Diode (IKW40N65ET7, IKB40N65ES5) EasyPIM™ 1B/2B module (FP10R06W1E3_B11, FB30R06W1E3) EasyPACK™ 1B module (FS20R06W1E3_B11)
	600 V	Three-phase	6EDL04I06PT	0.165/ 0.375A	DSO-28 300 mil	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	600 V	Single high-side	IRS21271S	0.29/0.6 A	DSO-8	OCP, fault reporting	
	600 V	High and low-side	IRS2186S	4/4 A	DSO-8	High current for high power and fast switching frequency	
	650 V		2ED2110S06M NEW	2.5/2.5 A	DSO-16 300 mil	Infineon SOI, integrated BSD, fast level-shift, Shutdown, separate VSS/COM	
	650 V		2ED21814S06J NEW	2.5/2.5 A	DSO-14	Infineon SOI, integrated BSD, separate VSS/ COM	
	650 V	Half-bridge	2ED2182S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	1200 V	Three-phase	6ED2230S12T	0.35/0.65 A	DSO-24	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	TRENCHSTOP™ IGBT+Diode (IKW08T120, IKQ40N120CT2) EasyPIM™ 1B/2B module (FP10R12W1T7_B11, FP25R12W2T7) EasyPACK™ 1B/2B module (FS25R12W1T7_B11) EconoPIM™ 2 module (FP35R12N2T7_B11)
	1200 V	Half-bridge	IR2214SS	2/3 A	SSOP-24	DESAT, soft-off, two stage turn on, fault reporting, Synchronization	
	1200 V	Three-phase	IR2233S	0.25/0.5 A	DSO-28	OCP, Enable, fault reporting	
Inverter (<7.5 kW)	1200 V	1-ch isolated	1EDI20I12AF	4/3.5 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	CoolSiC™ SiC MOSFET (IMZ120R045M1, IMW120R090M1H) TRENCHSTOP™ IGBT+Diode (IKW40N120T2, IKQ75N120CT2) EasyPIM™ 1B/2B module (FP15R12W1T7_B11, FP35R12W2T7_B11) EasyPACK™ 1B module (FS25R12W1T7_B11, FS50R12W1T7) EconoPIM™ 2 module (FP25R12KT4_B15, FP50R12KT4G_B15) EconoPACK™ 2/3 module (FS50R12KT4_B15)
	1200 V		1EDI20I12MF	4.4/4.1 A	DSO-8	EiceDRIVER™ 1ED Compact with Miller clamp	
	1200 V	Half-bridge	2ED020I12-FI	1.5/2.5 A	DSO-18	EiceDRIVER™ Enhanced 2ED-FI with OPAMP and comparator (isolation only on the high side)	
	1200 V	Three-phase	6ED2230S12T	0.35/0.65 A	DSO-24	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	

*Coming soon

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Drives

Industrial drives

Electronic speed-control systems for energy and performance gains

Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Inverter (<22 kW)	1200 V	1-ch isolated	1EDI60I12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	CoolSiC™ SiC MOSFET (IMZ120R030M1H, IMW120R045M1) EasyPACK™ 2B module (FS50R12W2T7, FS75R12W2T7_B11) EconoPIM™ 2 module (FP50R12N2T7_B11, FP75R12N2T7) EconoPACK™ 2/3 module (FS75R12KT4_B15)
	1200 V	2-ch isolated	2ED020I12-F2	2/2 A	DSO-36	EiceDRIVER™ Enhanced 2ED-F2 with DESAT and Miller clamp	
	2300 V	1-ch isolated	1ED3321MC12N NEW	6/8.5 A	DSO-16	EiceDRIVER™ Enhanced 1ED-F3 with DESAT, soft-off and Miller clamp	
Inverter (<75 kW)	2300 V		1ED3122MC12H NEW	10/9 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with Miller clamp	CoolSiC™ SiC MOSFET (IMZ120R030M1H) EasyPACK™ 2B module (FS100R12W2T7) EconoPIM™ 2 module (FP100R12N2T7, FP150R12N3T7) EconoPACK™ 2/3 module (FS150R12N2T7) 34 mm module (FF50R12RT4, FF15012RT4)
	2300 V		1ED3321MC12N NEW	6/6 A	DSO-16	EiceDRIVER™ Enhanced 1ED-F3 with DESAT, soft-off and Miller clamp	
	2300 V		1ED3491MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Analog with programmable DESAT, soft-off and Miller clamp	
Inverter (<250 kW)	2300 V		1ED3124MC12H NEW	13.5/14 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with separate output	CoolSiC™ SiC MOSFET module (FF11MR12W1M1_B11, FF6MR12W2M1_B11) EconoPIM™ 2/3 module (FP150R12N3T7, FP200R12N3T7) EconoPACK™ 2/3/4 module (FS150R12N2T7, IFS200B12N3E4_B37) EconoDUAL™ 3 module (FF300R12ME7_B11) EconoPACK™+ module (FS300R12OE4, FS450R12OE4) 62 mm module (FF300R12KE4)
	2300 V		1ED3241MC12H NEW	18/18 A	DSO-8 300mil	EiceDRIVER™ 2L-SRC Compact with 2-level slew rate control	
	2300 V		1ED3890MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Digital with I2C configurability, DESAT, soft-off and Miller clamp	
Single-end boost PFC	22 V	1-ch non-isolated	1EDN8511B	4/8 A	SOT23-6	Separate output, 19 ns propagation delay	TRENCHSTOP™ IGBT+Diode (IKP15N65H5, IKW75N65EH5) Rapid Diode (IDW30E65D1, IDW60C65D1) CoolSiC™ Schottky Diode (IDH10G65C6, IDW40G65C5) CoolMOS™ MOSFET (IPW60R060P7, IPP60R360P7) CIPOS™ Mini (IFCM15S60GD, IFCM10P60GD)
	25 V		1ED44171N01B*	2.6/2.6 A	SOT23-5	Enable, programmable fault clear time, UVLO	
	25 V		1ED44175N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V		1ED44176N01F	0.8/1.75 A	DSO-8	Fast, accurate (±5%) OCP, fault reporting, Enable, positive current sensing, separate VSS / COM	
	25 V		IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
Interleaved boost PFC	22 V	2-ch non-isolated	2EDN8534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	
	24 V		2ED24427N01F NEW	10/10 A	DSO-8 with power pad	Enable, Low $R_{DS(on)}$ outputs, thermal pad	
	25 V		IRS4427S	2.3/3.3 A	DSO-8	Matched propagation delay	
SMPS (<3 kW)	600 V	High and low-side	IRS2186S	4/4 A	DSO-8	High current for high power and fast switching frequency	TRENCHSTOP™ IGBT+Diode (IKW30N65F5, IKB40N65EF5) CoolMOS™ MOSFET P7 (IPW60R060P7, IPP60R360P7) CoolMOS™ MOSFET C7 (IPZ65R019C7, IPW65R190C7)
	650 V		2ED2110S06M NEW	2.5/2.5 A	DSO-16 300 mil	Infineon SOI, integrated BSD, fast level-shift, Shutdown, separate VSS/COM	
	650 V		2ED21814S06J NEW	2.5/2.5 A	DSO-14	Infineon SOI, integrated BSD, separate VSS/ COM	
	650 V	Half-bridge	2ED2182S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	1200 V	1-ch isolated	1EDI60N12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
Brake chopper (<3.5 kW)	25 V	1-ch non-isolated	1ED44171N01B*	2.6/2.6 A	SOT23-5	Enable, programmable fault clear time, UVLO	TRENCHSTOP™ IGBT+Diode (IKW40N120T2, IKQ75N120CT2)
	25 V		IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
	1200 V	1-ch isolated	1EDI60I12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
	2300 V		1ED3121MC12H NEW	5.5/5.5 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with separate output	

*Coming soon

Table provides representative products. For complete portfolio please visit www.Infineon.com

Light electric vehicles (LEV)

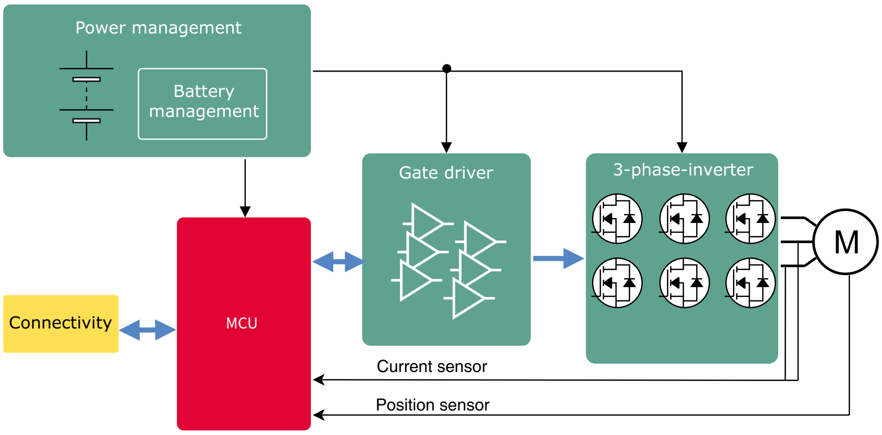
LEV applications

Low power LEV (< 3 kW)

- E-scooters (standing, self-balancing and folding types)
- E-bikes
- E-rickshaws, other e-three-wheelers

High power LEV (>3 kW)

- E-forklifts
- Light utility vehicles (LUVs)
- Low speed electric vehicles (LSEVs / micro EVs)
- E-scooters and E-motorbikes
- E-golf carts



Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/sink current typ.	Packages	Description	Suitable power switches and modules
Motor Inverter <3kW (<48 V battery)	60 V	Three-phase	6EDL7141 NEW	1.5/1.5 A	VQFN-48 7x7mm	Fully programmable, integrated power supplies and current sense amplifiers, slew rate control, protection features	60 V StrongIRFET™ (IRFS7530, IRF60SC241) 60 V OptiMOS™ 5 MOSFET (IPTG007N06NM5, IPB010N06N, IST011N06NM5, BSC012N06NS) 75 V StrongIRFET™ (IRFB7730, BSC036NE7NS3G)
	160 V	High and low-side	2ED2732S01G*	1/2 A	DFN10 3x3mm	SOI, integrated BSD, UVLO, separate VSS/COM, thermal pad	
	160 V	Three-phase	6ED2742S01Q*	1/2 A	QFN32 5x5mm	SOI, integrated BSD, PMU, 100% DC w. trickle charge pump, programmable OCP w. select gain, CS amp, RFE	
	200 V		6EDL04N02PR	0.165/ 0.375 A	TSSOP-28	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	200 V	High and low-side	IRS2005S	0.29/0.6 A	DSO-8	UVLO, MTON/OFF,max=50ns, 3.3V-15V input	
	200 V		IRS2011S	1/1 A	DSO-8	UVLO, MTON/OFF,max=20ns, 3.3V-5V input	
	600 V		2EDL05N06PF	0.36/0.7 A	DSO-8	SOI, UVLO, MTON/OFF,max=60ns, 3.3-15V input, BSD	
	600 V	Three-phase	6EDL04N06PT	0.165/ 0.375 A	DSO-28 300 mil	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	600 V	Single high-side	IRS21271S	0.2/0.42 A	DSO-8	UVLO, OCP, 3-15V input, fault reporting	
Motor Inverter 3-10kW (48-96 V Battery)	160 V	High and low-side	2ED2738S01G*	4/8 A	DFN10 3x3mm	SOI, integrated BSD, UVLO, separate VSS/COM, thermal pad	80 V OptiMOS™ 5 MOSFET (IPT010N08NM5, IPTG011N08NM5, IPB015N08N5, BSC019N08NS5, IST019N-08NM5) 100 V IR MOSFET™ (IRLS4030, IRF100B201) 100 V StrongIRFET™ 2 (IPP026N10NF2S, IPA030N10NF2S) 100 V OptiMOS™ 5 MOSFET (IPTG014N10NM5, IPTG018N10NM5, IPTC015N10NM5, IPB017N10N5, IST026N10NM5, BSC027N10NS5) 100 V OptiMOS™ 6 MOSFET (ISC022N10NM6)
	200 V	1-ch non-isolated	1EDN8550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static & ± 150V dynamic ground-shift robustness, separate SRC/SNK output pins	
	500 V	High and low-side	IRS2110S	2/2 A	DSO-16W	MTON/OFF,max=10ns, Separate power and logic ground, SD pin, 3-20V input	
	600 V		2EDL23N06PJ	2.3/2.8 A	DSO-14	3.3 V-15 V input, -100 V transient , PGND, SOI, integrated BSD, OCP, UVLO, Enable, fault reporting	
	600 V		IRS21867S	4/4 A	DSO-8	3-5 V input, MTON/OFF,max=35ns, UVLO, neg. transient robust	
	650 V		2ED2181S06F NEW	2.5/2.5 A	DSO-8	SOI, integrated BSD, 3.3-15V input, MTON/OFF, max=35ns, -100V transient	
	650 V		2ED2181S06J NEW	2.5/2.5 A	DSO-14	SOI, integrated BSD, 3.3-15V input, MTON/OFF, max=35ns, -100V transient, separate logic and power ground	
Motor Inverter >10 kW (>96 V Battery)	1200 V	1-ch isolated	1EDB8275F NEW	5/9 A	DSO-8	3kV basic isolation w. CT technology, (UL1577), separate SRC/SNK output, UVLO (4 types), CMTI > 300 V/ns	150 V IR MOSFET™ MOSFET (IRFB4115) 150 V OptiMOS™ 5 MOSFET (IPB044N15N5, IPT039N15N5) 200 V StrongIRFET™ (IRF200S234) 200 V OptiMOS™ 3 MOSFET (IPB107N20N3G, IPTG111N20NM3FD)
	1200 V		1EDI60N12AF	10/9.4 A	DSO-8	Short Circuit Clamping, Active Shut-Down, UVLO, separate SRC/SNK output , 3.3-15V input	
	1200 V	2-ch isolated	2EDB8259F*	5/9 A	DSO-16	3kV basic isolation w. CT technology (UL1577), dead-time control (DTC) and STP, UVLO (4 types), CMTI > 150 V/ns	
	1200 V		2EDB8259Y*	5/9 A	DSO-14		
	2300 V	1-ch isolated	1ED3121MC12H NEW	5.5/5.5 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with separate output	

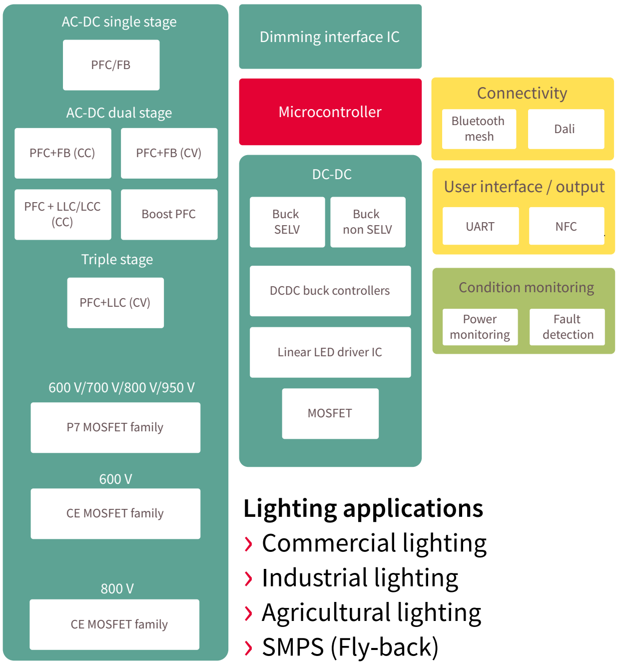
*Coming soon

Table provides representative products. For complete portfolio please visit www.Infineon.com

LEV

Lighting

LED applications are often powered by an AC-DC supply. Some of those are loosely regulated, or not regulated at all. Since the LED drivers' purpose is to control the current flow through the LED, this results in the need for a LED driver to provide constant current or constant voltage to the LEDs. Regardless of the many functions such as communication required by LED lighting, the development of the power supply block is, where several functions are concentrated, a key point. LED lighting power supply units and LED driver design are required to offer maximum efficiency, power factor (PFC), total harmonic distortion (THD), and are subject to specific requirements regarding safety (EN 61347-1/-2-13), EMC (EN 55015), harmonic current emissions, and further specific requirements of standards such as UL and IEC.



Lighting applications

- Commercial lighting
- Industrial lighting
- Agricultural lighting
- SMPS (Fly-back)
- SMPS (Half-bridge)
- SMPS (High-side buck)
- SMPS (Sync buck)

Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
PFC	22 V	1-ch non-isolated	1EDN8511B	4/8 A	SOT23-6	Separate output, 19 ns propagation delay	600 V CoolMOS™ P7 MOSFET (IPW60R180P7, IPD60R180P7, IPN60R360P7S, IPP60R180P7) 700 V CoolMOS™ P7 MOSFET (IPN70R360P7S, IPD70R360P7S, IPA70R360P7S, IPAN70R360P7S) 800 V CoolMOS™ P7 MOSFET (IPN80R600P7, IPD80R280P7, IPP80R280P7, IPA80R280P7) 950 V CoolMOS™ P7 MOSFET (IPN95R1K2P7, IPD95R450P7, IPA95R450P7, IPU95R450P7)
	25 V		1ED44171N01B*	2.6/2.6 A	SOT23-5	Enable, programmable fault clear time, UVLO	
	25 V		1ED44173N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V		1ED44176N01F	0.8/1.75 A	DSO-8	Fast, accurate (±5%) OCP, fault reporting, Enable, positive current sensing, separate VSS / COM	
	25 V		IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
	200 V		1EDN7550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static ground-shift robustness	
	22 V	2-ch non-isolated	2EDN8534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	
	24 V		2ED24427N01F NEW	10/10 A	DSO-8 with power pad	Enable, Low $R_{DS(on)}$ outputs, thermal pad	
	25 V		IRS4427S	2.3/3.3 A	DSO-8	Matched propagation delay	
HS buck (<100 W)	100 V	Single high-side	IRS10752L	0.16/0.24 A	SOT23-6	UVLO on low-side and high-side	600 V CoolMOS™ P7 MOSFET (IPW60R180P7, IPD60R180P7, IPN60R360P7S, IPP60R180P7)
	200 V	1-ch non-isolated	1EDN7550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static ground-shift robustness	
	200 V	Single high-side	IRS20752L	0.16/0.24 A	SOT23-6	UVLO on low-side and high-side	
	600 V		IRS25752L	0.16/0.24 A	SOT23-6		
Fly-back	22 V	1-ch non-isolated	1EDN7511B	4/8 A	SOT23-6	2 ns delay matching, 19 ns propagation delay	800 V CoolMOS™ P7 MOSFET (IPN80R600P7, IPA80R280P7,) 950 V CoolMOS™ P7 MOSFET (IPN95R1K2P7, IPD95R450P7)
	200 V		1EDN7550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static ground-shift robustness	
HB(LLC) (<500 W)	600 V	Half-bridge	IRS2153DS	0.18/0.26 A	DSO-8	Self-oscillating, Integrated bootstrap FET, Shutdown	600 V CoolMOS™ P7 MOSFET (IPW60R180P7, IPD60R180P7, IPA60R360P7S, IPP60R180P7)
	650 V	High and low-side	2ED2101S06F NEW	0.29/0.7 A	DSO-8	Infineon SOI, integrated BSD, fast level-shift, HIN, LIN	
	650 V	Half-bridge	2ED2304S06F	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	
HB(LLC) (>500 W)	1200 V	1-ch isolated	1EDI60N12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	600 V CoolMOS™ P7 MOSFET (IPW60R099P7, IPD60R180P7, IPA60R099P7, IPP60R099P7)
	1200 V	Half-bridge	2ED020I12-FI	1.5/2.5 A	DSO-18	EiceDRIVER™ Enhanced 2ED-FI with OPAMP and comparator (isolation only on the high side)	
	1200 V	2-ch isolated	2EDB8259F*	5/9 A	DSO-16	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
	1200 V		2EDB8259Y*	5/9 A	DSO-14	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
Sync buck	200 V	High and low-side	IR2010S	3/3 A	DSO-8	Shutdown	600 V CoolMOS™ P7 MOSFET (IPW60R180P7, IPD60R180P7, IPN60R360P7S, IPP60R180P7) 650 V CoolSiC™ SiC MOSFET (IMZA65R027M1H, IMZA65R107M1H)
	600 V	Half-bridge	2EDL05N06PF	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	
	650 V		2ED2304S06F	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	
	1200 V	1-ch isolated	1EDB9275F NEW	5.4/9.8 A	DSO-8	EiceDRIVER™ 1EDi with basic isolation (3kV UL 1577)	
	1200 V	2-ch isolated	2EDB8259F*	5/9 A	DSO-16	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
	1200 V		2EDB8259Y*	5/9 A	DSO-14	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	

*Coming soon

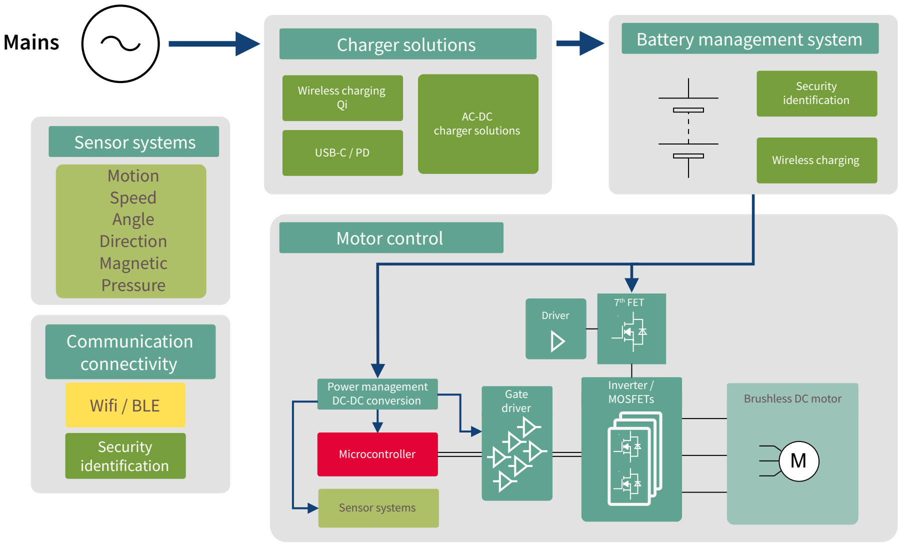
Table provides representative products. For complete portfolio please visit www.Infineon.com

Power Tools

Low voltage drives & battery powered applications

Battery-powered applications

- Drones / multicopters (<2 kW)
- Lawn mower (<1 kW)
- Cordless power tools (<3 kW)
- Outdoor power equipment (<5 kW)
- Service robotics (<1 kW)
- Cordless vacuum cleaners (<1 kW)
- Toys (RC cars) (<1 kW)
- Fast battery chargers



Millions of households worldwide rely on power tools to complete daily tasks or creative projects around the home. Consumers want robust, reliable and portable power tools that are easy-to-use with low price and long battery life as key selection options. Battery powered tools must also be equipped with diagnostic and safety features to ensure confidence with high quality.

Infineon’s broad portfolio offers best-fit, innovative solutions for all power tools applications. We help you meet each consumer need and reduce your overall costs.

Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Motor Inverter/ BLDC	60 V	Three-phase	6EDL7141 NEW	1.5/1.5 A	VQFN-48 7x7mm	Fully programmable, integrated power supplies and current sense amplifiers	StrongIRFET™ MOSFET (IRF7480M, IRF6726M) StrongIRFET™ 2 MOSFET (IPP016N08NF2S, IPP026N10NF2S) 30 V OptiMOS™ 5 MOSFET (BSZ0500NSI, BSC009NE2LS5) 40 V OptiMOS™ 5 MOSFET (BSC019N04LS, BSZ028N04LS) 60 V OptiMOS™ 5 MOSFET (BSC012N06NS, IPT007N06N) 80 V OptiMOS™ 5 MOSFET (BSC021N08NS5, IPT010N08NM5) 100 V OptiMOS™ 5 MOSFET (BSC027N10NS5, IPT015N10N5) 150 V OptiMOS™ 5 MOSFET (BSC074N15NS5)
	160 V	High and low-side	2ED2732S01G*	1/2 A	DFN10 3x3mm	Infineon SOI, integrated BSD, separate VSS/COM, thermal pad	
	160 V	Three-phase	6ED2742S01Q*	1/2 A	QFN32 5x5mm	Infineon SOI, integrated BSD, PMU, trickle charge pumps, programmable OCP, and current sense amp, RFE	
	160 V	Half-bridge	2ED2748S01G*	4/8 A	DFN10 3x3mm	Infineon SOI, integrated BSD, separate VSS/COM, thermal pad	
	200 V	1-ch non-isolated	1EDN7550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static ground-shift robustness	
	200 V	Three-phase	6ED003L02-F2	0.165/ 0.375 A	TSSOP-28	Infineon SOI, OCP, Enable, fault reporting	
	200 V		6EDL04N02PR	0.165/ 0.375 A	TSSOP-28	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	200 V	High and low-side	IRS2005S	0.29/0.6 A	DSO-8	VCC & VBS UVLO, matched propagation delay	
	200 V	Half-Bridge	IRS2007S	0.29/0.6 A	DSO-8	VCC & VBS UVLO, matched propagation delay	
	200 V	High and low-side	IRS2011S	1/1 A	DSO-8	60 ns prop delay, VCC & VBS UVLO	
	600 V	Half-bridge	2EDL05N06PF	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	
	600 V		2EDL23N06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	600 V	Three-phase	6EDL04N06PT	0.165/ 0.375 A	DSO-28 300 mil	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	600 V	High and low-side	IRS21867S	4/4 A	DSO-8	High current for high power and fast switching frequency with low UVLO (6 V/5.5 V)	
Battery Charger	22 V	1-ch non-isolated	1EDN8511B	4/8 A	SOT23-6	Separate output, 19 ns propagation delay	CoolMOS™ MOSFET (IPW60R070CFD7, IPAN60R125PFD7S) CoolMOS™ MOSFET P7 (IPA80R900P7, IPA60R180P7S) 650 V CoolSiC™ MOSFET (IMW65R048M1H, IMZA65R072M1H) CoolSiC™ Diode (IDH10G65C6, IDW20G65C5B) OptiMOS™ 5 (IPA083N10N5, IPA029N06N)
	22 V	2-ch non-isolated	2EDN8534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	
	25 V	1-ch non-isolated	1ED44171N01B*	2.6/2.6 A	SOT23-5	Enable, programmable fault clear time, UVLO	
	25 V		1ED44175N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V		IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
	600 V	High and low-side	IRS2186S	4/4 A	DSO-8	High current for high power and fast switching frequency	
	650 V		2ED2106S06F NEW	0.29/0.7 A	DSO-8	Infineon SOI, integrated BSD, HIN, LIN	
	650 V		2ED2110S06M NEW	2.5/2.5 A	DSO-16 300 mil	Infineon SOI, integrated BSD, fast level-shift, Shut-down, separate VSS/COM	
	650 V		2ED2181S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	

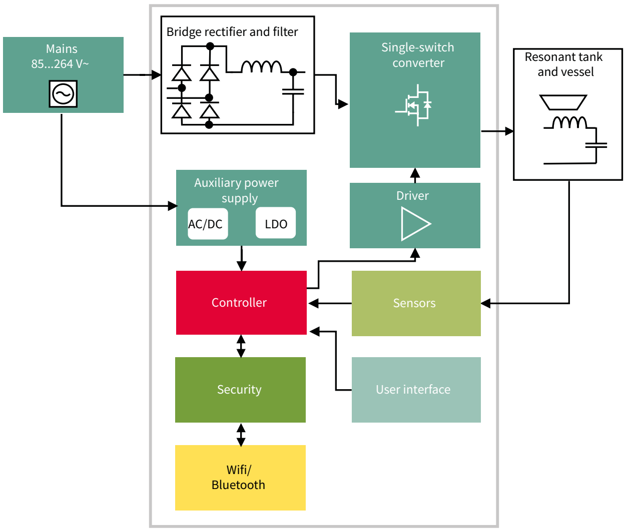
*Coming soon

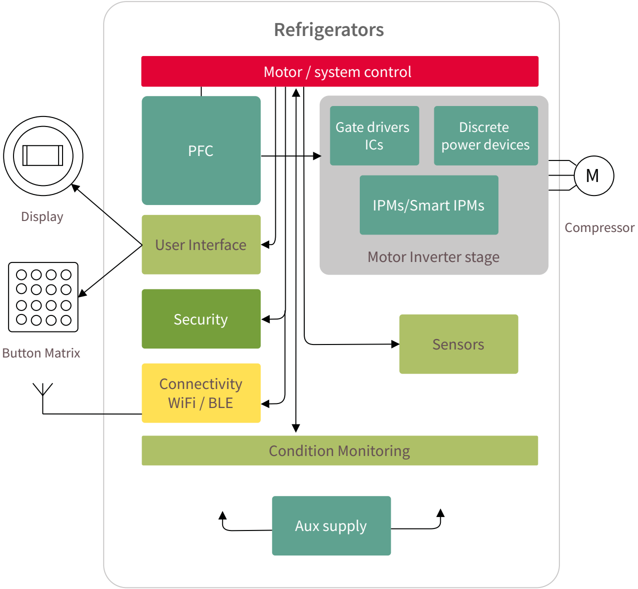
Table provides representative products. For complete portfolio please visit www.Infineon.com

Major home appliance

Major and small home appliances

Microwave ovens





Small home appliance applications

- › Vacuum cleaner (SR motor, BLDC, PFC)
- › Hair dryers
- › Induction heating (half bridge-topology)
- › Microwave ovens
- › Fans (hood fans, ceiling fans, freezer fans)

Major home appliance applications

- › Refrigerators (compressors)
- › Air-conditioners (PFC, compressors, fans, SMPS)
- › Washing machines (drum motors, drain pumps)
- › Dryers (drum drives, compressors, fan drives)
- › Dish washers (drain pumps, spray/main circulator pumps)

Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Single-end boost PFC	22 V	1-ch non-isolated	1EDN8511B	4/8 A	SOT23-6	Separate output, 19 ns propagation delay	TRENCHSTOP™ (IKWH30N65WR6, IKW40N65ET7) Rapid Diode (IDW60C65D1, IDW40E65D1E) CoolMOS™ MOSFET (IPP60R120P7, IPW60R099P7) CoolSiC™ Diode (IDW30G65C5, IDH20G65C6) CIPOS™ Mini (IFCM15S60GD, IFCM10P60GD)
	25 V		1ED44171N01B*	2.6/2.6 A	SOT23-5	Enable, programmable fault clear time, UVLO	
	25 V		1ED44173N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V		1ED44176N01F	0.8/1.75 A	DSO-8	Fast, accurate (±5%) OCP, fault reporting, Enable, positive current sensing, separate VSS / COM	
	25 V		IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
Interleaved boost PFC	22 V	2-ch non-isolated	2EDN8534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	
	24 V		2ED24427N01F NEW	10/10 A	DSO-8 with power pad	Enable, Low $R_{DS(on)}$ outputs, thermal pad	
	25 V		IRS4427S	2.3/3.3 A	DSO-8	Matched propagation delay	
Totem pole PFC	600 V	Half-bridge	2EDL23N06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	600 V CoolMOS™ CFD7 MOSFET (IPP60R070CFD7, IPP60R280CFD7, IPT60R035CFD7, IPT60R145CFD7)
	650 V	High and low-side	2ED2101S06F NEW	0.29/0.7 A	DSO-8	Infineon SOI, integrated BSD, fast level-shift, HIN, LIN	
	650 V		2ED2110S06M NEW	2.5/2.5 A	DSO-16 300 mil	Infineon SOI, integrated BSD, fast level-shift, Shutdown, separate VSS/COM	
	650 V		2ED2181S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
Motor Inverter/ Compressor/ Drive/Fans	600 V	Half-bridge	2EDL05I06PF	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	TRENCHSTOP™ IGBT+Diode (IKD04N60RC2, IKD06N60RC2) TRENCHSTOP™ IGBT6 (IKA08N65ET6, IKA15N65ET6) CoolMOS™ MOSFET PFD7 (IPD60R1K0PFD7S, IPN60R600PFD7S)
	600 V		2EDL23I06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	600 V	Three-phase	6EDL04I06PT	0.165/ 0.375 A	DSO-28 300 mil	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	600 V		IRS2334M	0.2/0.35 A	VQFN-28	Space saving QFN package, matched propagatin delay	
	600 V	Half-bridge	IRS2890DS	0.22/0.48 A	DSO-14	Integrated bootstrap FET, OCP, fault reporting	
	650 V	High and low-side	2ED2106S06F NEW	0.29/0.7 A	DSO-8	Infineon SOI, integrated BSD, HIN, LIN	
	650 V	Half-bridge	2ED2108S06F NEW	0.29/0.7 A	DSO-8	Infineon SOI, integrated BSD, HIN, /LIN	
	650 V	High and low-side	2ED21814S06J NEW	2.5/2.5 A	DSO-14	Infineon SOI, integrated BSD, separate VSS/COM	
	650 V	Half-Bridge	2ED2182S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	650 V		2ED2304S06F	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	
Non-Motor Inverter	25 V	1-ch non-isolated	1ED44173N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	TRENCHSTOP™ IGBT Reverse Conducting (IHW20N135R5, IHW30N65R6)
	650 V	Half-bridge	2ED21824S06J NEW	2.5/2.5 A	DSO-14	Infineon SOI, integrated BSD, separate VSS/COM	
	1200 V	1-ch isolated	1EDI20I12AF	4/3.5 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
SMPS (100 W)	25 V	2-ch non-isolated	IRS4427S	2.3/3.3 A	DSO-8	Matched propagation delay	CoolMOS™ MOSFET P7 (IPN80R4K5P7)
	600 V	High and low-side	IRS2106S	0.29/0.6 A	DSO-8	Independent UVLOs	
	600 V	Half-bridge	IRS2153DS	0.18/0.26 A	DSO-8	Self-oscillating, Integrated bootstrap FET, Shut-down	
	650 V	High and low-side	2ED2101S06F NEW	0.29/0.7 A	DSO-8	Infineon SOI, integrated BSD, fast level-shift, HIN, LIN	
	650 V	Half-bridge	2ED2304S06F	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	

*Coming soon

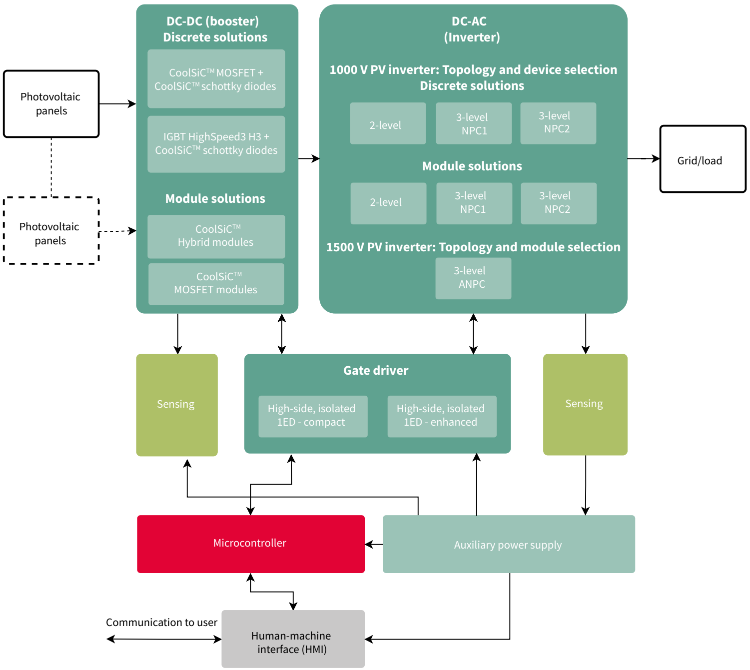
Table provides representative products. For complete portfolio please visit www.Infineon.com

Renewables

Solar

PV modules supply power in the form of direct current (DC). This has to be converted to alternating current (AC) before it can be fed into the grid and be either consumed locally or transmitted to the point of use. Solar inverters convert DC to AC.

Our portfolio comprises a broad selection of inverters ranging from just a few watts and kilowatts for residential use to several megawatts for the commercial and utility-scale markets. It includes best-in-class discrete OptiMOS™ , CoolMOS™ and CoolSiC™ MOSFETs and IGBTs as well as highly integrated 3-level Easy 1B/2B modules, functionally integrated EiceDRIVER™ gate driver ICs and XMC™ controllers. Backed by our end-to-end application expertise, we offer the best chip combinations to achieve leading power density levels and best-in-class efficiency.



Solar energy applications

- Central inverter
- 3-phase string inverter
- 1-phase string inverter
- Micro inverter
- Power optimizer

Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
3-phase string inverter	1200 V	2-ch isolated	2ED020I12-F2	2/2 A	DSO-36	EiceDRIVER™ Enhanced 2ED-F2 with DESAT and Miller clamp	CoolSiC™ SiC MOSFET (IMW120R030M1, IMW120R090M1H) CoolSiC™ SiC Diode (IDW20G1205B, IDW40G120C5B) TRENCHSTOP™ IGBT (IKW40N120H3, IKW40N65ES5, IKW40N65H5) CoolSiC™ SiC Hybrid booster module (DF80R12W2H3F_B11, DF160R12W2H3F_B11) CoolSiC™ SiC MOSFET booster module (DF11MR12W1M1_B11, DF23MR12W1M1_B11) CoolSiC™ SiC MOSFET 2-Level module (FF8MR12W2M1_B11, FS45MR12W1M1_B11) EasyPACK™ IGBT module (FS3L30R07W2H3F_B11, F3L200R12W2H3_B11)
	1200 V		2EDF6258X*	4/8 A	DSO-14	EiceDRIVER™ 2EDi with functional isolation	
	1200 V		2EDF9275F NEW	4/8 A	DSO-16	EiceDRIVER™ 2EDi with Functional isolation, Disable	
	1200 V		2EDR8259H*	4/8 A	DSO-16 300 mil	EiceDRIVER™ 2EDi with reinforced isolation	
	2300 V	1-ch isolated	1ED3124MC12H NEW	13.5/14 A	DSO-8 300 mil	EiceDRIVER™ X3 Compact with separate output	
	2300 V		1ED3241MC12H NEW	18/18 A	DSO-8 300 mil	EiceDRIVER™ 2L-SRC Compact with 2-level slew rate control	
	2300 V		1ED3321MC12N NEW	6/8.5 A	DSO-16	EiceDRIVER™ Enhanced 1ED-F3 with DESAT, soft-off and Miller clamp	
	2300 V		1ED3491MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Analog with programmable DESAT, soft-off and Miller clamp	
1-phase string inverter	22 V	2-ch non-isolated	2EDN8534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	OptiMOS™ MOSFET (BSC093N15NS5, IPB044N15N5, IPP051N15N5) CoolMOS™ MOSFET (IPZA65R029CFD7, IPZA60R024P7) CoolSiC™ SiC MOSFET (IMZA65R027M1H, IMBG65R022M1H) CoolSiC™ SiC Diode (IDW40G65C5, IDW20G65C5) TRENCHSTOP™ IGBT (IKW40N65ES5, IKZ50N65EH5, IKZ75N65EL5)
	24 V		2ED24427N01F NEW	10/10 A	DSO-8 with power pad	Enable, Low $R_{DS(on)}$ outputs, thermal pad	
	25 V	1-ch non-isolated	1ED44175N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V	2-ch non-isolated	IRS4427S	2.3/3.3 A	DSO-8	Matched propagation delay	
	25 V	1-ch non-isolated	IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
	650 V	High and low-side	2ED2181S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	650 V	Half-bridge	2ED21824S06J NEW	2.5/2.5 A	DSO-14	Infineon SOI, integrated BSD,HIN, LIN, separate VSS/COM	
	1200 V	1-ch isolated	1EDB9275F NEW	5.4/9.8 A	DSO-8	EiceDRIVER™ 1EDi with basic isolation (3kV UL 1577)	
	1200 V		1EDI60N12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
	1200 V	2-ch isolated	2EDB9259Y*	4/8 A	DSO-16	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
	1200 V		2EDB7259Y*	5/9 A	DSO-16	3kV basic isolation w. CT technology (UL1577), dead-time control (DTC) and STP, UVLO (4 types), CMTI > 150 V/ns	
	1200 V	High and low-side	IR2213S	2/2.5 A	DSO-16 300 mil	Shutdown and Separate power supply	
	1200 V	Half-bridge	IR2214SS	2/3 A	SSOP-24	DESAT, soft-off, two stage turn on, fault reporting, Synchronization	
	2300 V	1-ch isolated	1ED3124MC12H NEW	13.5/14 A	DSO-8 300 mil	EiceDRIVER™ X3 Compact with separate output	
MicroInverter	160 V	High and low-side	2ED2732S01G*	1/2 A	DFN10 3x3mm	Infineon SOI, integrated BSD, separate VSS/COM, thermal pad	OptiMOS™ MOSFET (BSC093N15NS5, BSC028N06NS, BSC027N10NS5) CoolMOS™ MOSFET (IPT60R102G7, IPB65R125CFD7, IPW60R145CFD7)
	160 V	Half-bridge	2ED2748S01G*	4/8 A	DFN10 3x3mm	Infineon SOI, integrated BSD, separate VSS/COM, thermal pad	
	200 V	High and low-side	IRS2011S	1/1 A	DSO-8	60 ns prop delay, VCC & VBS UVLO	
	600 V	Half-Bridge	2EDL05N06PJ	0.36/0.7 A	DSO-14	Infineon SOI, integrated BSD	
	650 V		2ED21824S06J NEW	2.5/2.5 A	DSO-14	Infineon SOI, integrated BSD,HIN, LIN, separate VSS/COM	
	650 V		2ED2304S06F	0.36/0.7 A	DSO-8	Infineon SOI, integrated BSD	
	1200 V	2-ch isolated	2EDS7165H NEW	1/2 A	DSO-16 300 mil	EiceDRIVER™ 2EDi with reinforced isolation	
Power Optimizer	200 V	1-ch non-isolated	1EDN8550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static ground-shift robustness	OptiMOS™ MOSFET (BSC093N15NS5, BSC012N06NS, BSC027N10NS5)
	200 V	High and low-side	IRS2011S	1/1 A	DSO-8	60 ns prop delay, VCC & VBS UVLO	
	250 V		2EDF5215F*	5/9 A	DSO-8	7 V UVLO, functional isolation and 37 ns propagation delay	

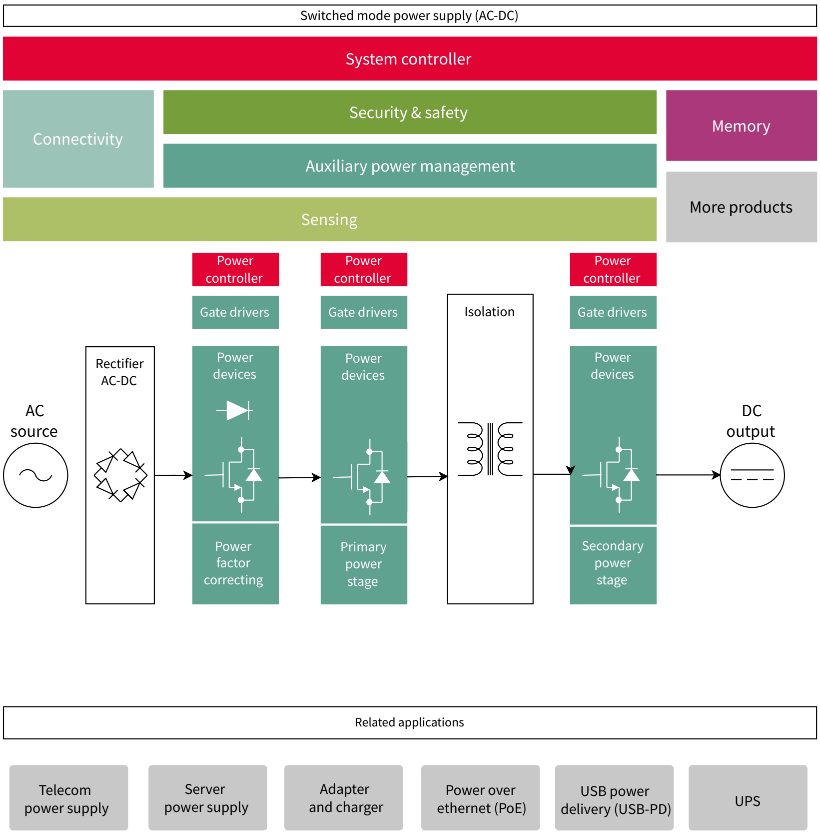
*Coming soon

Table provides representative products. For complete portfolio please visit www.Infineon.com

Telecom, Server and Industrial SMPS

In addition to Infineon Technologies EiceDRIVER™ gate driver ICs, Infineon Technology provides ac-dc controllers, dc-dc converters, MOSFETs, Intelligent Power Modules, lighting ICs, transistors (IGBTs), diodes and rectifier, regulators, isolation interfaces, voltage, and current management for internal and external power supply applications. Our design solutions increase active-mode efficiency, decrease standby-mode power consumption, and provide power factor correction, at every stage of your layout from line to load.

With the introduction of gallium nitride, Infineon is currently the only company in the market offering a full-spectrum portfolio of all power technologies – silicon (Si), silicon carbide (SiC) and GaN. We deliver solutions from microamps to megawatts as discrete or integrated solutions—depending on your preference.



Recommended gate drivers

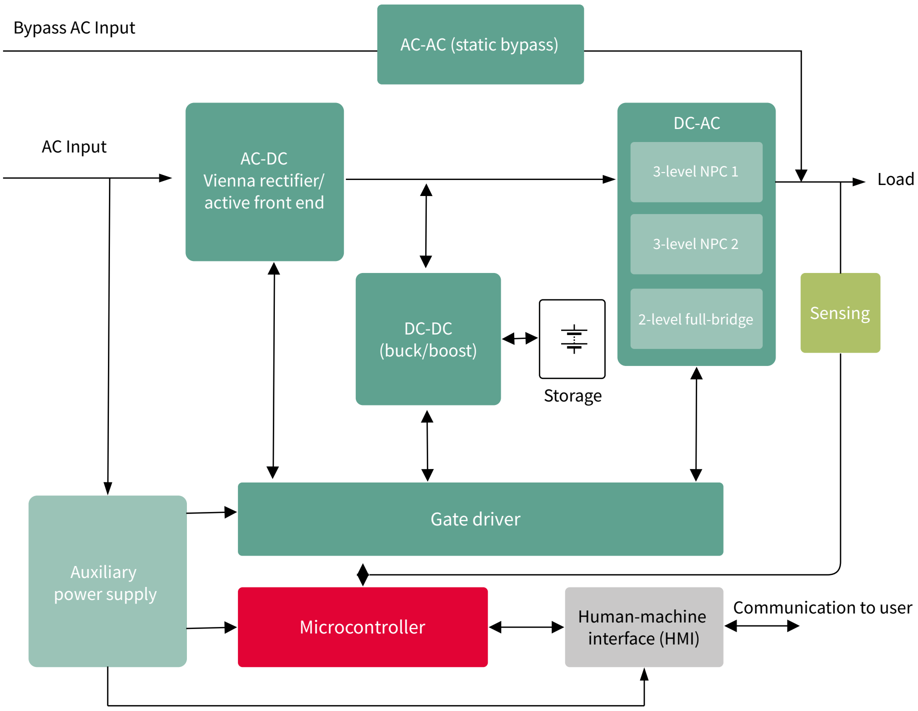
Application	Voltage class [V]	Configuration	Part number	Source/sink current typ.	Packages	Description	Suitable power switches and modules
Single-end boost PFC	22 V	1-ch non-isolated	1EDN7511B	4/8 A	SOT23-6	Separate output, 19 ns propagation delay	600 V CoolMOS™ C7 MOSFET (IPL60R065C7, IPZ60R017C7, IPZ60R099C7) 600 V CoolMOS™ G7 MOSFET (IPT60R028G7, IPDD60R050G7, IPDD60R190G7) 600 V CoolMOS™ P7 MOSFET (IPZA60R024P7, IPZA60R180P7, IPL60R365P7)
	25 V		1ED44175N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V		IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
	200 V		1EDN8550B	4/8 A	SOT23-6	True differential inputs, with ± 80 V static ground-shift robustness	
Totem pole PFC	600 V	Half-bridge	2EDL23N06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	600 V CoolMOS™ CFD7 MOSFET (IPP60R070CFD7, IPT60R035CFD7, IPT60R145CFD7)
	650 V	High and low-side	2ED2181S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	1200 V	1-ch isolated	1EDF5673F	4/8 A	DSO-16 150 mil	EiceDRIVER™ 1EDi with functional isolation for GaN HEMTs	600 V CoolGaN™ HEMT (IGT60R070D1, IGOT60R070D1, IGLD60R190D1)
	1200 V	2-ch isolated	2EDB8259F*	4/8 A	DSO-16	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
Vienna rectifier	22 V	2-ch non-isolated	2EDN7534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	600 V CoolMOS™ C7 MOSFET (IPP60R040C7, IPW60R017C7, IPB60R040C7) 650 V CoolMOS™ C7 MOSFET (IPP65R045C7, IPW65R019C7, IPB65R045C7) 600 V CoolMOS™ P7 MOSFET (IPP60R060P7, IPW60R024P7, IPW60R180P7)
	1200 V	1-ch isolated	1EDI20N12AF	4/3.5 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
	1200 V	2-ch isolated	2EDB8259Y*	4/8 A	DSO-14	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	
	1200 V		2EDR8259H*	4/8 A	DSO-16 300 mil	EiceDRIVER™ 2EDi with reinforced isolation	
LLC/ZVS PSFB	600 V	High and low-side	IRS2186S	4/4 A	DSO-8	High current for high power and fast switching frequency	600 V CoolMOS™ CFD7 MOSFET (IPP60R070CFD7, IPP60R280CFD7, IPT60R035CFD7, IPT60R145CFD7) 650 V CoolSiC™ SiC MOSFET (IMZA65R027M1H, IMZA65R072M1H) 600 V CoolGaN™ HEMT (IGT60R070D1, IGO60R070D1, IGLD60R190D1)
	1200 V	1-ch isolated	1EDI20N12AF	4/3.5 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
	1200 V		1EDS5663H	4/8 A	DSO-16 300 mil	EiceDRIVER™ 1EDi with Reinforced isolation for GaN HEMTs, Disable	
	1200 V	2-ch isolated	2EDR8259X*	5/9 A	DSO-14 300 mil	EiceDRIVER™ 2EDi with reinforced isolation	
Sync rectifier	22 V	1-ch non-isolated	1EDN7512G	4/8 A	WSON-6	Separate output, 19 ns propagation delay	40 V OptiMOS™ 6 MOSFET (BSC059N04LS6, ISC012N04LM6, IST007N04NM6) 60 V OptiMOS™ 5 MOSFET (BSC016N06NS, ISC009N06LM5, BSZ040N06LS5) 80 V OptiMOS™ 5 MOSFET (BSC019N08NS5, BSZ070N08LS5, IPT010N08NM5) 100 V OptiMOS™ 5 MOSFET (BSC040N10NS5, IPT015N10N5, IPTG014N10NM5) 150 V OptiMOS™ 5 MOSFET (BSC074N15NS5, BSC160N15NS5, IPB060N15N5)
	22 V	2-ch non-isolated	2EDN7534G NEW	5/5 A	WSON-8	2 ns delay matching, 19 ns propagation delay	
	24 V		2ED24427N01F NEW	10/10 A	DSO-8 with power pad	Enable, Low $R_{DS(on)}$ outputs, thermal pad	
	25 V	1-ch non-isolated	1ED44173N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	120 V	High and low-side	2EDL8024G NEW	4/6 A	VDSON-8	<6ns delay matching, VDD/VHB UVLO	
	120 V	Half-bridge	2EDL8124G3C*	4/6 A	VDSON-10	<6ns delay matching, VDD/VHB UVLO	
	200 V	1-ch non-isolated	1EDN7116G NEW	2/2 A	VDSON-8	GaN driver with truly differential input & adjustable negative charge pump	
	200 V		1EDN7116U*	2/2 A	TSNP-7	GaN driver with truly differential input	
	200 V		1EDN7550U NEW	4/8 A	TSNP-6	True differential inputs, with ± 80 V static ground-shift robustness	
	200 V	2-ch non-isolated	IR11688S	1/4 A	DSO-8	Dual synchronous rectification control IC	
	1200 V	1-ch isolated	1EDI20N12AF	4/3.5 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
	1200 V	2-ch isolated	2EDB8259F*	5/9 A	DSO-16	EiceDRIVER™ 2EDi with basic isolation (3kV UL1577)	

*Coming soon

Table provides representative products. For complete portfolio please visit www.Infineon.com

Uninterruptible power supply (UPS)

With increasing awareness and commitment towards reducing carbon emissions across the world, relatively brings more stringent compliance subsequently increasing the threat of higher energy costs are driving the market for higher-efficiency UPSs. There is also a market trend toward customers requiring smaller UPS units that provide the same level of protection. The trend is being driven by space being at a premium and by the cost of ownership. The smaller the UPS unit's footprint, the lighter in weight it becomes, the less it costs to operate and the more space is available to devote to the core business or process. Combining the strengths of the Easy power modules, Infineon's 1200 V CoolSiC™ MOSFET, and EiceDRIVER™ gate driver ICs enables our customers to not only reduce system and operational cost significantly further helps to harness never before seen levels of efficiency and power density.



Recommended gate drivers

Application	Voltage class [V]	Configuration	Part number	Source/ sink current typ.	Packages	Description	Suitable power switches and modules
Battery DC-DC (<25 kW)	600 V	Half-bridge	2EDL05I06PJ	0.36/0.7 A	DSO-14	Infineon SOI, integrated BSD	TRENCHSTOP™ (IKW50N65H5, IKFW75N60ET)
	600 V		2EDL23I06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	
	650 V	High and low-side	2ED2110S06M NEW	2.5/2.5 A	DSO-16 300 mil	Infineon SOI, integrated BSD, fast level-shift, Shutdown, separate VSS/COM	
	650 V		2ED2181S06F NEW	2.5/2.5 A	DSO-8	Infineon SOI, integrated BSD,HIN, LIN	
	1200 V	1-ch isolated	1EDI20I12AF	4/3.5 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	TRENCHSTOP™ IGBT+Diode (IKW15N120BH6, IKQ75N120CS6)
	1200 V	High and low-side	IR2213S	2/2.5 A	DSO-16 300 mil	Shutdown and Separate power supply	
Battery DC-DC (<100 kW)	1200 V	1-ch isolated	1EDI60I12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	EconoPACK™ 2/3/4 module (FS50R12KT4_B11, FS150R12KT4_B11)
Mains inverter (<25 kVA)	600 V	Half-bridge	2EDL23I06PJ	2.3/2.8 A	DSO-14	Infineon SOI, integrated BSD, OCP, Enable, fault reporting	TRENCHSTOP™ IGBT (IKW30N65ES5, IKW75N65EH5)
	600 V		IR2114SS	2/3 A	SSOP-24	DESAT, soft-off, two stage turn on, fault reporting, Synchronization	
	600 V	High and low-side	IRS2186S	4/4 A	DSO-8	High current for high power and fast switching frequency	
	650 V	Half-bridge	2ED21834S06J NEW	2.5/2.5 A	DSO-14	Infineon SOI, integrated BSD,HIN, /LIN, separate VSS/COM	
	1200 V	1-ch isolated	1EDI20I12MF	4.4/4.1 A	DSO-8	EiceDRIVER™ 1ED Compact with Miller clamp	TRENCHSTOP™ IGBT (IKW15N120BH6, IKQ75N120CS6)
	1200 V		1EDI60I12AF	10/9.4 A	DSO-8	EiceDRIVER™ 1ED Compact with separate output	
Mains inverter (<100 kVA)	1200 V	2-ch isolated	2ED020I12-F2	2/2 A	DSO-36	EiceDRIVER™ Enhanced 2ED-F2 with DESAT and Miller clamp	EasyPACK™ 3-level NPC 1 module (FS3L30R07W2H3F_B11, FS3L50R07W2H3F_B11) EasyPACK™ 3-level NPC 2 module (F3L75R12W1H3_B11, F3L150R12W2H3_B11) CoolSiC™ MOSFET 3-level NPC 2 module (F3L15MR12W2M1_B69) EconoPACK™ 2-level full-bridge module (FS50R12KT4_B11, FS150R12PT4)
	2300 V	1-ch isolated	1ED3124MC12H NEW	13.5/14 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with separate output	
	2300 V		1ED3241MC12H NEW	18/18 A	DSO-8 300mil	EiceDRIVER™ 2L-SRC Compact with 2-level slew rate control	
	2300 V		1ED3321MC12N NEW	6/8.5 A	DSO-16	EiceDRIVER™ Enhanced 1ED-F3 with DESAT, soft-off and Miller clamp	
	2300 V		1ED3491MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Analog with programmable DESAT, soft-off and Miller clamp	
	2300 V		1ED3890MC12M NEW	7.5/11 A	DSO-16 fine pitch	EiceDRIVER™ Enhanced X3 Digital with I2C configurability, DESAT, soft-off and Miller clamp	
PFC/SMPS	22 V	1-ch non-isolated	1EDN8511B	4/8 A	SOT23-6	Separate output, 19 ns propagation delay	TRENCHSTOP™ IGBT (IKW30N65H5, IKW50N65F5) CoolMOS™ MOSFET P7 (IPW60R037P7, IPW60R024P7)
	22 V	2-ch non-isolated	2EDN8534F NEW	5/5 A	DSO-8	2 ns delay matching, 19 ns propagation delay	
	24 V		2ED24427N01F NEW	10/10 A	DSO-8 with power pad	Enable, Low $R_{DS(on)}$ outputs, thermal pad	
	25 V	1-ch non-isolated	1ED44171N01B*	2.6/2.6 A	SOT23-5	Enable, programmable fault clear time, UVLO	
	25 V		1ED44175N01B NEW	2.6/2.6 A	SOT23-6	Fast, accurate (±5%) OCP, fault reporting, Enable, negative current sensing	
	25 V		1ED44176N01F	0.8/1.75 A	DSO-8	Fast, accurate (±5%) OCP, fault reporting, Enable, positive current sensing, separate VSS / COM	
	25 V	2-ch non-isolated	IRS4427S	2.3/3.3 A	DSO-8	Matched propagation delay	
	25 V	1-ch non-isolated	IRS44273L	1.5/1.5 A	SOT23-5	Additional OUT pin	
Active bridge rectifier (<100 kVA)	1200 V	2-ch isolated	2ED020I12-F2	2/2 A	DSO-36	EiceDRIVER™ Enhanced 2ED-F2 with DESAT and Miller clamp	CoolSiC™ SiC MOSFET (IMW120R030M1, IMW120R090M1H) CoolSiC™ MOSFET 3-level NPC 2 module (F3L15MR12W2M1_B69) EasyPACK™ 3-level NPC 2 module (F3L75R12W1H3_B11, F3L150R12W2H3_B11)
	2300 V	1-ch isolated	1ED3124MC12H NEW	13.5/14 A	DSO-8 300mil	EiceDRIVER™ X3 Compact with separate output	
	2300 V		1ED3321MC12N NEW	6/8.5 A	DSO-16	EiceDRIVER™ Enhanced 1ED-F3 with DESAT, soft-off and Miller clamp	

*Coming soon

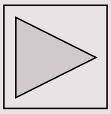
Table provides representative products. For complete portfolio please visit www.Infineon.com


TRANSLINK
2101
PILOT BUS
2101
5268 JA

Driver configuration overview

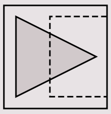
1-channel low-side driver

Allows low offset of the voltage between input and output



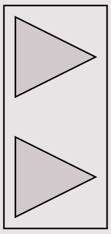
1-channel high-side driver

Allows high voltage offset between input and output



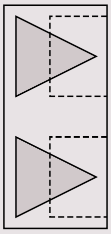
2-channel low-side driver

Both channels allow individual low voltage offsets, no interlock



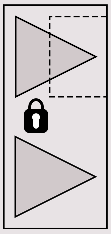
2-channel high-side driver

Both channels allow individual high voltage offsets, no interlock



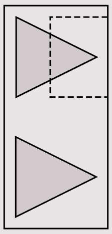
Half-bridge driver

Two interlocked channels for shoot through protection where one of the channels allows a high voltage offset.



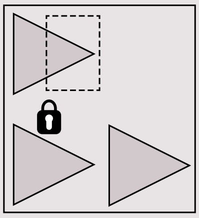
High and low-side driver

Two non-interlocked channels, one for high voltage, one for low voltage offsets. The industry may also refer this as half-bridge.



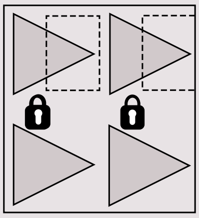
Half-bridge plus single low side driver

Half-bridge with one additional low-side driver.



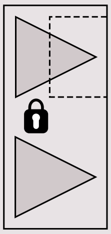
Full-bridge driver

Four channels in a package with two independent half bridges.



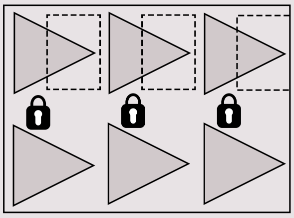
Synchronous-buck drivers

High speed drivers for dual high side and low side MOSFETs in synchronous rectified buck converters.



Three-phase bridge

Six channels in a package with three independent half bridges

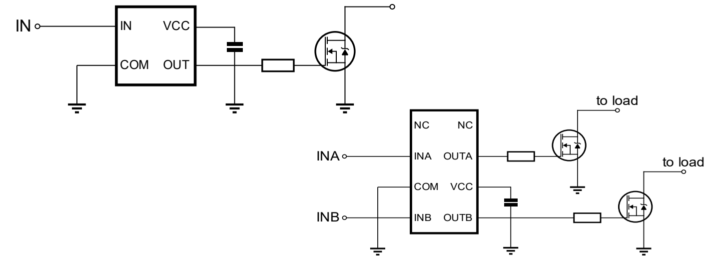


Product portfolio overview

Infineon's gate driver IC solutions are the expert's choice. With more than 400 reliable and efficient gate driver solutions, we provide a comprehensive portfolio for virtually any application. To ease the selection process, this overview is structured along the configurations of the gate driver ICs, as opposed to application topology.

Non-isolated low side gate driver IC

Typical connection

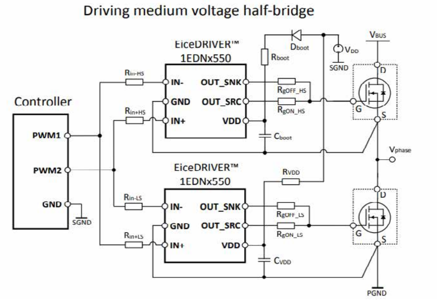


Configuratiuon	Voltage class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/on typ. [ns]	Base PN		Technology	Enable	Fault reporting	Over-current protection	Programmable fault clear time	Separate sink/source outputs	DSO-8	DSO-8 (with power-pad)	DIP-8	SOT23-5	SOT23-6	WSON-6	WSON-8	TSSOP-8
								Features (see page 54)					Package (see page 55)							
1-channel	25	2.6/2.6	8.0/7.3	34/34	1ED44173N01B	NEW	N-ISO	✓	✓	✓							✓			
		2.6/2.6	11.9/11.0	50/50	1ED44175N01B	NEW	N-ISO	✓	✓	✓							✓			
		0.8/1.75	11.9/11.4	50/50	1ED44176N01F	NEW	N-ISO	✓	✓	✓	✓		✓							
		2.6/2.6	11.9/11.0	50/50	1ED44171N01B*		N-ISO	✓	✓							✓				
		1.5/1.5	10.2/9.2	50/50	IRS44273L		N-ISO									✓				
	22	4/8	4.2/3.9	19/19	1EDN7511B		N-ISO					✓					✓			
		4/8	4.2/3.9	19/19	1EDN7512B		N-ISO									✓				
		4/8	4.2/3.9	19/19	1EDN7512G		N-ISO											✓		
		4/8	8.0/7.0	19/19	1EDN8511B		N-ISO					✓					✓			
	5	1.6/3.3	8.9/8	200/150	IR2121		N-ISO		✓	✓					✓					
2-channel	25	2.3/3.3	10.2/9.2	50/50	IRS44262S		N-ISO						✓							
		2.3/3.3	N.A.	50/50	IRS4426S		N-ISO						✓							
		2.3/3.3	N.A.	50/50	IRS4427S		N-ISO						✓							
		2.3/3.3	N.A.	65/85	IR25600S		N-ISO						✓							
		2.3/3.3	N.A.	65/85	IR4426S		N-ISO						✓							
		2.3/3.3	N.A.	65/85	IR4427S		N-ISO						✓							
	24	10/10	11.5/10.0	40/55	2ED24427N01F	NEW	N-ISO	✓						✓						
	22	5/5	4.2/3.9	19/19	2EDN7523F		N-ISO	✓					✓							
		5/5	4.2/3.9	19/19	2EDN7523G		N-ISO	✓											✓	
		5/5	4.2/3.9	19/19	2EDN7523R		N-ISO	✓												✓
		5/5	4.2/3.9	19/19	2EDN7524F		N-ISO	✓					✓							
		5/5	4.2/3.9	19/19	2EDN7524G		N-ISO	✓											✓	
		5/5	4.2/3.9	19/19	2EDN7524R		N-ISO	✓												✓
		5/5	8.0/7.0	19/19	2EDN8523F		N-ISO	✓					✓							
		5/5	8.0/7.0	19/19	2EDN8523R		N-ISO	✓												✓
		5/5	8.0/7.0	19/19	2EDN8524F		N-ISO	✓					✓							
		5/5	8.0/7.0	19/19	2EDN8524R		N-ISO	✓												✓
		4/4	4.2/3.9	19/19	2EDN7424F		N-ISO	✓					✓							
		4/4	4.2/3.9	19/19	2EDN7424R		N-ISO	✓												✓
		4/4	4.2/3.9	19/19	2EDN7434F	NEW	N-ISO	✓					✓							
		4/4	4.2/3.9	19/19	2EDN7434R	NEW	N-ISO	✓												✓
		5/5	4.2/3.9	19/19	2EDN7533B	NEW	N-ISO										✓			
		5/5	4.2/3.9	19/19	2EDN7533F	NEW	N-ISO	✓					✓							
		5/5	4.2/3.9	19/19	2EDN7533R	NEW	N-ISO	✓												✓
		5/5	4.2/3.9	19/19	2EDN7534B	NEW	N-ISO										✓			
		5/5	4.2/3.9	19/19	2EDN7534F	NEW	N-ISO	✓					✓							
		5/5	4.2/3.9	19/19	2EDN7534R	NEW	N-ISO	✓												✓
		5/5	4.2/3.9	19/19	2EDN7534G	NEW	N-ISO	✓											✓	
		5/5	8.0/7.0	19/19	2EDN8533F	NEW	N-ISO	✓					✓							
		5/5	8.0/7.0	19/19	2EDN8533R	NEW	N-ISO	✓												✓
		5/5	8.0/7.0	19/19	2EDN8534F	NEW	N-ISO	✓					✓							
		5/5	8.0/7.0	19/19	2EDN8534R	NEW	N-ISO	✓												✓

*Coming soon

Non-isolated TDI gate driver IC

Typical connection

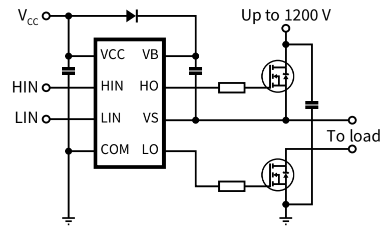

Driving medium voltage half-bridge

Configuratiuon	Voltage class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Features (see page 54)				Package (see page 55)			
							Adustable Negative charge pump	Active Miller clamp	Separate sink/source outputs	Truly differential inputs	SOT23-6	TSNP-6	TSNP-7	VSON-10
1-channel	200	4/8	4.2/3.9	45/45	1EDN7550U	N-ISO			✓	✓		✓		
		4/8	4.2/3.9	45/45	1EDN7550B	N-ISO			✓	✓	✓			
		4/8	8.0/7.0	45/45	1EDN8550B	N-ISO			✓	✓	✓			
		4/8	12.2/11.5	45/45	1EDN6550B NEW	N-ISO			✓	✓	✓			
		4/8	14.9/14.4	45/45	1EDN9550B NEW	N-ISO			✓	✓	✓			
		2/2	3.85/3.75	55/55	1EDN7116G NEW	N-ISO	✓	✓		✓				✓
		2/2	3.85/3.75	55/55	1EDN7116U*	N-ISO		✓		✓			✓	
		1.5/1.5	3.85/3.75	75/75	1EDN7126G NEW	N-ISO	✓	✓		✓				✓
		1.5/1.5	3.85/3.75	75/75	1EDN7126U*	N-ISO		✓		✓			✓	
		1/1	3.85/3.75	105/105	1EDN7136G NEW	N-ISO	✓	✓		✓				✓
		1/1	3.85/3.75	105/105	1EDN7136U*	N-ISO		✓		✓			✓	
		0.5/0.5	3.85/3.75	125/125	1EDN7146G NEW	N-ISO	✓	✓		✓				✓
		0.5/0.5	3.85/3.75	125/125	1EDN7146U*	N-ISO		✓		✓			✓	

*Coming soon

Half-bridge & high and low side gate driver IC

Typical connection

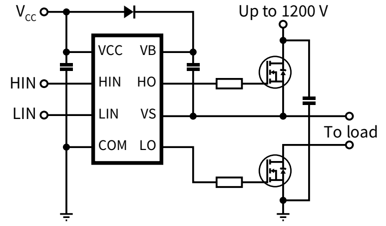


Voltage class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/ off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Comparator	Operational amplifier	Desaturation protection	Enable	Fault reporting	Integrated bootstrap diode	Over-current protection	Programmable dead time	Programmable Fault Clear / Reset	Programmable shutdown	Self-oscillating	Separate pin for logic ground	Shoot-through protection	Shutdown	Soft over-current shutdown	Two stage turn-on	DSO-8	DSO-14	DSO-16 WB	DSO-18	DSO-20 WB (36 fine pitch leads)	SSOP-24	CHIP
						Features (see page 54)																Package (see page 55)						
1200	1.5/2.5	12.2/11.2	85/85	2ED020I12-FI	CT	✓	✓											✓	✓						✓			
	2/2.5	10.2/9.3	225/280	IR2213S	JI												✓		✓					✓				✓
	2/3	10.2/9.3	440/440	IR2214SS	JI			✓		✓				✓			✓	✓	✓	✓	✓						✓	✓
	2.3/2.3	12.2/11.3	500/500	2ED1324S12P*	SOI				✓	✓	✓	✓		✓			✓	✓								✓		
	2.3/2.3	12.2/11.3	350/350	2ED1323S12P*	SOI				✓	✓	✓	✓		✓			✓							✓				
	2.3/4.6	12.2/11.3	500/500	2ED1322S12J*	SOI				✓	✓	✓	✓		✓			✓	✓								✓		
	2.3/4.6	12.2/11.3	350/350	2ED1321S12J*	SOI				✓	✓	✓	✓		✓			✓							✓				
650	0.29/0.7	8.9/8.0	90/90	2ED2101S06F NEW	SOI						✓											✓						
	0.29/0.7	8.9/8.0	90/90	2ED2103S06F NEW	SOI						✓							✓				✓						
	0.29/0.7	8.9/8.0	90/90	2ED2104S06F NEW	SOI						✓							✓	✓			✓						
	0.29/0.7	9.1/8.2	200/200	2ED2106S06F	SOI						✓											✓						✓
	0.29/0.7	9.1/8.2	200/200	2ED21064S06J	SOI						✓												✓					✓
	0.29/0.7	9.1/8.2	200/200	2ED2108S06F	SOI						✓							✓				✓						✓
	0.29/0.7	9.1/8.2	200/200	2ED21084S06J	SOI						✓		✓				✓	✓					✓					✓
	0.29/0.7	9.1/8.2	200/200	2ED2109S06F	SOI						✓							✓	✓			✓						✓
	0.29/0.7	9.1/8.2	200/200	2ED21094S06J	SOI						✓		✓				✓	✓	✓				✓					✓
	0.29/0.7	9.1/8.2	200/200	2ED21091S06F	SOI						✓		✓					✓	✓			✓						✓
	0.36/0.7	9.1 / 8.3	300 / 310	2ED2304S06F	SOI						✓							✓				✓						✓
	2.5/2.5	9.1/8.2	200/200	2ED2181S06F	SOI						✓											✓						✓
	2.5/2.5	9.1/8.2	200/200	2ED21814S06J	SOI						✓												✓					✓
	2.5/2.5	9.1/8.2	200/200	2ED2182S06F	SOI						✓							✓				✓						✓
	2.5/2.5	9.1/8.2	200/200	2ED21824S06J	SOI						✓		✓				✓	✓					✓					✓
	2.5/2.5	9.1/8.2	200/200	2ED2183S06F	SOI						✓							✓				✓						✓
	2.5/2.5	9.1/8.2	200/200	2ED21834S06J	SOI						✓		✓				✓	✓					✓					✓
	2.5/2.5	9.1/8.2	200/200	2ED2184S06F	SOI						✓							✓	✓			✓						✓
	2.5/2.5	9.1/8.2	200/200	2ED21844S06J	SOI						✓		✓				✓	✓	✓				✓					✓
	2.5/2.5	8.9/8.1	90/90	2ED2110S06J*	SOI						✓						✓	✓	✓					✓				
	1.5/2.5	12.2/11.3	85/85	2ED020I06-FI	CT	✓	✓											✓	✓						✓			
600	0.078/0.169	8.9/8.2	220/220	IR2304S	JI													✓				✓						
	0.078/0.169	8.9/8.2	220/220	IR25601S	JI													✓				✓						
	0.18/0.26	9/8	N.A.	IR21531S	JI										✓	✓		✓	✓			✓						✓
	0.18/0.26	9/8	N.A.	IR25603S	JI										✓	✓		✓	✓			✓						
	0.18/0.26	11/9	N.A.	IRS2153DS	JI						✓				✓	✓		✓	✓			✓						✓
	0.18/0.26	11/9	N.A.	IRS21531DS	JI						✓				✓	✓		✓	✓			✓						✓
	0.2/0.35	8.9/8.2	200/220	IR2106S	JI																	✓						
	0.2/0.35	8.9/8.2	200/220	IR21064S	JI												✓						✓					
	0.2/0.35	8.9/8.2	200/220	IR2108S	JI													✓				✓						
	0.2/0.35	8.9/8.2	200/220	IR21084S	JI								✓				✓	✓					✓					
	0.2/0.35	8.9/8.2	200/750	IR2109S	JI													✓	✓			✓						
	0.2/0.35	8.9/8.2	200/750	IR21091S	JI								✓					✓	✓			✓						
	0.2/0.35	8.9/8.2	200/750	IR21094S	JI								✓				✓	✓	✓				✓					
	0.2/0.35	8.9/8.2	200/220	IR2308S	JI													✓				✓						
	0.2/0.35	8.9/8.2	200/220	IR25606S	JI													✓				✓						
	0.2/0.35	8.9/8.2	200/220	IR25604S	JI																	✓						
	0.2/0.35	4.1/3.8	200/220	IR2301S	JI																	✓						
	0.2/0.35	8.9/8.2	200/220	IRS2301S	JI																	✓						
	0.2/0.35	4.1/3.8	200/750	IR2302S	JI													✓	✓			✓						
	0.21/0.36	8.9/8.2	150/160	IR2101S	JI																	✓						✓
	0.21/0.36	8.9/8.2	150/160	IRS2101S	JI																	✓						✓
	0.21/0.36	8.9/8.2	150/160	IR2102S	JI																	✓						
	0.21/0.36	8.9/8.2	150/680	IR2103S	JI													✓				✓						
	0.21/0.36	8.9/8.2	150/680	IR2104S	JI													✓	✓			✓						
	0.21/0.36	8.9/8.2	150/680	IR25602S	JI													✓	✓			✓						
	0.21/0.36	8.9/8.2	200/220	IRS2106S	JI																	✓						✓
	0.21/0.36	8.9/8.2	200/220	IRS21064S	JI												✓						✓					
	0.22/0.48	8.9/7.7	500/500	IRS2890DS	JI					✓	✓	✓						✓					✓					
	0.25/0.5	8.6/8.2	150/750	IR2111S	JI													✓				✓						
	0.25/0.5	8.6/8.2	105/125	IR2112S	JI														✓					✓				
	0.25/0.5	8.6/8.2	130/135	IRS2112S	JI												✓		✓					✓				✓
	0.29/0.6	8.9/8.2	150/680	IRS2103S	JI													✓				✓						✓
	0.29/0.6	8.9/8.2	150/680	IRS2104S	JI													✓	✓			✓						✓
	0.29/0.6	8.9/8.2	200/220	IRS2108S	JI													✓				✓						✓

*Coming soon

Half-bridge & high and low side gate driver IC (continued)

Typical connection

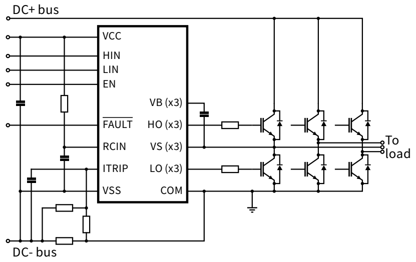


Voltage class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Features (see page 54)										Package (see page 55)							
						Desaturation protection	Enable	Fault reporting	Integrated bootstrap diode	Over-current protection	Programmable dead time	Separate pin for logic ground	Shoot-through protection	Shutdown	Soft over-current shutdown	DSO-8	DSO-14	DSO-16 WB	SSOP-24	VDSON-8	VSON-10	VQFN-14	CHIP
600	0.29/0.6	8.9/8.2	200/220	IRS21084S	JI						✓	✓	✓				✓						
	0.29/0.6	8.9/8.2	200/750	IRS2109S	JI								✓	✓		✓							✓
	0.29/0.6	8.9/8.2	200/750	IRS21091S	JI						✓		✓			✓							
	0.29/0.6	8.9/8.2	200/750	IRS21094S	JI						✓	✓	✓	✓			✓						
	0.29/0.6	8.6/8.2	150/750	IRS2111S	JI								✓			✓							✓
	0.29/0.6	8.9/8.2	150/150	IRS2304S	JI								✓			✓							✓
	0.29/0.6	8.9/8.2	200/220	IRS2308S	JI								✓			✓							✓
	0.36/0.7	9.1/8.3	300/310	2EDL05N06PF	SOI				✓				✓			✓							
	0.36/0.7	9.1/8.3	300/310	2EDL05N06PJ	SOI				✓				✓				✓						
	0.36/0.7	12.5/11.6	400/420	2EDL05I06PF	SOI				✓				✓			✓							
	0.36/0.7	12.5/11.6	400/420	2EDL05I06PJ	SOI				✓				✓				✓						
	0.36/0.7	12.5/11.6	400/420	2EDL05I06BF	SOI				✓							✓							
	1.9/2.3	8.9/8.2	220/180	IRS2181S	JI											✓							✓
	1.9/2.3	8.9/8.2	220/180	IR2181S	JI											✓							
	1.9/2.3	8.9/8.2	220/180	IR21814S	JI							✓					✓						
	1.9/2.3	8.9/8.2	220/180	IRS21814S	JI							✓					✓						
	1.9/2.3	8.9/8.2	220/180	IRS21814M	JI							✓										✓	
	1.9/2.3	8.9/8.2	220/180	IRS2183S	JI								✓			✓							✓
	1.9/2.3	8.9/8.2	220/180	IR2183S	JI								✓			✓							
	1.9/2.3	8.9/8.2	220/180	IR21834S	JI						✓	✓	✓				✓						
	1.9/2.3	8.9/8.2	220/180	IRS21834S	JI						✓	✓	✓				✓						
	1.9/2.3	8.9/8.2	270/680	IRS2184S	JI								✓	✓		✓							✓
	1.9/2.3	8.9/8.2	270/680	IR2184S	JI								✓	✓		✓							
	1.9/2.3	8.9/8.2	270/680	IR21844S	JI						✓	✓	✓	✓			✓						
	1.9/2.3	8.9/8.2	270/680	IRS21844S	JI						✓	✓	✓	✓			✓						
	1.9/2.3	8.9/8.2	270/680	IRS21844M	JI						✓	✓	✓	✓								✓	
	2.5/2.5	8.6/8.2	94/120	IR2113S	JI							✓		✓				✓					✓
	2.5/2.5	8.6/8.2	94/120	IR25607S	JI							✓		✓				✓					
	2.5/2.5	8.5/8.2	120/130	IRS2113S	JI							✓		✓				✓					✓
	2.5/2.5	8.5/8.2	120/130	IRS2113M	JI							✓		✓								✓	✓
	2/3	10.2/9.3	440/440	IR2114SS	JI	✓		✓				✓	✓		✓				✓				
	2.3/2.8	9.1/8.3	300/310	2EDL23N06PJ	SOI		✓	✓	✓	✓		✓	✓				✓						
	2.3/2.8	12.5/11.6	400/420	2EDL23I06PJ	SOI		✓	✓	✓	✓		✓	✓				✓						
	4/4	8.9/8.2	170/170	IRS2186S	JI											✓							✓
	4/4	8.9/8.2	170/170	IRS21864S	JI							✓					✓						
	4/4	6/5.5	170/170	IRS21867S	JI											✓							
500	2.5/2.5	8.6/8.2	94/120	IR2110S	JI							✓		✓				✓					
	2.5/2.5	8.5/8.2	120/130	IRS2110S	JI							✓		✓				✓					✓
200	0.29/0.6	8.9/8.2	150/160	IRS2005S	JI											✓							
	0.29/0.6	8.9/8.2	150/160	IRS2005M	JI																	✓	
	0.29/0.6	8.9/8.2	150/160	IRS2007S	JI								✓			✓							
	0.29/0.6	8.9/8.2	150/160	IRS2007M	JI								✓									✓	
	0.29/0.6	8.9/8.2	150/680	IRS2008S	JI								✓	✓		✓							
	0.29/0.6	8.9/8.2	150/680	IRS2008M	JI								✓	✓								✓	
	1/1	9/8.2	75/80	IR2011S	JI											✓							
	1/1	9/8.2	60/60	IRS2011S	JI											✓							✓
	3/3	8.6/8.2	65/95	IR2010S	JI							✓		✓				✓					
160	1/2	5/4.5	50/50	2ED2732S01G*	SOI				✓			✓									✓		
	1/2	5/4.5	50/50	2ED2742S01G*	SOI				✓			✓	✓								✓		
	2/4	5/4.5	50/50	2ED2734S01G*	SOI				✓			✓									✓		
	2/4	5/4.5	50/50	2ED2744S01G*	SOI				✓			✓	✓								✓		
	4/8	5/4.5	50/50	2ED2738S01G*	SOI				✓			✓									✓		
	4/8	5/4.5	50/50	2ED2748S01G*	SOI				✓			✓	✓								✓		
120	2/6	7/6.5	47/47	2EDL8012G*	JI				✓											✓			
	2/6	7/6.5	47/47	2EDL8112G*	JI				✓				✓							✓			
	3/6	7/6.5	47/47	2EDL8023G*	JI				✓											✓			
	3/6	7/6.5	47/47	2EDL8123G*	JI				✓				✓							✓			
	4/6	7/6.5	47/47	2EDL8024G NEW	JI				✓											✓			
	4/6	7/6.5	47/47	2EDL8124G*	JI				✓				✓							✓			
	3/6	7/6.5	47/47	2EDL8023G3C*	JI				✓												✓		
	3/6	7/6.5	47/47	2EDL8123G3C*	JI				✓				✓								✓		
	4/6	7/6.5	47/47	2EDL8024G3C*	JI				✓												✓		
	4/6	7/6.5	47/47	2EDL8124G3C*	JI				✓				✓								✓		

*Coming soon

Three-phase gate driver IC

Typical connection

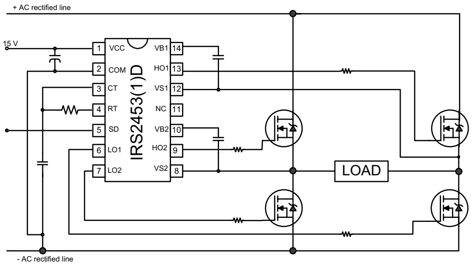


Voltage class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Brake chopper	Desaturation protection	Enable	Fault reporting	Integrated bootstrap diode	Operaltional amplifier	Over-current protection	Power Manangement Unit	Programmable dead time	Programmable Fault Clear / Reset	Programmable OCP Reference Threshold	Programmable Op-amp Voltage Gain	Trickle Charge Pumps (100% duty cycle)	Separate pin for logic ground	Shoot-through protection	Shutdown	Two stage turn on	DSO-20 WB	DSO-24	DSO-28 WB	LCC-32	MQFP-64	TSSOP-28	VQFN-28	VQFN-32	VQFN-34	VQFN-48	CHIP
						Features (see page 54)																	Package (see page 55)										
1200	0.35/0.65	11.4/10.4	600/600	6ED2230S12T	SOI			✓	✓	✓		✓			✓				✓	✓				✓									✓
	0.25/0.5	8.6/8.2	700/750	IR2233S	JI				✓		✓	✓							✓	✓	✓				✓								
	0.25/0.5	8.6/8.2	700/750	IR2233J	JI				✓		✓	✓							✓	✓	✓					✓							
	0.25/0.5	10.4/9.4	700/750	IR2235S	JI				✓		✓	✓							✓	✓	✓				✓								
	0.25/0.5	10.4/9.4	700/750	IR2235J	JI				✓		✓	✓							✓	✓	✓					✓							
	0.35/0.54	11.2/10.2	550/550	IR2238Q	JI	✓	✓		✓			✓		✓					✓		✓	✓					✓						
600	0.165/0.375	11.7/9.8	490/530	6ED003L06-F2	SOI			✓	✓			✓							✓						✓								✓
	0.165/0.375	11.7/9.8	490/530	6EDL04I06NT	SOI			✓	✓	✓		✓							✓						✓								✓
	0.165/0.375	11.7/9.8	490/530	6EDL04I06PT	SOI			✓	✓	✓		✓							✓						✓								✓
	0.165/0.375	9/8.1	530/530	6EDL04N06PT	SOI			✓	✓	✓		✓							✓						✓								✓
	0.2/0.35	8.9/8.2	400/425	IR2136S	JI			✓	✓			✓							✓						✓	✓							✓
	0.2/0.35	11.1/10.9	400/425	IR21363S	JI			✓	✓			✓							✓						✓								✓
	0.2/0.35	11.1/10.9	400/425	IR21363J	JI			✓	✓			✓							✓							✓							✓
	0.2/0.35	10.4/9.4	530/500	IR21364S	JI			✓	✓			✓							✓						✓								✓
	0.2/0.35	11.1/10.9	530/530	IRS2334M	JI																								✓				
	0.2/0.35	11.1/10.9	530/530	IRS2334S	JI																		✓										
	0.2/0.35	8.9/8.2	530/530	IRS2336S	JI			✓	✓			✓							✓						✓								
	0.2/0.35	8.9/8.2	530/530	IRS2336DJ	JI			✓	✓	✓		✓							✓							✓							✓
	0.2/0.35	8.9/8.2	530/530	IRS2336DM	JI			✓	✓	✓		✓							✓												✓		✓
	0.2/0.35	8.9/8.2	530/530	IRS2336DS	JI			✓	✓	✓		✓							✓						✓								✓
	0.2/0.35	8.9/8.2	530/530	IRS23364DJ	JI			✓	✓	✓		✓							✓							✓							✓
	0.2/0.35	8.9/8.2	530/530	IRS23364DS	JI			✓	✓	✓		✓							✓						✓								✓
	0.2/0.35	8.9/8.2	530/530	IRS23365DM	JI			✓	✓	✓		✓							✓												✓		
	0.25/0.5	9/8.7	425/675	IR2130S	JI				✓		✓	✓							✓						✓								✓
	0.25/0.5	9/8.7	425/675	IR2130J	JI				✓		✓	✓							✓							✓							✓
	0.25/0.5	9/8.7	425/675	IR2132S	JI				✓		✓	✓							✓						✓								✓
	0.25/0.5	9/8.7	425/675	IR2132J	JI				✓		✓	✓							✓							✓							✓
	0.25/0.5	8.6/8.2	700/750	IR2133S	JI				✓		✓	✓							✓		✓				✓								
	0.25/0.5	8.6/8.2	700/750	IR2133J	JI				✓		✓	✓							✓		✓					✓							
	0.25/0.5	10.4/9.4	700/750	IR2135S	JI				✓		✓	✓							✓		✓				✓								✓
	0.25/0.5	10.4/9.4	700/750	IR2135J	JI				✓		✓	✓							✓		✓					✓							✓
200	0.165/0.375	11.7/9.8	490/530	6ED003L02-F2	SOI			✓	✓			✓							✓									✓					
	0.165/0.375	9/8.1	530/530	6EDL04N02PR	SOI			✓	✓	✓		✓							✓	✓								✓					
160	1/2	7.5/6.8	100/100	6ED2742S01Q*	SOI			✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓										✓			
60	1.5/1.5	5.8/4.5	140/140	6EDL7141 NEW	SOI																											✓	

*Coming soon

Full-bridge gate driver IC

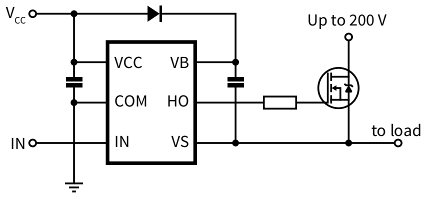
Typical connection



Voltage class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/ off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Features (see page 54)			Package (see page 55)
						Integrated bootstrap diode	Shoot-through protection	Shutdown	DSO-14
600	0.18/0.26	11/9	N.A.	IRS2453DS	JI	✓	✓	✓	✓
				IRS24531DS	JI	✓	✓	✓	✓

Single high-side gate driver IC

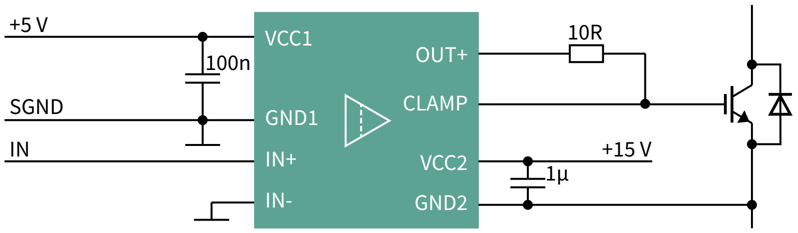
Typical connection



Voltage class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Features (see page 54)		Package (see page 55)		
						Fault reporting	Over-current protection	DSO-8	DSO-16 WB	SOT23-6
600	0.16/0.24	9/8	215/140	IRS25752L	JI					✓
	0.25/0.5	8.6/8.2	105/125	IR2117S	JI			✓		
	0.25/0.5	8.6/8.2	105/125	IR2118S	JI			✓		
	0.25/0.5	10.3/9	150/200	IR2127S	JI	✓	✓	✓		
	0.25/0.5	10.3/9	150/200	IR2128S	JI	✓	✓	✓		
	0.25/0.5	7.2/6.8	150/200	IR21271S	JI	✓	✓	✓		
	0.29/0.6	8.6/8.2	105/125	IRS2117S	JI			✓		
	0.29/0.6	8.6/8.2	105/125	IRS2118S	JI			✓		
	0.29/0.6	10.3/9	150/150	IRS2127S	JI	✓	✓	✓		
	0.29/0.6	7.2/6.8	150/150	IRS21271S	JI	✓	✓	✓		
500	1.6/3.3	9.2/8.3	200/170	IR2125S	JI	✓	✓		✓	
200	0.16/0.24	9/8	215/140	IRS20752L	JI					✓
100	0.16/0.24	9/8	215/140	IRS10752L	JI					✓

Galvanic isolated gate driver ICs

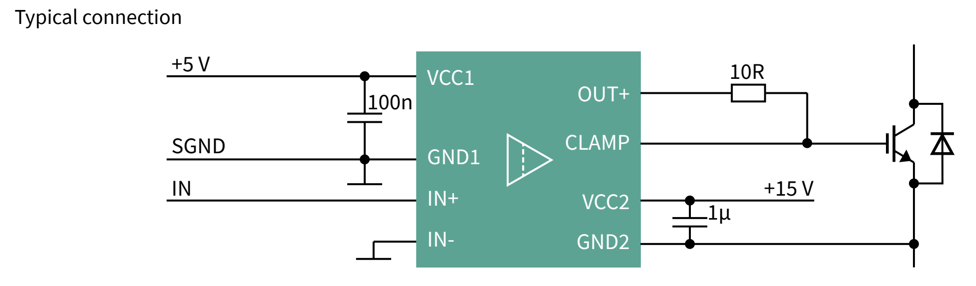
Typical connection



Confi-guration	Voltage class [V]	Isolation Type	Isolation rating	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Active Miller clamp	Analog configurability (Desat, soft-off)	Desaturation protection	Digital I2C configurability	Disable	Fast output clamping for supply below UVLO	Fault reporting	Fault reset	Separate pin for logic ground	Separate sink / source outputs	Soft off	Two-level turn-off	Two-level Slew rate control	UL 1577	VDE 0884-10/11	DSO-8 150mil	DSO-8 300mil	DSO-16 150mil	DSO-16 fine pitch 300 mil	DSO-16 300 mil	TFLGA-13 (5x5)
									Features (see page 54)															Package (see page 55)					
1-channel	2300	Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	5.5/5.5	10/8	90/90	1ED3120MC12H NEW	CT									✓	✓				✓	✓		✓				
		Functional	V_{ISO} = 5.7 kV(rms)	5.5/5.5	10/8	90/90	1ED3120MU12H NEW	CT									✓	✓				✓			✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	5.5/5.5	12.5/10.5	90/90	1ED3121MC12H NEW	CT									✓	✓				✓	✓		✓				
		Functional	V_{ISO} = 5.7 kV(rms)	5.5/5.5	12.5/10.5	90/90	1ED3121MU12H NEW	CT									✓	✓				✓			✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	5.5/5.5	12.5/10.5	280/280	1ED3131MC12H NEW	CT									✓	✓				✓	✓		✓				
		Functional	V_{ISO} = 5.7 kV(rms)	5.5/5.5	12.5/10.5	280/280	1ED3131MU12H NEW	CT									✓	✓				✓			✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	10/9	10/8	90/90	1ED3122MC12H NEW	CT	✓								✓					✓	✓		✓				
		Functional	V_{ISO} = 5.7 kV(rms)	10/9	10/8	90/90	1ED3122MU12H NEW	CT	✓								✓					✓			✓				
		Functional	V_{ISO} = 3 kV(rms)	10/9	12.5/10.5	90/90	1ED3125MU12F NEW	CT	✓								✓					✓		✓					
		Functional	V_{ISO} = 3 kV(rms)	14.2/12	12.5/10.5	90/90	1ED3127MU12F*	CT	✓								✓					✓		✓					
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	13.5/14	10/8	90/90	1ED3123MC12H NEW	CT									✓	✓				✓	✓		✓				
		Functional	V_{ISO} = 5.7 kV(rms)	13.5/14	10/8	90/90	1ED3123MU12H NEW	CT									✓	✓				✓			✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	13.5/14	12.5/10.5	90/90	1ED3124MC12H NEW	CT									✓	✓				✓	✓		✓				
		Functional	V_{ISO} = 5.7 kV(rms)	13.5/14	12.5/10.5	90/90	1ED3124MU12H NEW	CT									✓	✓				✓			✓				
		Functional	V_{ISO} = 3 kV(rms)	13.5/14	12.5/10.5	90/90	1ED3124MU12F NEW	CT									✓	✓				✓		✓					
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	10/10	12.5/10.4	110/110	1ED3240MC12H NEW	CT									✓				✓	✓	✓		✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	10/10	12.5/10.4	110/110	1ED3250MC12H NEW	CT									✓				✓	✓	✓		✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	18/18	12.5/10.4	110/110	1ED3251MC12H NEW	CT	✓								✓				✓	✓	✓		✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	18/18	12.5/10.4	110/110	1ED3241MC12H NEW	CT	✓								✓				✓	✓	✓		✓				
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	3.3/6	12.6/10.4	86/80	1ED3320MC12N NEW	CT	✓		✓				✓	✓	✓	✓	✓			✓	✓						
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	6/8.5	12.6/10.4	86/80	1ED3321MC12N NEW	CT	✓		✓				✓	✓	✓	✓	✓			✓	✓						
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	6/8.5	14.2/11.9	86/80	1ED3322MC12N NEW	CT	✓		✓				✓	✓	✓	✓				✓	✓						
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	6/8.5	12.6/10.4	86/80	1ED3323MC12N NEW	CT	✓		✓				✓	✓	✓					✓	✓						
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	3.8/2.5	12.6/10.4	236/244	1ED3431MC12M NEW	CT	✓	✓	✓				✓	✓	✓	✓	✓			✓	✓				✓		
		Functional	V_{ISO} = 5.7 kV(rms)	3.8/2.5	12.6/10.4	236/244	1ED3431MU12M NEW	CT	✓	✓	✓				✓	✓	✓	✓	✓			✓					✓		
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	3.8/2.5	Adjustable	236/244	1ED3830MC12M NEW	CT	✓		✓	✓			✓	✓	✓	✓	✓	✓		✓	✓				✓		
		Functional	V_{ISO} = 5.7 kV(rms)	3.8/2.5	Adjustable	236/244	1ED3830MU12M NEW	CT	✓		✓	✓			✓	✓	✓	✓	✓	✓		✓					✓		
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	7.5/5	12.6/10.4	236/244	1ED3461MC12M NEW	CT	✓	✓	✓				✓	✓	✓	✓	✓			✓	✓				✓		
		Functional	V_{ISO} = 5.7 kV(rms)	7.5/5	12.6/10.4	236/244	1ED3461MU12M NEW	CT	✓	✓	✓				✓	✓	✓	✓	✓			✓					✓		
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	7.5/5	Adjustable	236/244	1ED3860MC12M NEW	CT	✓		✓	✓			✓	✓	✓	✓	✓	✓		✓	✓				✓		
		Functional	V_{ISO} = 5.7 kV(rms)	7.5/5	Adjustable	236/244	1ED3860MU12M NEW	CT	✓		✓	✓			✓	✓	✓	✓	✓	✓		✓					✓		
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	11/7.5	12.6/10.4	236/244	1ED3491MC12M NEW	CT	✓	✓	✓				✓	✓	✓	✓	✓			✓	✓				✓		
		Functional	V_{ISO} = 5.7 kV(rms)	11/7.5	12.6/10.4	236/244	1ED3491MU12M NEW	CT	✓	✓	✓				✓	✓	✓	✓	✓			✓					✓		
		Reinforced	V_{IORM} = 1.7 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	11/7.5	Adjustable	236/244	1ED3890MC12M NEW	CT	✓		✓	✓			✓	✓	✓	✓	✓	✓		✓	✓				✓		
		Functional	V_{ISO} = 5.7 kV(rms)	11/7.5	Adjustable	236/244	1ED3890MU12M NEW	CT	✓		✓	✓			✓	✓	✓	✓	✓	✓		✓					✓		
	1200	Basic	V_{IORM} = 1.4 kV; V_{IOTM}=6 kV; V_{ISO} = 3.7 kV(rms)	2/2	12/11	165/170	1ED020I12-B2	CT	✓		✓				✓	✓	✓					✓	✓					✓	
		Basic	V_{IORM} = 1.4 kV; V_{IOTM}=6 kV; V_{ISO} = 3.7 kV(rms)	2/2	12/11	1750/1750	1ED020I12-BT	CT	✓		✓				✓	✓	✓			✓		✓	✓					✓	
		Functional	V_{ISO} = ± 1.2 kV	2/2	12/11	165/170	1ED020I12-F2	CT	✓		✓				✓	✓	✓											✓	
		Functional	V_{ISO} = ± 1.2 kV	2/2	12/11	1750/1750	1ED020I12-FT	CT	✓		✓				✓	✓	✓			✓								✓	
		Reinforced	V_{IORM} = 1.4 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	4/8	5.0/4.5	37/37	1EDS5663H	CT					✓					✓		✓		✓	✓					✓	
		Functional	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 3 kV(rms)	5.4/9.8	12.2/11.5	45/45	1EDB6275F	CT					✓	✓				✓				✓		✓					
		Functional	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 3 kV(rms)	5.4/9.8	4.2/3.9	45/45	1EDB7275F	CT					✓	✓				✓				✓		✓					
		Functional	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 3 kV(rms)	5.4/9.8	8/7	45/45	1EDB8275F	CT					✓	✓				✓				✓		✓					
		Functional	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 3 kV(rms)	5.4/9.8	14.9/14.4	45/45	1EDB9275F	CT					✓	✓				✓				✓		✓					
		Functional	V_{IOWM} = 510 V(rms); V_{ISO} = 1.5 kV(rms)	4/8	5/4.5	37/37	1EDF5673F	CT					✓					✓		✓						✓			
		Functional	V_{IOWM} = 460 V(rms); V_{ISO} = 1.5 kV(rms)	4/8	5/4.5	37/37	1EDF5673K	CT					✓					✓		✓									✓
		Functional	V_{ISO} = ± 1.2 kV	1.3/0.9	12/11.1	300/300	1EDI05I12AF	CT									✓	✓						✓					
		Functional	V_{ISO} = ± 1.2 kV	1.3/0.9	12/11.1	300/300	1EDI05I12AH	CT									✓	✓							✓				
		Functional	V_{ISO} = 2.5 kV(rms)	1.3/0.9	12/11.1	300/300	1EDC05I12AH	CT									✓	✓				✓			✓				
		Functional	V_{ISO} = ± 1.2 kV	2.2/2.3	12/11.1	300/300	1EDI10I12MF	CT	✓								✓							✓					
		Functional	V_{ISO} = ± 1.2 kV	2.2/2.3	12/11.1	300/300	1EDI10I12MH	CT	✓								✓								✓				
		Functional	V_{ISO} = 2.5 kV(rms)	2.2/2.3	12/11.1	300/300	1EDC10I12MH	CT	✓								✓					✓			✓				

Galvanic isolated gate driver ICs (continued)

Typical connection



Confi-guration	Voltage class [V]	Isolation Type	Isolation rating	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/on typ. [ns]	Base PN	Technology	Features (see page 54)																				Package (see page 55)									
									Active Miller clamp	Comparator	Deadtime control	Desaturation protection	Digital I2C configurability	Disable	Enable	Fast output clamping for supply below UVLO	Fault reporting	Fault reset	Operational amplifier (OPAMP)	Over-current protection	Separate pin for logic ground	Separate sink / source outputs	Shoot-through protection	Shutdown	Soft off	Two-level turn-off	UL 1577	VDE 0884-10/11	DSO-8 150mil	DSO-8 300mil	DSO-14 150mil	DSO-14 300mil	DSO-16 150mil	DSO-16 300 mil	DSO-18	DSO-36	TFLGA-13 (4x4)	TFLGA-13 (5x5)
1-channel	1200	Functional	V_{ISO} = ±1.2 kV	4/3.5	9.1/8.5	120/115	1EDI20N12AF	CT													✓	✓							✓									
		Functional	V_{ISO} = ±1.2 kV	4/3.5	12/11.1	125/120	1EDI20H12AH	CT													✓	✓								✓								
		Functional	V_{ISO} = 2.5 kV(rms)	4/3.5	12/11.1	125/120	1EDC20H12AH	CT													✓	✓					✓			✓								
		Functional	V_{ISO} = ±1.2 kV	4/3.5	12/11.1	300/300	1EDI20I12AF	CT													✓	✓							✓									
		Functional	V_{ISO} = ±1.2 kV	4/3.5	12/11.1	300/300	1EDI20I12AH	CT													✓	✓								✓								
		Functional	V_{ISO} = 2.5 kV(rms)	4/3.5	12/11.1	300/300	1EDC20I12AH	CT													✓	✓					✓			✓								
		Functional	V_{ISO} = ±1.2 kV	4.4/4.1	12/11.1	300/300	1EDI20I12MF	CT	✓												✓								✓									
		Functional	V_{ISO} = ±1.2 kV	4.4/4.1	12/11.1	300/300	1EDI20I12MH	CT	✓												✓									✓								
		Functional	V_{ISO} = 2.5 kV(rms)	4.4/4.1	12/11.1	300/300	1EDC20I12MH	CT	✓												✓						✓			✓								
		Functional	V_{ISO} = ±1.2 kV	5.9/6.2	12/11.1	300/300	1EDI30I12MF	CT	✓												✓								✓									
		Functional	V_{ISO} = ±1.2 kV	5.9/6.2	12/11.1	300/300	1EDI30I12MH	CT	✓												✓									✓								
		Functional	V_{ISO} = 2.5 kV(rms)	5.9/6.2	12/11.1	300/300	1EDC30I12MH	CT	✓												✓						✓			✓								
		Functional	V_{ISO} = ±1.2 kV	7.5/6.8	12/11.1	300/300	1EDI40I12AF	CT													✓	✓							✓									
		Functional	V_{ISO} = ±1.2 kV	7.5/6.8	12/11.1	300/300	1EDI40I12AH	CT													✓	✓								✓								
		Functional	V_{ISO} = 2.5 kV(rms)	7.5/6.8	12/11.1	300/300	1EDC40I12AH	CT													✓	✓					✓			✓								
		Functional	V_{ISO} = ±1.2 kV	10/9.4	9.1/8.5	120/115	1EDI60N12AF	CT													✓	✓							✓									
		Functional	V_{ISO} = ±1.2 kV	10/9.4	12/11.1	125/120	1EDI60H12AH	CT													✓	✓								✓								
		Functional	V_{ISO} = 2.5 kV(rms)	10/9.4	12/11.1	125/120	1EDC60H12AH	CT													✓	✓					✓			✓								
		Functional	V_{ISO} = ±1.2 kV	10/9.4	12/11.1	300/300	1EDI60I12AF	CT													✓	✓							✓									
		Functional	V_{ISO} = ±1.2 kV	10/9.4	12/11.1	300/300	1EDI60I12AH	CT													✓	✓								✓								
		Functional	V_{ISO} = 2.5 kV(rms)	10/9.4	12/11.1	300/300	1EDC60I12AH	CT													✓	✓					✓			✓								
		Reinforced	V_{IORM} = 1.4 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5 kV(rms)	SRC/2	11.9/11	460/460	1EDS20I12SV	CT				✓			✓		✓	✓		✓	✓				✓	✓	✓	✓								✓		
		Functional	V_{ISO} = 5 kV(rms)	SRC/2	11.9/11	460/460	1EDU20I12SV	CT				✓			✓		✓	✓		✓	✓				✓	✓	✓									✓		
		Functional	V_{ISO} = ±1.2 kV	SRC/2	11.9/11	460/460	1EDI20I12SV	CT				✓			✓		✓	✓		✓	✓				✓	✓										✓		
2-channel	1200**	Functional	V_{ISO} = ± 1.2 kV	2/2	12/11	165/170	2ED020I12-F2	CT	✓			✓					✓	✓			✓															✓		
		Reinforced	V_{IORM} = 1.4 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	1/2	4.2/3.9	37/37	2EDS7165H	CT						✓		✓											✓	✓						✓				
		Reinforced	V_{IORM} = 1.4 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	1/2	8/7	37/37	2EDS8165H	CT						✓		✓											✓	✓						✓				
		Reinforced	V_{IORM} = 1.4 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	4/8	8/7	37/37	2EDS8265H	CT						✓		✓											✓	✓						✓				
		Reinforced	V_{IORM} = 1.4 kV(rms); V_{IOTM}=8 kV; V_{ISO} = 5.7 kV(rms)	4/8	14.9/14.4	37/37	2EDS9265H	CT						✓		✓											✓	✓						✓				
		Reinforced	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 5.7 kV(rms)	5 / 9	4.2/3.9	38 / 36	2EDR7259X*	CT			✓			✓		✓							✓					✓	✓				✓						
		Reinforced	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 5.7 kV(rms)	5 / 9	8/7	38 / 36	2EDR8259H*	CT			✓			✓		✓							✓					✓	✓						✓				
		Reinforced	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 5.7 kV(rms)	5 / 9	8/7	38 / 36	2EDR8259X*	CT			✓			✓		✓							✓					✓	✓				✓						
		Reinforced	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 5.7 kV(rms)	5 / 9	14.9/14.4	38 / 36	2EDR9259X*	CT			✓			✓		✓							✓					✓	✓				✓						
		Reinforced	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 5.7 kV(rms)	5 / 9	8/7	38 / 36	2EDR8258X*	CT			✓				✓	✓							✓					✓	✓				✓						
		Reinforced	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 5.7 kV(rms)	5 / 9	12.2/11.5	38 / 36	2EDR6258X*	CT			✓				✓	✓							✓					✓	✓				✓						
		Reinforced	V_{IOTM} = 4.2 kV(peak); V_{ISO} = 5.7 kV(rms)	5 / 9	14.9/14.4	38 / 36	2EDR9258X*	CT			✓				✓	✓							✓					✓	✓				✓						
		Basic	V_{IORM} = 800 V(rms); V_{IOTM}=3.5 kV; V_{ISO} = 2.5 kV(rms)	5 / 9	4.2/3.9	38 / 36	2EDB7259K*	CT			✓			✓		✓							✓					✓											✓
		Basic	V_{IORM} = 800 V(rms); V_{IOTM}=3.5 kV; V_{ISO} = 2.5 kV(rms)	5 / 9	8/7	38 / 36	2EDB8259K*	CT			✓			✓		✓							✓					✓											✓
		Basic	V_{IORM} = 1 kV(rms); V_{IOTM}=4.2 kV; V_{ISO} = 3 kV(rms)	5 / 9	8/7	38 / 36	2EDB8259F*	CT						✓		✓																	✓					
		Basic	V_{IORM} = 1 kV(rms); V_{IOTM}=4.2 kV; V_{ISO} = 3 kV(rms)	5 / 9	4.2/3.9	38 / 36	2EDB7259Y*	CT						✓		✓															✓							
		Basic	V_{IORM} = 1 kV(rms); V_{IOTM}=4.2 kV; V_{ISO} = 3 kV(rms)	5 / 9	8/7	38 / 36	2EDB8259Y*	CT						✓																✓							
		Basic	V_{IORM} = 1 kV(rms); V_{IOTM}=4.2 kV; V_{ISO} = 3 kV(rms)	5 / 9	14.9/14.4	38 / 36	2EDB9259Y*	CT						✓																✓							
		Functional	V_{IOWM} = 510 V(rms); V_{ISO} = 1.5 kV(rms)	1/2	4.2/3.9	37/37	2EDF7175F	CT						✓		✓																	✓					
		Functional	V_{IOWM} = 510 V(rms); V_{ISO} = 1.5 kV(rms)	4/8	4.2/3.9	37/37	2EDF7275F	CT						✓		✓																	✓					
		Functional	V_{IOWM} = 460 V(rms); V_{ISO} = 1.5 kV(rms)	4/8	4.2/3.9	37/37	2EDF7275K	CT						✓		✓																						✓
		Functional	V_{IOWM} = 460 V(rms); V_{ISO} = 1.5 kV(rms)	4/8	4.2/3.9	37/37	2EDF7235K	CT			✓			✓									✓																✓
		Functional	V_{IOWM} = 510 V(rms); V_{ISO} = 1.5 kV(rms)	4/8	8/7	37/37	2EDF8275F	CT						✓		✓																	✓					
		Functional	V_{IOWM} = 510 V(rms); V_{ISO} = 1.5 kV(rms)	4/8	14.9/14.4	37/37	2EDF9275F	CT						✓		✓																	✓					
	650**	Basic	V_{IORM} = 500 V(rms); V_{IOTM}=3.2 kV; V_{ISO} = 2.3 kV(rms)	5 / 9	4.2/3.9	38 / 36	2EDB7259A*	CT			✓			✓		✓							✓					✓										✓	
		Basic	V_{IORM} = 500 V(rms); V_{IOTM}=3.2 kV; V_{ISO} = 2.3 kV(rms)	5 / 9	8/7	38 / 36	2EDB8259A*	CT			✓			✓		✓							✓					✓										✓	
2-channel (Isolation on high-side only)	1200	Functional on high side	V_{ISO} = ± 1.2 kV	1.5/2.5	12.2/11.2	85/85	2ED020I12-FI	CT		✓									✓				✓	✓											✓			
	650	Functional on high side	V_{ISO} = ± 650 V	1.5/2.5	12.2/11.2	85/85	2ED020I06-FI	CT															✓	✓											✓			
	250	Functional on high side	V_{ISO} = ±250 V (high-side to low-side)	5.2/9.2	7/6.4	37/37	2EDF5215F*	CT								✓													✓									

*Coming soon / **Isolation between primary and secondary. If the driver is used in half-bridge configuration, the channel-to-channel will limit the working voltage / SRC: slew rate control

Automotive gate driver ICs

Configuration	Work. volt. class [V]	I_{O+}/I_{O-} typ. [mA]	UVLO on/off typ. [V]	Prop delay off/ on typ. [ns]	Base PN	Technology	Buffer	Desaturation protection	Enable	Fault reporting	Operational amplifier	Over-current protection	Programmable frequency	Programmable dead time	Self-oscillating (Oscillator)	Separate pin for logic ground	Shoot-through protection	Shutdown	SPI Interface	Synchronous rectification	Two-level turn-off	UL 1577	VDE 0884-11	ISO 26262 ready	ISO 26262 compliant	DSO-8	DSO-14	DSO-16 NB	DSO-16 WB	DSO-20 (sine pitch)	DSO-28	DSO-36	TSDSO-24
							Features (see page 54)																			Package (see page 55)							
1-channel isolated	1200	12/12	12.6/11.8	60/60	1EDI3020AS	CT	✓	✓	✓	✓		✓					✓				✓	✓	✓		✓					✓			
		12/12	12.6/11.8	60/60	1EDI3021AS	CT	✓	✓	✓	✓		✓					✓				✓	✓	✓		✓					✓			
		12/12	12.6/11.8	60/60	1EDI3023AS	CT	✓	✓	✓	✓		✓					✓				✓	✓	✓		✓					✓			
		12/12	12.6/11.8	60/60	1EDI3030AS	CT	✓	✓	✓	✓		✓					✓				✓	✓	✓		✓					✓			
		12/12	12.6/11.8	60/60	1EDI3031AS	CT	✓	✓	✓	✓		✓					✓				✓	✓	✓		✓					✓			
		12/12	12.6/11.8	60/60	1EDI3033AS	CT	✓	✓	✓	✓		✓					✓				✓	✓	✓		✓					✓			
		2.1/2.1	12/11	165/170	1ED020I12FA2	CT		✓		✓												✓	✓							✓			
		2/2	12/11	1900/1750	1ED020I12FTA	CT		✓		✓											✓	✓	✓							✓			
		2/2	12.5/11.7	215/215	1EDI2004AS	CT		✓	✓	✓		✓				✓					✓	✓	✓		✓							✓	
		2/2	12.5/11.7	215/215	1EDI2002AS	CT		✓	✓	✓		✓				✓					✓	✓	✓	✓								✓	
		2/2	12.5/11.7	215/215	1EDI2010AS	CT		✓	✓	✓		✓				✓					✓	✓	✓									✓	
2-channel isolated	1200	2/2	12/11	165/170	2ED020I12FA	CT		✓		✓							✓					✓	✓									✓	
Half-bridge	100	1/1	7.3/6.8	N.A.	AUIR2085S	JI			✓			✓	✓	✓	✓											✓							
High-side and low-side	600	1.9/2.3	8.9/8.2	135/135	AUIRS21811S	JI																				✓							
		1.9/2.3	8.9/8.2	200/160	AUIRS21814S	JI										✓											✓						
		1.9/2.3	8.9/8.2	200/160	AUIRS2181S	JI																				✓							
		3.5/3.5	8.9/8.2	90/90	AUIRS2191S	JI										✓												✓					
		0.2/0.35	4.1/3.8	200/220	AUIRS2301S	JI																				✓							
Single high side	600	0.5/0.5	8.6/8	140/140	AUIRS2123S	JI																				✓							
		0.5/0.5	8.6/8	140/140	AUIRS2124S	JI																				✓							
		0.29/0.6	8.6/8.2	140/140	AUIRS2117S	JI																				✓							
		0.29/0.6	7.2/6.8	150/150	AUIRS21271S	JI				✓		✓														✓							
		0.29/0.6	8.6/8.2	140/140	AUIRS2118S	JI																				✓							
	65	0.3/0.3	10/6.5	2500/2500	AUIR3241STR	N-ISO			✓	✓																✓							
	65	0.3/0.3	10/6.5	2500/2500	AUIR3242STR	N-ISO			✓	✓																✓							
Dual high-side	75	0.3/1.4	12.5/10.0	4000/7000	2ED2410-EM*	N-ISO			✓	✓		✓												✓									✓
	105	0.3/1.0	7.0/6.6	3000/3000	2ED4820-EM	N-ISO			✓	✓		✓							✓					✓									✓
Single low side	200	3/6	10.2/9.3	60/90	AUIRS1170S	N-ISO														✓						✓							

*Coming soon

Automotive MOTIX™ motor gate driver ICs

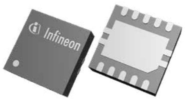
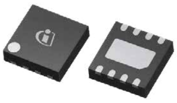
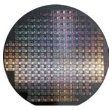
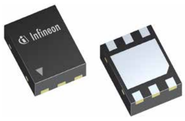
Product name	Voltage class [V]	No. of half-bridges	Communication	Product status	Qualification	Package
BLDC Driver ICs						
TLE9180D-31QK	90	3	SPI	on request	Automotive	LQFP-64
TLE9180D-21QK	90	**3**	SPI	on request	Automotive	LQFP-64
BLDC Motor System ICs						
TLE9564QX	28	**3**	SPI, LIN	active and preferred	Automotive	VQFN-48
TLE9563-3QX	28	**3**	SPI, CAN	active and preferred	Automotive	VQFN-48
DC Motor System ICs						
TLE9560-3QX	28	**2**	SPI, CAN FD, CAN PN, LIN	active and preferred	Automotive	VQFN-48
TLE9561QX	28	**4**	SPI, CAN FD	active and preferred	Automotive	VQFN-48
TLE9561-3QX	28	**4**	SPI, CAN FD, CAN PN	active and preferred	Automotive	VQFN-48
TLE9562QX	28	4	SPI, CAN FD, LIN	active and preferred	Automotive	VQFN-48
TLE9562-3QX	28	4	SPI, CAN FD, CAN PN, LIN	active and preferred	Automotive	VQFN-48
Multi MOSFET Driver						
TLE92108-232QX	28	8	SPI	active and preferred	Automotive	VQFN-48
TLE92104-232QX	28	4	SPI	active and preferred	Automotive	VQFN-48
TLE92104-131QX	28	4	SPI	active and preferred	Automotive	VQFN-48
TLE92108-231QX	28	8	SPI	active and preferred	Automotive	VQFN-48

Features

Addressing various application requirements, Infineon delivers solutions with an assortment of features intended to optimize performance, minimize size and reduce cost. Below is a table of additional gate driver IC features available in the current portfolio.

Features	Abbreviation	Benefits
Active Miller clamp	M-CLAMP	Protection against inadvertent dynamic turn-on because of parasitic Miller effects
Active shutdown	SD-ACT	Ensures a safe IGBT off-state in case the output chip is not connected to the power supply or an undervoltage lockout is in effect
Brake chopper	BRAKE	Integrated brake IGBT driver with protection
Comparator	CMP	General purpose comparator included
Desaturation protection	DESAT	Protects the IGBT at short circuit
Enable	EN	Dedicated pin terminates all outputs
Fault reporting	FAULT-RPT	Indicates an overcurrent or under-voltage shutdown has occurred
Fault reset	FAULT-RST	Dedicated pin resets the DESAT-FAULT-state of the chip
High-voltage start-up	HVSTART	Provides easy and fast circuit start-up while enabling low circuit standby losses
Integrated bootstrap diode	BSD	Integrated bootstrap reduces BOM
Operational amplifier	OPAMP	An independent op-amp for current measurement or overcurrent detection
Oscillator	OSC	Integrated front end oscillator
Over-current protection (ITRIP)	OCP	Ensures safe application operation in case of overcurrent
Programmable deadtime	DT-PROG	Deadtime is programmable with external resistor for flexible design
Programmable fault clear time	FLTC	The length of the fault clear time period (tFLTC) is programmed by external capacitor which connected between FLTC and VSS (CFLTC).
Programmable shutdown	SD-PROG	A shutdown feature has been designed into a pin
Separate pin for logic ground	SEP-GND	Dedicated pin or logic ground for improved noise immunity
Separate sink/source outputs	SEP-OUT	Simplifies gate resistor selection, reduces BOM, and improves dV/dt control
Shoot-through protection	STP	Additional shoot-through protection logic such as interlock
Short-circuit clamping	SC-CLAMP	During short circuit the IGBT's gate voltage tends to rise because of the feedback via the Miller capacitance. An additional protection circuit connected to OUT+ limits this voltage to a value slightly higher than the supply voltage.
Shutdown	SD	Dedicated pin disables the IC outputs
Soft overcurrent shutdown	SD-SOFT	Dedicated pin turns off the desaturated transistor, preventing overvoltages
Truly Differential Inputs	TDI	+/-70 VDC and +/-150 VAC ground-shift robustness of low-side gate driver ICs
Two-level turn-off	TLTO	Lowers VCE overshoots at turn-off during short circuits or overcurrent events
UL 1577	UL	Double galvanic isolation certification
Undervoltage lockout	UVLO	Ensures safe application operation by avoiding unexpected driver behavior at low voltages
VDE 0884-10 or VDE 0884-11	VDE	Reinforced galvanic isolation certifications for non-optical couplers

Infineon gate driver IC package options

DSO-8 (SOIC-8N)		DSO-28 (SOIC-28WB)		TSSOP-8	
DSO-8 with power pad		DSO-36		TSSOP-28	
DSO-8 300-mil (SOIC-8WB)		LCC-32 (PLCC-44)		VDSON-8	
DSO-14 (SOIC-14N)		LQFP-64		VQFN-14 (MLPQ 4X4 14L)	
DSO-16		MQFP-64		VQFN-28 (MLPQ 5X5 28L)	
DSO-16 300-mil (SOIC-16WB)		SOT23-5		VQFN-32	
DSO-16 (fine pitch)		SOT23-6		VQFN-34 (MLPQ 7X7 48L)	
DSO-18		SSOP-24		VQFN-48	
DSO-19		TFLGA-13		VSON-10	
DSO-20 (SOIC-20WB)		TQFN-48		WSON-6	
DSO-20 (fine pitch)		TSDSO-24		WSON-8	
DSO-20 WB		TSNP-6		CHIP	
DSO-24 (DSO-28 w/o 4 pins)		TSNP-7			

NEW product highlights

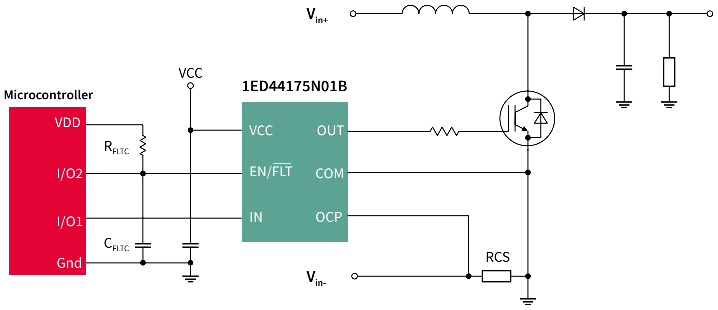
EiceDRIVER™ non-isolated low-side gate drivers

1ED4417x, 1-ch, low-side drivers with OCP, Enable, and Fault
2ED24427N01F, 10 A, 2-ch, low-side driver with Enable in DSO-8 with thermal pad

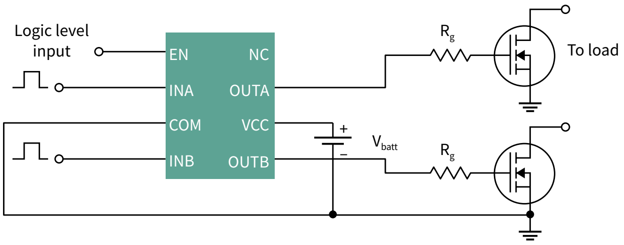
EiceDRIVER™ 1ED4417x family are 1-channel low-voltage, non-inverting, low-side gate drivers designed for ground-referenced applications such as digitally controlled power-factor correction (PFC) circuits. This family provides an under voltage lockout protection (UVLO) and integrates fault output reporting to the controller and driver enable functionality in one pin.
In addition, EiceDRIVER™ 1ED44173/5/6 integrate the overcurrent protection (OCP) comparator, realizing up to 20% cost and 50% space savings. The comparator features a fast and accurate current-sensing threshold tolerance of ±5%. 1ED44176N01F has separate logic and power ground pins for operational robustness.

EiceDRIVER™ 2ED24427N01F is a high-current 10 A, 2-channel low-voltage, non-inverting, low-side gate driver in a DSO-8 package with thermally efficient, exposed power pad. Propagation delays between two channels are matched. In half-bridge LLC or full-bridge ZVS topologies, 2ED24427N01F can easily drive low $R_{DS(on)}$ high-voltage MOSFETs at high switching frequencies. In synchronous rectification, more than two MOSFETs can be paralleled and driven from a single channel of the driver. One 2ED24427N01F device can efficiently drive both synchronous rectification legs. When higher current is needed, 2ED24427N01F can boost the current from a regular gate driver and drive high current IGBTs and MOSFETs.

Simplified application diagram

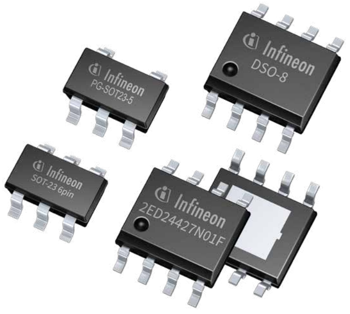


Simplified application diagram



Part Number	Package	$I_{O+/-}$	U_{VLO}	V_{OCTH}	Ton/off	Ground pins
1ED44171N01B*	SOT23-5	2.6/2.6 A	11.9/11.4 V	N/A	50/50 ns	COM
1ED44173N01B	SOT23-6	2.6/2.6 A	8/7 V	-250 mV	34/34 ns	COM
1ED44175N01B	SOT23-6	2.6/2.6 A	11.9/11.4 V	-250 mV	50/50 ns	COM
1ED44176N01F	DSO-8	0.8/1.75 A	11.9/11.4 V	500 mV	50/50 ns	VSS / COM
2ED24427N01F	DSO-8 w Power Pad	10/10 A	11.5/10 V	N/A	40/55 ns	COM

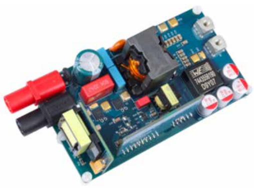
*Coming soon



Evaluation and reference board

- › EVAL-1ED44176N01F
- › EVAL-1ED44175N01B
- › EVAL-1ED44173N01B
- › EVAL-PFC5KIKWWR5SYS
- › EVAL-2ED2101-HB-LLC
- › REF-AIRCON-C302A-IM564






www.infineon.com/1ed44173
www.infineon.com/1ed44175
www.infineon.com/1ed44176
www.infineon.com/2ed24427

Aircon PFC Induction Server Telecom Solar Drives EV-Charging Industrial SMPS DC-DC

2EDN EiceDRIVER™ family

Rugged, fast, dual-channel low-side 4 A/5 A gate-driver ICs

EiceDRIVER™ 2EDN family overview

Dual-channel driver ICs are the crucial link between control ICs and powerful MOSFET, wide band gap (WBG) switching devices. Driver ICs enable high system level efficiencies, excellent power density and consistent system robustness.

EiceDRIVER™ 2EDN family: Fast, precise and compatible

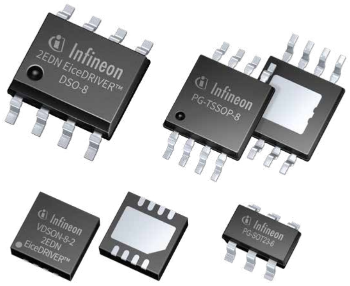
- Highly efficient SMPS enabled by 19 ns propagation delay and 2 ns channel-to-channel mismatch precision for fast MOSFET, WBG switches
- Diversified applications driven by strong output current 4 A/5 A per channel
- Your unique designs supported by the availability of numerous packages

EiceDRIVER™ 2EDN family:
The new reference in ruggedness and low power dissipation

- 4 V and 8 V UVLO (Under Voltage Lock Out) options for instant FETs protection under abnormal conditions, further improved with active output voltage clamping
- -10 V robustness of control and enable inputs provides crucial safety margin when driving pulse transformers or driving FETs in various packages
- 5 A reverse output current robustness eliminates the need for Schottky switching diodes and reduces bill-of-material
- Cool driver ICs from true rail-to-rail low impedance output stages

Applications

- Server
- Telecom
- DC-DC Converters
- Power tools
- Industrial SMPS
- Low speed electrical vehicles
- Solar power inverter
- LED lighting



Product features	Product benefits	System benefits
› 5 A source/sink current › 2 ns channel-to-channel mismatch › 10 ns minimum input pulse width	› Fast Miller plateau transition › Precise timing	› High power efficiency – in hard switching PFC with SiC Diode – in half-bridges and synchronous rectifications
› True rail-to-rail low impedance output stages	› Low power dissipation in Driver IC	› Cooler driver IC operation › Higher FETs drive capability
› 4 V and 8 V UVLO options, with active output voltage clamping › 19 ns propagation delay for both control and enable inputs	› Fast and reliable FETs turn-off, independent of control IC	› Instant FETs protection under abnormal operation
› -10 V robustness of control and enable inputs	› Increased GND-bounce robustness	› Crucial safety margin to drive pulse transformer
› 5 A reverse output current robustness	› Saves switching diodes	› Increases power density › BOM savings
› 2 independent channels	› Option to increase drive current by truly concurrent switching of 2 channels	› One IC covering many applications
› Industry standard pinout and packages	› Straight forward design upgrades	› Short time to market

www.infineon.com/cms/en/product/power/gate-driver-ics/eicedriver-2edn-gate-driver-for-mosfets/

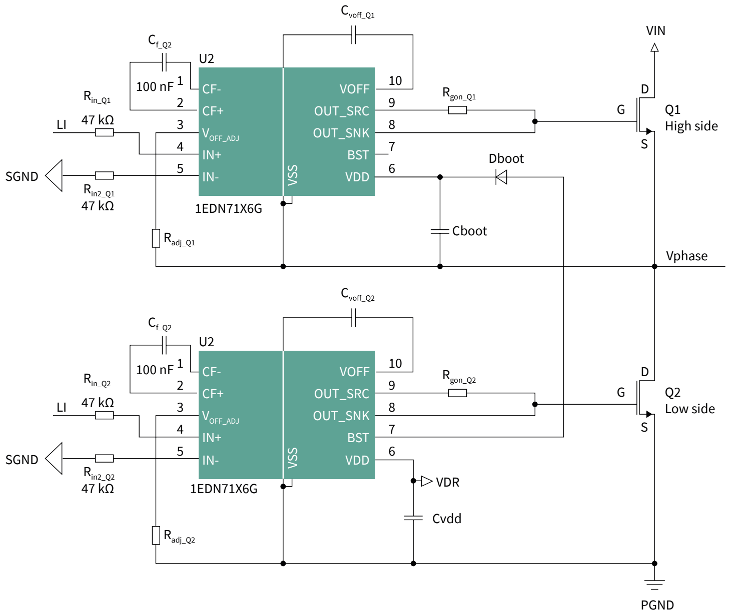
Industrial SMPS · Server · Telecom · Motor Control · Power Tools · Solar · Lighting

EiceDRIVER™ 1EDN71x6G/U family

200 V 1-ch gate drivers with truly differential input (TDI)

The 1EDN71x6G/U is a 1-channel gate driver family optimized for Infineon CoolGaN™ HEMTs, and also compatible with other GaN HEMTs and silicon MOSFETs. The TDI feature eliminates the risk of false triggering due to ground bounce in low-side applications and enable 1EDN71x6G/U to address even high-side applications. The TDI feature works by controlling the gate driver output state is exclusively by the voltage difference between the two inputs, completely independent of the driver's reference (ground) potential as long as the common-mode voltage is below 150 V (static) and 200 V (dynamic).

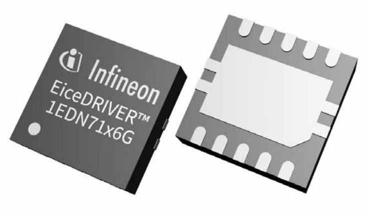
Typical application diagram



Product family

Product	Ourput current	Source/sink resistance	Input pulse blanking time	Package
1EDN7116G	2 A	0.8 Ω	20 ns	VSON-10
1EDN7126G	1.5 A	1.0 Ω	40 ns	VSON-10
1EDN7136G	1 A	1.5 Ω	60 ns	VSON-10
1EDN7146G	0.5 A	3.0 Ω	80 ns	VSON-10
1EDN7116U*	2 A	0.8 Ω	20 ns	TSNP-7
1EDN7126U*	1.5 A	1.0 Ω	40 ns	TSNP-7
1EDN7136U*	1 A	1.5 Ω	60 ns	TSNP-7
1EDN7146U*	0.5 A	3.0 Ω	80 ns	TSNP-7

*Coming soon



Key features	Key benefits
› Truly differential logic input (TDI)	› High side driving and low side ground bounce immunity
› Four driving strengths	› Optimize switching speed without external gate resistors
› Active miller clamp	› Prevent induced turn-on
› Optional negative charge pump	› Additional induced turn-on immunity
› Active bootstrap capacitor	› No overcharging the bootstrap capacitor during dead-time

DC-DC 48V 12V
Server
Telecom
Artificial intelligence
Collaborative robotics
Drone
Audio

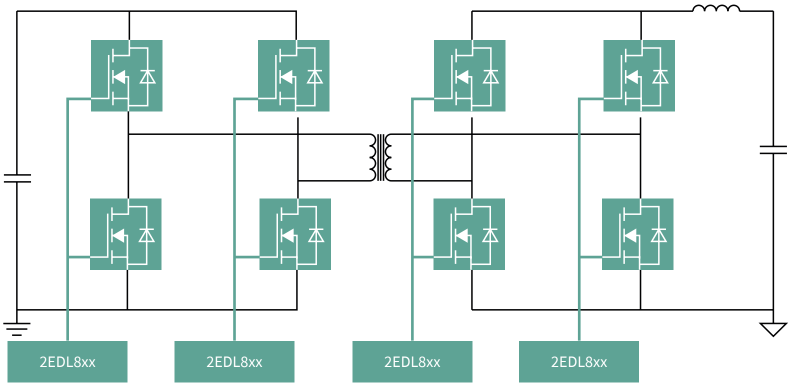
EiceDRIVER™ 2EDL8x2x Family

120 V, 3/4 A, junction-isolated high and low side gate drivers

2EDL8x2x is a family of high and low side gate driver designed for advanced switching DC-DC converters. 2EDL802x takes in independent inputs while 2EDL812x takes in differential inputs with both having built-in hysteresis for enhanced noise immunity. The gate driver family comes in two packages VDSON-8 4x4 mm and VSON-10 3x3 mm.

Schematic diagram

Full bridge – Full bridge (600 W~1300 W)



Key features

- 120 V integrated boot-strap diode with 10 ns reverse recovery time
- 2 A to 4 A output source currents
- 6 A output sink currents
- -8 V / + 15 V differential input robustness
- 5 A reverse current output robustness
- ±1 ns (typ.) channel-to-channel delay matching

Key benefits

- Drive strength for fast miller plateau transition
- Fast and robust
- Immunity against false triggering from ground bounce
- No need for schottky clamping diodes

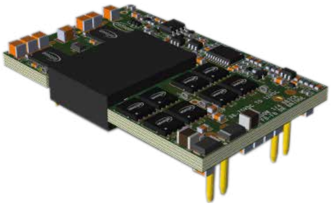
Product family

Part number	Input	Source current	Sink current	Min input pulse width	propagation delay (typ)	Matching delay (Typ)	ESD	Package
2EDL8123G*	Differential	3 A	6 A	40 ns	45 ns	2 ns	2 kV	VDSON-8 4x4 mm
2EDL8124G*		4 A						
2EDL8023G*	Independent	3 A						
2EDL8024G		4 A						
2EDL8123G3C*	Differential	3 A						VSON-10 3x3 mm
2EDL8124G3C*		4 A						
2EDL8023G3C*	Independent	3 A						
2EDL8024G3C*		4 A						

*Coming soon

Evaluation board

- EVAL_HB_2EDL8x2xG*
- REF_600W_FBFB_QB*



DC-DC Battery formation Server Solar Telecom

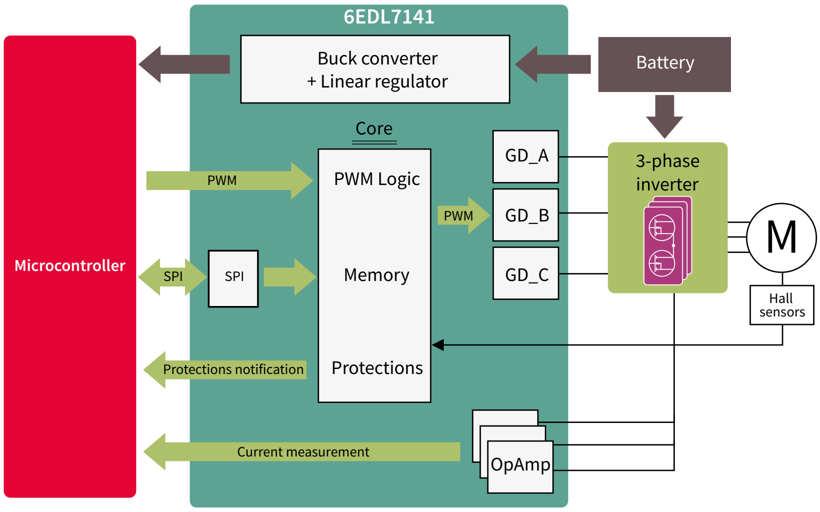
MOTIX™ 6EDL7141: high performance motor control

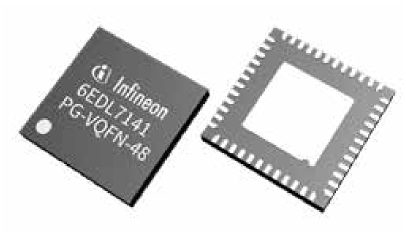
Next generation fully programmable 3-phase gate driver

6EDL7141, Infineon's latest 3-phase motor control gate driver IC will allow our customers to develop their next generation of high performance battery operated products using BLDC or PMSM motors. Ideal applications include cordless power tools, gardening products, and automated guided vehicles. With over 50 fully programmable parameters using built-in digital SPI interface, 6EDL7141 is fully configurable to drive a wide range of MOSFET's to yield the best possible system efficiency. The integrated buck regulator provides the power for both the microcontroller and the Hall sensors in the motor, further reducing peripheral components and required PCB area. In addition, with a full suite of system protection features such as OCP, UVLO, over-temperature, and locked rotor detection, this dedicated motor controller will increase reliability and robustness in severe operating fault conditions.

Block diagram

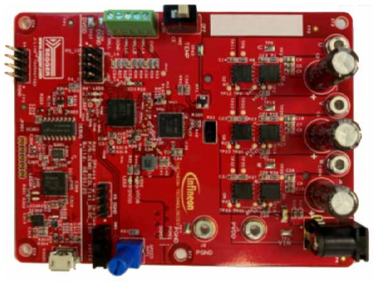
3-phase BLDC battery powered motor control





Key features
› Integrated power supply
› Programmable slew rate
› Programmable gate drive supply
› 3x current shunt amplifier
› ADC ref of 5V
› Complete dedicated motor control protection suite

Key benefits
› Reduced external components and PCB area
› Optimized efficiency and EMI
› Maximum flexibility to use different inverter FET's
› Highly accurate current sense while saving external components
› Higher dynamic range to increase signal resolution
› Improve reliability and fault detection



Evaluation board

- › EVAL_6EDL7141_TRAP_1SH
- › BC 1 shunt evaluation board
- › Parallel 40V OptiMOS5 PQFN
- › XMC1404 MCU
- › On-board programming dongle
- › Featured module IC: 6EDL7141

MOTIX™ 160 V SOI gate driver family

2ED27xxS01G half-bridge & high and low side gate driver family with integrated bootstrap diode

6ED2742S01Q 3-phase driver with charge pump, current sense amplifier, OCP and bootstrap diode

MOTIX™ 160 V SOI gate driver family is designed for the BLDC motor drive applications. The SOI technology enables integrated bootstrap diodes, which can be used to supply the external high side bootstrap capacitor. The output drivers feature a high-pulse current buffer stage designed for minimum driver cross-conduction.

MOTIX™ 2ED27xxS01G family consists of 3 half-bridge and 3 high and low side 160 V SOI gate drivers. The UVLO protection is on both Vcc and VB pins. Fast propagation delays (50 ns) are suitable for motor drive and power conversion applications in VSON-10 (3x3 mm) with exposed ground pad.

MOTIX™ 6ED2742S01Q is a 160 V three-phase SOI gate driver, which supports 100% duty cycle operation by a trickle charge pump. Protection features include UVLO, OCP with configurable threshold, fault and automatic fault clear. A current sense operational amplifier (CSA) with selectable gain is integrated between the VSS and COM.

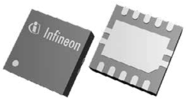
Part Number	Package	Output current	Configuration	Deadtime	Propagation delay
2ED2732S01G*	VSON-10 3x3 mm	1/2 A	High and low-side (HS+LS)	None	50 ns
2ED2734S01G*		2/4 A			
2ED2738S01G*		4/8 A			
2ED2742S01G*		1/2 A	Half-bridge	50 ns	
2ED2744S01G*		2/4 A			
2ED2748S01G*		4/8 A			
6ED2742S01Q*	VQFN-32 5x5 mm	1/2 A	Three-phase	100 ns	100 ns

*Coming soon

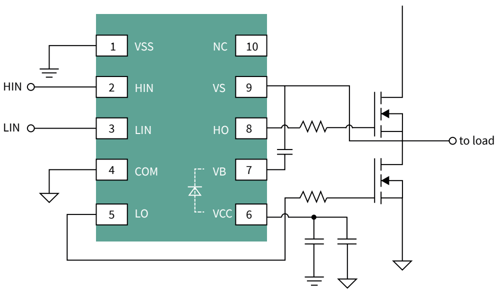
Applications for MOTIX™ 160 V SOI gate driver family

- Servo / stepper drives in robotics and factory automation
- General purpose low voltage drives
- Battery operated small home appliances (SHA)
- Professional and consumer service robotics
- Logistics vehicles (e-forklifts, autonomous warehouse robotics)
- Commercial and agricultural drones
- Hand-held battery operated power tools
- Garden or outdoor power equipment (OPE) tools
- e-scooters, e-bikes, and other e-vehicles that do not require automotive qualification (LSEV)

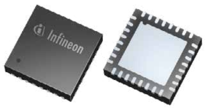
Simplified application diagram

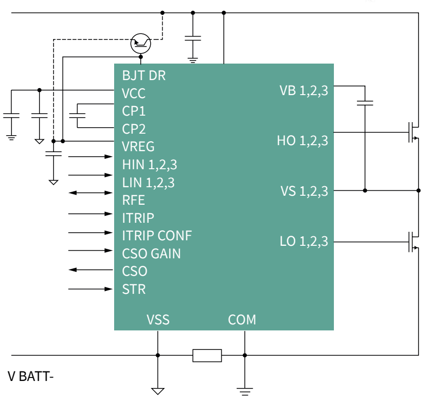


2ED27xxS01G



6ED2742S01Q





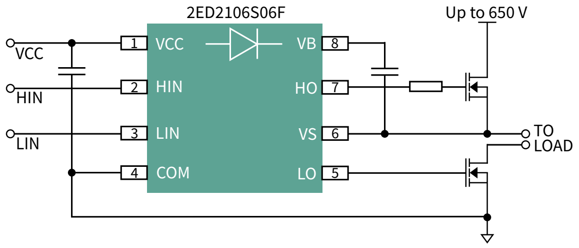
6ED2742S01Q key features
› Integrated power management with charge pump and pre-regulator supports wide input voltage range of 6 V to 140 V.
› Integrated over-current protection comparator for single-shunt low side operation with programmable +/-5% reference threshold.
› Integrated current sense amplifier with programmable voltage gain and ability to read output voltage offset during zero phase current.
› Always positive output voltage offset to reduce need for +/- VREF for downstream ADC in microcontroller.
› Integrated, per phase, high side trickle charge pumps to enable 100% duty cycle operation
› Integrated, multi-function RFE pin combines FAULT, FAULT Clear, and Enable functionality

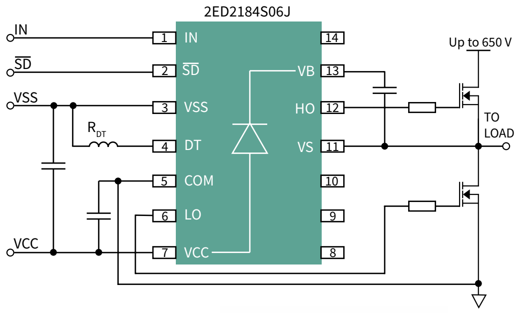
EiceDRIVER™ 650 V level shift SOI gate driver family

2ED2101/3/4 and 2ED2110: EiceDRIVER™ fast level shift SOI family with 90 ns prop delay
2ED2106/8/9 and 2ED2181/2/3/4: EiceDRIVER™ general purpose SOI family

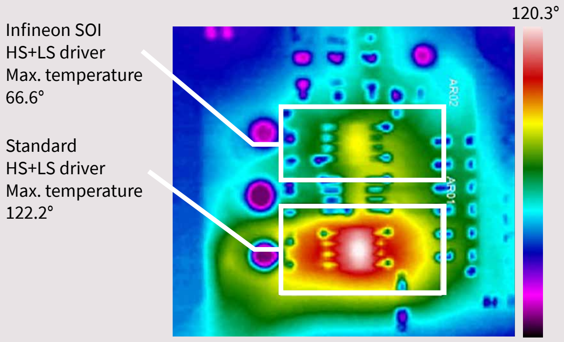
EiceDRIVER™ 650 V SOI family is high voltage, high speed MOSFET and IGBT gate drivers. Based on Infineon SOI technology, this family features an integrated, ultra-fast, low $R_{DS(on)}$ bootstrap diode and offers excellent ruggedness and noise immunity with tolerance to negative transient voltages of up to -100 V. The absence of parasitic thyristor structures ensures superior latch up immunity. The level-shift loss is significantly reduced on the EiceDRIVER™ SOI gate drivers compare to other technologies.

Simplified application diagrams





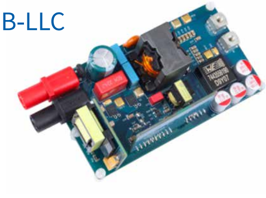
Power dissipation of Infineon SOI

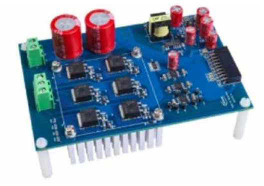


DC Bus voltage = 300 V; With CoolMOS™ P7 in D-Pak;
300 kHz switching frequency

Evaluation board

- › EVAL-M1-2ED2106S
- › EVAL-2ED2101 HB-LLC





Product family	Part Number	Output current	Prop. delay	Input logic	Configuration	Package
EiceDRIVER™ Fast level shift SOI	2ED2101S06F	0.29/0.7 A	90 ns	HIN, LIN	High and low-side	DSO-8
	2ED2103S06F			HIN, LIN	Half-bridge	
	2ED2104S06F			IN, SD	Half-bridge	
	2ED2110S06M	2.5/2.5 A		HIN, LIN	High and low-side	DSO-16 WB
EiceDRIVER™ General purpose SOI	2ED2106S06F	0.29/0.7 A	200/200 ns	HIN, LIN	High and low-side	DSO-8
	2ED21064S06J			HIN, LIN		DSO-14
	2ED2108S06F			HIN, LIN	Half-bridge	DSO-8
	2ED21084S06J			HIN, LIN		DSO-14
	2ED2109S06F		740/200 ns	IN, SD		DSO-8
	2ED21094S06J			IN, SD		DSO-14
	2ED21091S06F			IN, DT/SD		DSO-8
	2ED2181S06F	2.5/2.5 A	200/200 ns	HIN, LIN	High and low-side	DSO-8
	2ED21814S06J			HIN, LIN		DSO-14
	2ED2182S06F			HIN, LIN	Half-bridge	DSO-8
	2ED21824S06J			HIN, LIN		DSO-14
	2ED2183S06F			HIN, LIN		DSO-8
	2ED21834S06J			HIN, LIN		DSO-14
	2ED2184S06F		600/200 ns	IN, SD		DSO-8
	2ED21844S06J			IN, SD		DSO-14

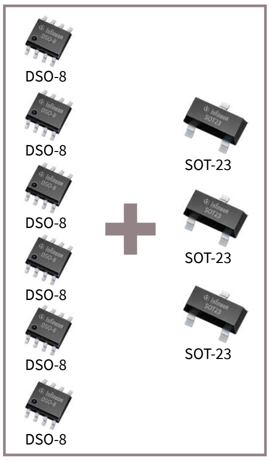
EiceDRIVER™ 1200 V level shift SOI gate driver family

6ED223x: 1200 V 3-phase SOI driver with OCP, bootstrap diode
2ED132x: 1200 V half-bridge & high and low side SOI driver with OCP, Miller clamp and bootstrap diode

The 6ED2231S12T is a 1200-V three-phase SOI gate driver, with 0.35 A / 0.65 A current in DSO-24 package (DSO-28 with 4 pins removed). The 2ED132x family consists of four 1200-V SOI gate drivers, in half bridge or high and low side configurations. 2ED132x family offers 2.3 A output current in high creepage (5 mm) / clearance DSO-20 wide body package or higher sink option (4.6 A) in DSO-16 wide body package. Both 6ED2231S12T and 2ED132x family integrates ultra-fast over-current protection (OCP) with ± 5% accuracy, and bootstrap diode. 2ED132x family also integrates active Miller Clamp.

Current solutions

6 Opto-isolated drivers +
3 1200 V bootstrap diodes



- Space savings
- Cost savings
- Easy to design
- Higher Reliability
- Faster time to market

New 6ED2231S12T Integrates

6x gate-driver functionality &
3x boot-strap diodes
Over-current protection
IGBT / SiC MOSFET UVLOs


DSO-24

6ED2231S12T easily fits within EasyPIM™ 1B module footprint

EVAL-M1-6ED2231-B1

Key features

- Leading negative VS immunity
- > 50% lower level-shift switching losses
- Integrated bootstrap diode
- 1200 V breakdown voltage integrated input filters

Key benefits

- Increased robustness and reliability → reduced manufacturing and field failures
- Reduced power dissipation; lower temperature
- Faster frequency switching
- Smaller PCB footprints
- Reduced BOM costs
- Improved noise sensitivity
- Latch-up immunity

Customer value

- Increased profitability from lower lifecycle costs
- Faster time to market for higher share capture
- Enables new applications
- Increased flexibility
- Increased reliability

Product Name	Configuration	Package	Output current	Key features	Deadtime	t_{ON} / t_{OFF}
6ED2231S12T*	Three-phase	DSO-24	0.35 / 0.65 A	OCP, RFE	460 ns	700 / 650 ns
2ED1324S12P*	Half-Bridge	DSO–20	2.3 / 2.3 A	OCP, SOFF, AMC, RFE	380 ns	500 ns
2ED1323S12P*	HS+LS	DSO–20	2.3 / 2.3 A	OCP, SOFF, AMC, RFE	None	350 ns
2ED1322S12M*	Half-Bridge	DSO–16	2.3 / 4.6 A	OCP, SOFF, RFE	400 ns	500 ns
2ED1321S12M*	HS+LS	DSO–16	2.3 / 4.6 A	OCP, SOFF, RFE	None	350 ns

*Coming soon

2EDi EiceDRIVER^{TM} family

Fast, robust, dual-channel galvanic isolated Gate Driver ICs

Galvanic isolated EiceDRIVER™ family overview

The 2EDi is a family of dual-channel isolated gate driver ICs designed to drive Si MOSFETS, SiC MOSFETs and GaN power switches. Isolation is achieved by means of Infineon Coreless Transformer (CT) technology which guarantees robust operation and industry benchmark common-mode rejection (CMTI).

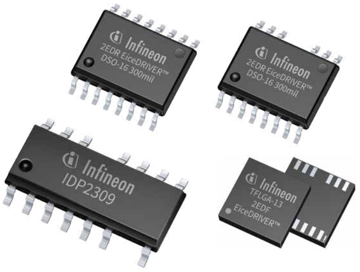
The high propagation delay accuracy and low channel-to-channel mismatch makes the product ideal for use in fast-switching power system. In addition, high CMTI, high reverse current capability and fast clamping of the output below UVLO guarantees reliable operation in the application.

Applications

- Server
- Telecom
- DC-DC converters
- Power tools
- Industrial SMPS
- Low speed electrical vehicles
- Solar power inverter
- LED lighting

2EDi Gen. II: what is new?

- DSO-14 packages with increased channel-to-channel creepage to easier the layout or enable the use with higher working voltages or worst pollution layout
- New LGA 4mmx4mm enabling 70% space saving
- Fulfills the latest component standard for magnetic couplers (IEC 60747-17)
- Programmable dead-time and shoot-through functionality



Product features	Product benefits	System benefits
Fast power switching with accurate timing › 5 A/ 9 A source/sink currents › Propagation delay typ. 38 ns with 6 ns channel-to-channel precision	**Efficiency gain and lower losses** › Strong driving enables reduced switching losses › Accurate timing enables dead-time optimization or synchronized driving in case of parallel MOSFETs	**Enabling higher system efficiency and higher power density designs**
Optimized for area and system BOM › < 1 Ω source and sink output resistance › Output stages with 5 A reverse current capability	**Improved thermal behavior at smaller form factor** › Most of the driving power is dissipated externally with reduced thermal stress on the driver › Eliminates two costly protection diodes on the gate driver outputs	**Improving long term competitive cost position, integration and mass manufacturability**
Robust › CMTI >150 V/ns › Under voltage lockout function for switch protection › Dead time control and shoot through protection	**Protection and safe operation** › Reliable driver operation against fast switching transients › MOSFET is protected from thermal stress in abnormal conditions › Protection against noise and spurious pulses	**Extending end-product lifetime** by improving safe operation of power switches in normal and abnormal field (grid) conditions
Output-to-output channel isolation › Functional level galvanic isolation	**Flexible configurations** › high-side + low-side, high-side + high-side, low-side + low-side	**Lower EMI by ground isolation**
Input-to-output channel isolation › Functional, basic and reinforced galvanic isolation	**Regulatory safety** › Functional for level-shifting and ground bounce immunity › Reinforced for control of primary-side MOSFETs from secondary-side controller	**Simplified safety approval** through component standards (UL1577, IEC60747-17) and system standards (IEC62368) certificates

www.infineon.com/cms/en/product/power/gate-driver-ics/dual-channel-isolated-gate-driver-eicedriver-2edi/

Industrial SMPS | Server | Telecom | Motor Control | Power Tools | Solar | Lighting

EiceDRIVER™ X3 Compact and 2L-SRC Compact

5.7 kV, 18 A, 1-ch, isolated drivers with Miller clamp and 2-level slew rate control

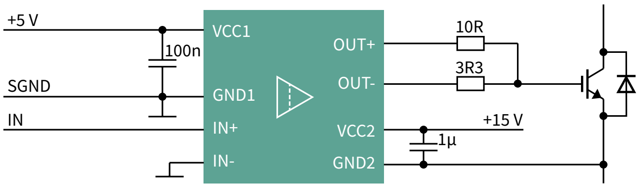
EiceDRIVER™ X3 Compact family (1ED31xx) provides Miller clamp or separate output options with up to 14 A current, in DSO-8 150 mil and 300 mil package. EiceDRIVER™ 2L-SRC Compact family (1ED32xx) provides Miller clamp or 2-level slew rate control options with up to 18 A current, in DSO-8 300 mil package.

The Miller clamp function is highly recommended for SiC MOSFET 0 V turn off and IGBT7 against parasitic turn on. The 2-level slew rate control function allows customers to change the output current on the fly. It is highly recommend for industrial drives application, where customer suffer from the EMI and switching loss optimization.

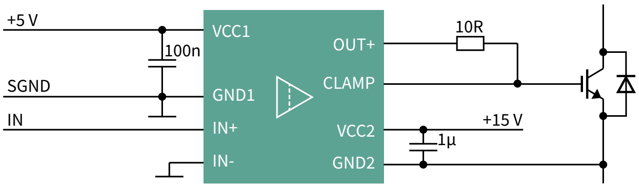
Both EiceDRIVER™ X3 Compact and 2L-SRC Compact families are rated up to 2300 V functional isolation and 200 kV/µs CMTI. They are ideal for IGBTs, MOSFETs, and SiC MOSFETs in applications like solar inverter, EV charging, industrial drives, CAC, industrial induction cooking, CAV, UPS, server and telecom SMPS, etc.

Simplified application diagram

2-level slew rate control (1ED3241MC12H)



Active Miller clamp (1ED3122MC12H)



Evaluation board

- › EVAL-1ED3121MX12H
- › EVAL-1ED3122MX12H
- › EVAL-1ED3124MX12H
- › EVAL-1ED3241MC12H
- › EVAL-1ED3251MC12H
- › REF-22K-GPD-INV-EASY3B

Family	Part Number	Typ. output current	Feature	Prop. delay	Input filter	UVLO	Prop.delay matching	Package	Isolation rating
EiceDRIVER™ X3 Compact	1ED3127MU12F*	10 A	Miller clamp	90 ns	30 ns	12 V	7 ns	DSO-8 150mil	UL 1577: VISO = 3 kVrms
	1ED3125MU12F	10 A				10.5 V			
	1ED3124MU12F	14 A	Separate output			10.5 V			
	1ED3131MC12H	5.5 A		270 ns	180 ns	10.5 V		DSO-8 300mil	UL 1577: VISO = 5.7 kVrms VDE 0884-11: VIORM = 1767 V (reinforced)
	1ED3120MC12H	5.5 A		90 ns	30 ns	8 V			
	1ED3121MC12H	5.5 A				10.5 V			
	1ED3122MC12H	10 A	Miller clamp			8 V			
	1ED3123MC12H	14 A	Separate output			8 V			
	1ED3124MC12H	14 A				10.5 V			
EiceDRIVER™ 2L-SRC Compact	1ED3240MC12H	10 A	Turn-on and turn-off slew rate control	110 ns	30 ns	10.5 V	15 ns		
	1ED3241MC12H	18 A				10.5 V			
	1ED3250MC12H	10 A	Turn-on slew rate control and Miller clamp			10.5 V			
	1ED3251MC12H	18 A				10.5 V			

*Coming soon

www.infineon.com/gdcompact
www.infineon.com/src

Server SMPS +SiC Telecom Drives EV charger CAV Industrial robotics Solar UPS

EiceDRIVER™ Enhanced 1ED-F3 and X3 Analog

5.7 kV, 9 A, 1-ch, isolated drivers with DESAT, Miller clamp and soft-off

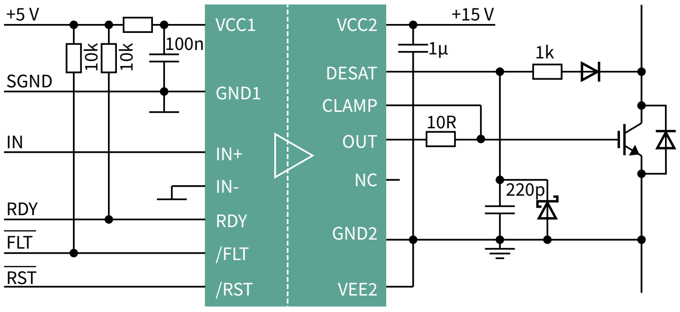
The EiceDRIVER™ Enhanced 1ED-F3 family (1ED332x) provides DESAT, Miller clamp and soft-off features with up to 8,5 A current, in DSO-16 300 mil package. The EiceDRIVER™ Enhanced X3 Analog family (1ED34xx) provides Miller clamp, resistor configurable DESAT and soft-off function with up to 9 A current, in DSO-16 300 mil fine pitch package.

The 1ED-F3 family (1ED332x) is pin2pin with our previous generation 1ED020I12-F2 (1ED-F2), with higher current, shorter propagation delay, higher isolation ratings and additional soft-off function. The X3 Analog family (1ED34xx) offers best-in-class DESAT protection accuracy with the resistor configurability on DESAT filter & leading edge blanking time and soft-off current.

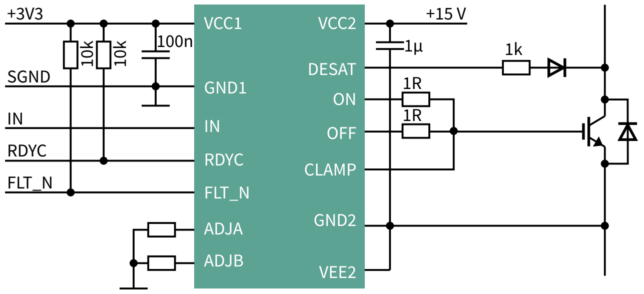
Both EiceDRIVER™ Enhanced 1ED-F3 and X3 Analog families are rated up to 2300 V functional isolation and 200 kV/µs CMTI. They are ideal for IGBTs, MOSFETs, and SiC MOSFETs in applications like solar inverter, EV charging, industrial drives, CAC, industrial induction cooking, CAV, UPS, server and telecom SMPS, etc.

Simplified application diagram

1ED-F3 (1ED332x)

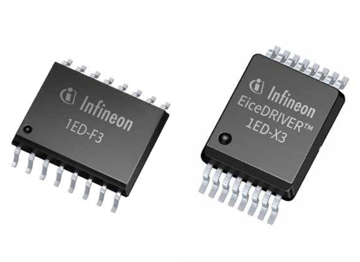


X3 Analog (1ED34xx)



Evaluation board available

EVAL-1ED3321MC12N
EVAL-1ED3491Mx12M



Family	Part Number	Typ. output current	Feature	Prop. delay	Input filter	UVLO	Prop.delay matching	Package	Isolation rating
EiceDRIVER™ Enhanced 1ED-F3	1ED3320MC12N	3/6 A	Miller clamp, DESAT, soft-off	80 ns	35 ns	10.5 V	15 ns	DSO-16 300mil	UL 1577: V_{ISO} = 5.7 kVrms VDE 0884-11: V_{IORM} = 1767 V (reinforced)
	1ED3321MC12N	6/8.5 A				10.5 V			
	1ED3322MC12N	6/8.5 A	Miller clamp, DESAT			12 V			
	1ED3323MC12N	6/8.5 A				10.5 V			
EiceDRIVER™ Enhanced X3 Analog	1ED3431MC12M	3 A	Miller clamp, Resistor adjustable DESAT and soft-off	236 ns	100 ns	10.5 V	30 ns	DSO-16 300mil fine pitch	
	1ED3461MC12M	6 A	Clamp driver, Resistor adjustable DESAT and soft-off			10.5 V			
	1ED3491MC12M	9 A				10.5 V			

+SiC Industrial robotics CAV EV charger Drives Solar UPS

www.infineon.com/gdenhanced

EiceDRIVER™ Enhanced X3 Digital

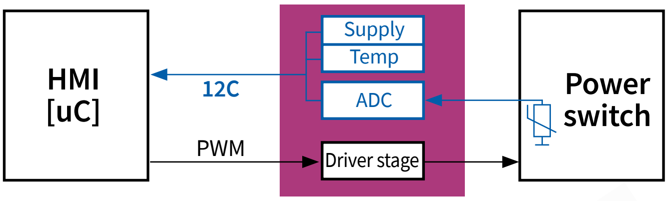
5.7 kV, 9 A, 1-ch, isolated drivers with I2C configurability for DESAT, Miller clamp, soft-off, etc.

The EiceDRIVER™ Enhanced X3 Digital family (1ED38xx) provides I2C configurability for DESAT, soft-off, UVLO, Miller clamp, two level turn off (TLTO), and Fault function to simplify the design of highly reliable systems. All adjustments are done from the input side via the I2C interface (pin SDA and SCL). 1ED38xx offers up to 9 A current, in DSO-16 300 mil fine pitch package.

EiceDRIVER™ Enhanced X3 Digital family is rated up to 2300 V functional isolation and 200 kV/µs CMTI. They are ideal for IGBTs, MOSFETs, and SiC MOSFETs in applications like solar inverter, EV charging, industrial drives, CAC, industrial induction cooking, CAV, UPS, server and telecom SMPS, etc. X3 Digital is the perfect driver for SiC MOSFET due to the configurability of DESAT and UVLO. Two advantages of the digitally configurable approach for customers are predictive maintenance in sophisticated industrial systems and rapid prototyping for fast solution development.

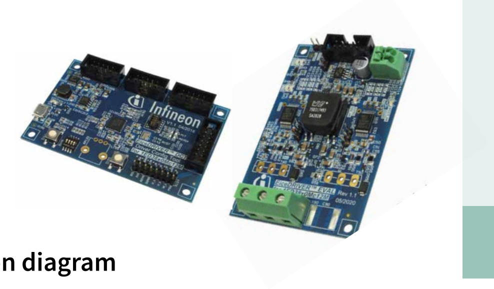
Predictive Maintenance

Using the I²C interface, 1ED38xx is able to register the counts of UVLO spikes, monitor the supply voltage and temperature increase.
With the long-term analysis of the collected data, customers are able to decide when is the best time to schedule a maintenance cycle before the system fails.



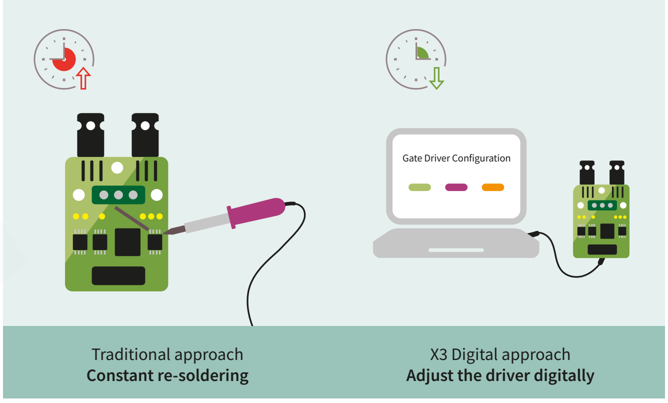
Evaluation board

EVAL-1ED3890Mx12M
EVAL-1ED38x0DCT



Rapid Prototyping

The I²C interface enables rapid prototyping without hardware changes. Using a traditional gate driver, customers have to first design an initial PCB board, and then adjust and replace the components on the board during evaluation. However, with 1ED38xx I2C interface, customers can configure up to 27 parameters to optimize the board without replacing the components. This feature extremely shortens the development flow.

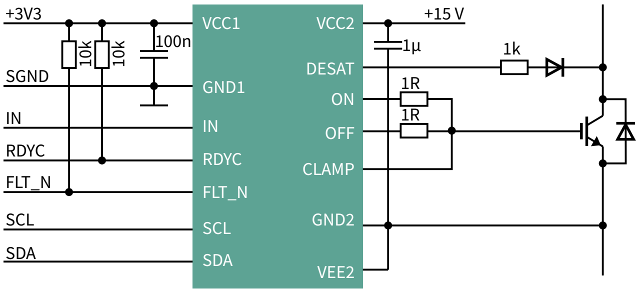


Traditional approach
Constant re-soldering

X3 Digital approach
Adjust the driver digitally

Simplified application diagram

X3 Digital (1ED38xx)



Family	Part Number	Typ. output current	Feature	Isolation rating
EiceDRIVER™ Enhanced X3 Digital	1ED3830MC12M	3 A	I²C configurability, Miller clamp, DESAT, soft-off, two-level turn-off, integrated ADC	UL 1577: V_{ISO} = 5.7 kVrms VDE 0884-11: V_{IORM} = 1767 V (reinforced)
	1ED3860MC12M	6 A		
	1ED3890MC12M	9 A		

Predictive maintenance
+SiC
Industrial robotics
CAV
EV charger
Drives
Solar
UPS

www.infineon.com/gdenhanced

MOTIX™ (BL)DC motor system ICs – TLE956x

(BL)DC Motor System IC combines power supply, communication and multiple half-bridge MOSFET drivers

All devices of the Motor System IC family feature a low-dropout voltage regulator with an output current of 250 mA / 5 V. The communication interface incorporates a CAN FD transceiver up to 5 Mbit/s according to ISO 11898-2:2016 (including Partial Networking (PN) option) and / or LIN transceiver. All devices are available in a VQFN-48 (7 mm x 7 mm) package.

Motor System IC
Adaptive MOSFET control
Configurable Brake Mode
Pulse-width modulation
Diagnosis
Current Sense Amplifier

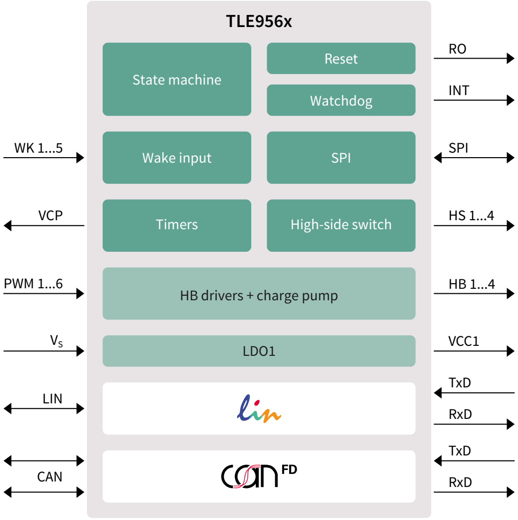
Key benefits

- PCB savings up to 50 percent due to unique integration approach
- Lower switching losses and EMC optimization due to adaptive MOSFET control
- Automatic regulation of MOSFET pre-charge currents diminish need for production MOSFET calibration
- V_S monitoring in sleep mode activates MOSFET to prevent from ECU damage when motor is in generator mode

Key features

- 5 V linear regulator up to 250 mA
- CAN FD up to 5 Mbps
- CAN PN and FD tolerant ("-3" variants)
- LIN2.2B / J2602
- TLE9560/1/2: up to 4 half-bridge gate driver with adaptive MOSFET control up to 100 mA constant gate charge
- TLE9563/4: 3-phase gate driver with CSA and adaptive MOSFET control up to 150 mA constant gate charge
- Up to 4 high-side switches(with 7 on-resistance)
- Up to 5 wake inputs
- Up to 6 PWM inputs

Simplified application diagram



Key applications

- DC motor control
- Power lift gate
- Seat control module
- Sunroof module
- HVAC flaps
- Electric parking actuator
- Steering column lock
- Reversible seat belt
- BLDC motor control
- Pumps
- Fans
- Sunroof
- Transfer case

Product table

Product variant	VCC1	CAN FD	CAN PN	LIN	HS switches	PWM input	Driver
TLE9560-3QX	5 V up to 250 mA	✓	✓	✓	4	1	2x half-bridges (100 mA const.)
TLE9561QX	5 V up to 250 mA	✓	×	×	4	4	4x half-bridges (100 mA const.)
TLE9561-3QX	5 V up to 250 mA	✓	✓	×	4	4	4x half-bridges (100 mA const.)
TLE9562QX	5 V up to 250 mA	✓	×	✓	4	2	4x half-bridges (100 mA const.)
TLE9562-3QX	5 V up to 250 mA	✓	✓	✓	4	2	4x half-bridges (100 mA const.)
TLE9563-3QX	5 V up to 250 mA	✓	✓	×	3	6	3x half bridges (150 mA const.)
TLE9564QX	5 V up to 250 mA	×	×	✓	3	6	3x half bridges (150 mA const.)

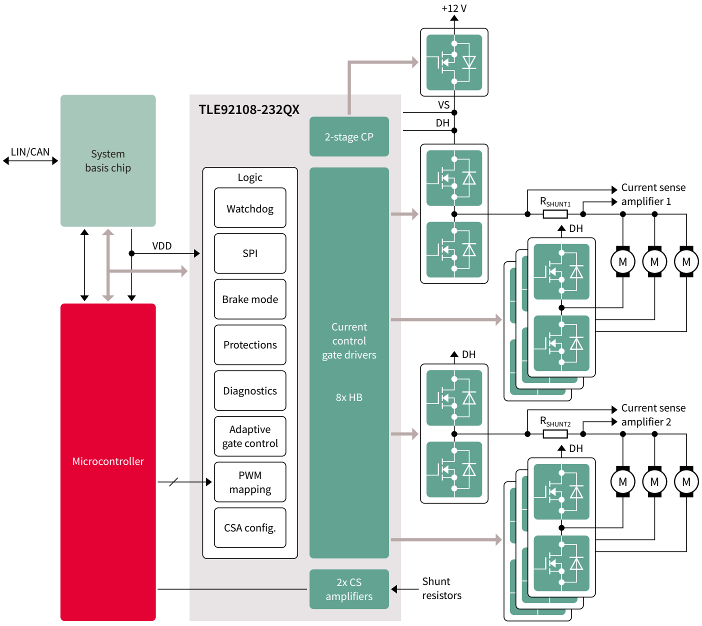
www.infineon.com/bldc-motor-system-ics
www.infineon.com/bdc-motor-system-ics

Lift gate
Seat
Electric parking brake
Steering lock
HVAC Flap
Seat belt
Transfer Case
Sunroof
Fans
Pumps

MOTIX™ multi MOSFET driver ICs – TLE9210x

Multiple half-bridge drivers designed to control up to eight half-bridges

Infineon’s TLE9210x is a family of multi MOSFET driver ICs, designed to control up to eight half-bridges (up to 16 n-channel MOSFETs) with one packaged device. Having only one device for several half-bridges enables further savings, such as less pick & place costs as well as less required PCB area compared to discrete solutions. TLE92108 and TLE92104 multiple MOSFET driver offer a reliable and cost optimized solution with state of the art diagnostic and protection. The devices of the TLE9210x family are pin and software compatible. Further, the product family allows motor cascading: with TLE92108 (8 half-bridges), up to 7 motors can be driven.



The TLE92104-23QX APPKIT contains TLE92104-232QX, and an application circuit, including 4 OptiMOS™ 40 V MOSFET half-bridges in S3O8 to drive up to 3 DC motors. The TLE92108-23QX APPKIT contains TLE92108-232QX, and an application circuit, including 8 OptiMOS™ 40 V MOSFET half-bridges in S3O8 to drive up to 7 DC motors. The application boards can be connected via a UIO stick with the computer to evaluate its features via Config Wizard (a graphical user interface) which can be found in the Infineon Developer Center. The Reference Design Guide: TLE92108-23QX Central door lock with multiple MOSFET driver is available.

Key features

- Adaptive multi-stage MOSFET gate control
- Configurable brake mode feature
- Up to 2x flexible current sense amplifiers (high-side capable and bidirectional) with configurable gain
- 24-bit serial peripheral interface
- Integrated charge pump for reverse battery protection
- Drain-source monitoring for hard short circuit detection
- Current sense monitoring for soft short circuit detection
- Overtemperature warning and shutdown
- Timeout watchdog
- Detailed off-state diagnostic (open load, short circuit to battery or to GND) via SPI
- 3x PWM inputs (up to 25 kHz)
- Best-in-class low current consumption in sleep mode
- AEC Q-100 qualified

Ordering code:
TLE9210423QXAPPKITTOBO1,
TLE9210823QXAPPKITTOBO1

TLE92104-23QX APPKIT
TLE92108-23QX APPKIT

Product table

Type	Description	Brake mode	Package	Ordering Code
TLE92108-231QX	8-fold Multi-MOSFET driver IC	No	PG-VQFN-48	TLE92108231QXXUMA1
TLE92108-232QX	8-fold Multi-MOSFET driver IC	Yes	PG-VQFN-48	TLE92108232QXXUMA1
TLE92104-131QX	4-fold Multi-MOSFET driver IC	No	PG-VQFN-48	TLE92104131QXXUMA1
TLE92104-232QX	4-fold Multi-MOSFET driver IC	Yes	PG-VQFN-48	TLE92104232QXXUMA1

Seat
Power Sliding Door
Lift gate
Central door lock

www.infineon.com/multi-mosfet-driver

MOTIX™ automotive motor gate driver ICs

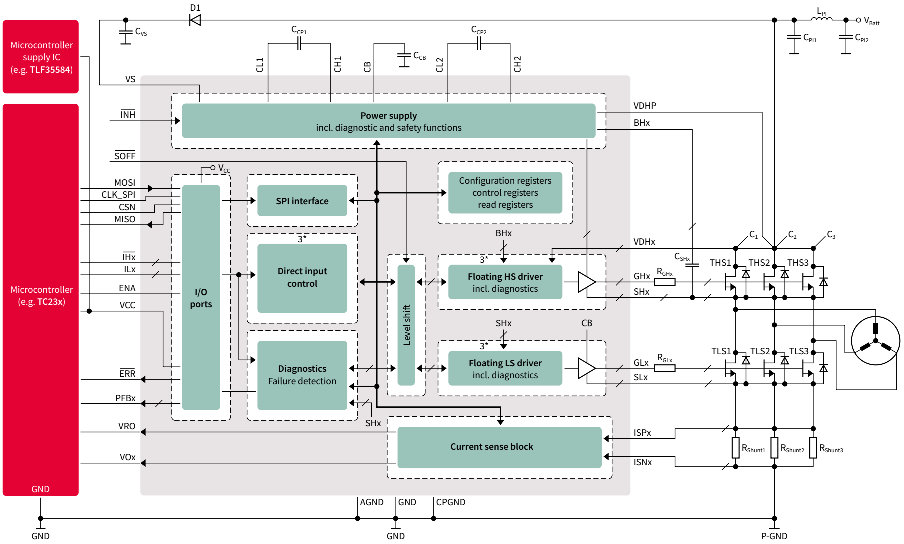
TLE9180D-21QK / TLE9180D-31QK

The TLE9180D-21QK and TLE9180D-31QK are advanced gate driver ICs dedicated to control 6 external N-channel MOSFETs forming an inverter for high current 3-phase motor drives application in the automotive sector.

A sophisticated high voltage technology allows ICs to support applications for single and mixed battery systems with battery voltages of 12 V, 24 V and 48 V. An integrated SPI interface is used to configure the IC for the application after power-up. After successful power-up parameters can be adjusted by SPI, monitoring data, configuration and error registers can be read. Cyclic redundancy check over data and address bits ensures safe communication and data integrity.

The TLE9180D-21QK has two integrated current sense amplifier (CSA) for shunt signal conditioning, whereas the TLE9180D-31QK has three CSA. Gain and zero current voltage offset can be adjusted by SPI. The offset can be calibrated. The IC has an integrated safety barrier that protects the microcontroller from potential damages in case of GDU failure.

Typical application schematic



Key features

- Supply range from 5.5 V - 60 V
- Powerful driver stage with typ. 2 A output current per channel
- 0 to 100% duty cycle range
- Integrated current sense amplifier for shunt signal conditioning
- Extended protection & supervision
- LQFP-64 exposed pad package

Key benefits

- Suitable for 12 V, 24 V and 48 V battery voltages
- Integrated load current measurement
- Detailed diagnosis supports safety relevant use cases
- Limp home mode

Key applications

- 48 V motor drives
- Cooling fans
- Water pump
- Oil pump
- HVAC compressor
- Commercial and agricultural vehicles

Product table

Product	Description	Ordering code	Package
TLE9180D-21QK	3-phase gate driver IC with 2 current sense amplifier	SP001615886	PG-LQFP-64
TLE9180D-31QK	3-phase gate driver IC with 3 current sense amplifier	SP001417250	PG-LQFP-64
EVAL_TLE9180D-31QK	Evaluation board for TLE9180D-31QK incl. GUI for register configuration	SP005344733	Box

48V
Engine Cooling Fan
Water pump
Oil pump
eClimate compressor
CAV

EiceDRIVER^{TM} APD 2ED4820-EM

48 V smart high side MOSFET gate driver with SPI for automotive applications

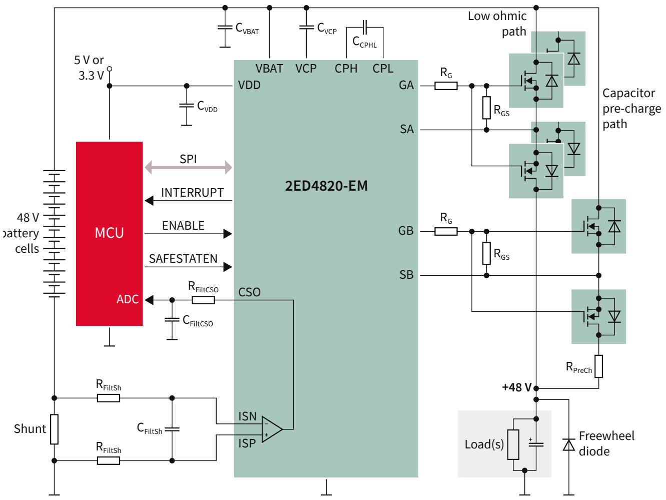
The EiceDRIVER^{TM} 2ED4820-EM is a smart high side N-channel MOSFET gate driver with two outputs controlled via SPI. The integrated powerful charge pump allows external MOSFETs to stay continuously on. Thanks to the enhanced turn-on and turn-off ability of the driver, the number of MOSFETs could be easily scaled up to manage large currents in the order of several hundred amps, while ensuring fast switch on and off. The MOSFETs could be controlled in a back to back configuration either common mode or common source. The integrated current sense amplifier supports high side and even load side current measurement with a dedicated monitoring output.

The 2ED4820-EM comes along with several latching failure detections, to implement protections for the external MOSFETs, the load and the power source. Parameters can be adjusted by SPI; monitoring data, configuration, warning and failure detection registers can be read.

Summary of Features

- › Extended supply voltage range: 20 - 70 V
- › Two independent high-side gate driver outputs with 1 A pull down, 0.3 A pull up for fast switch off/on
- › Low supply current in sleep mode IBAT_Q < 5 µA
- › Device control, configuration and diagnostic via SPI
- › Configurable overcurrent/short circuit protection
- › Configurable Drain-Source overvoltage protection
- › Gate undervoltage lockout (VGS)
- › Ground loss detection
- › AEC-Q100 qualification
- › Lead-Free, Halogen Free, RoHS compliant

2ED4820-EM in 48 V battery protection switch application



Summary of Features

- › Supports back-to-back MOSFET topologies (common drain or common source)
- › SAFESTATEN input to trigger safe state mode in case of µC failure
- › One bidirectional high or low side analog current sense interface with configurable gain to optimize power losses
- › Robust against Vbat voltages up to 105 V and Vsource voltages versus Vbat of -90 V

Summary of Features

- › Battery protection switch
- › Input protection switch
- › Static load and supply switch for high currents

Product table

Product	Description	Ordering code	Package
2ED4820-EM	48 V smart high-side MOSFET gate driver with SPI	SP005629911	PG-TSDSO-24
2ED4820 EB2 2HSV48	2ED4820 Dual high-side switch – 48 V Evaluation Board	SP005353778	BOARD
R 48V BATT Switch10	48V Battery disconnect switch - Reference design	SP005595834	BOARD

Battery protection
Load Control & Self-Protection
Voltage conversion & isolation
Physical data provision

EiceDRIVER™ 1EDI302xAS / 1EDI303xAS

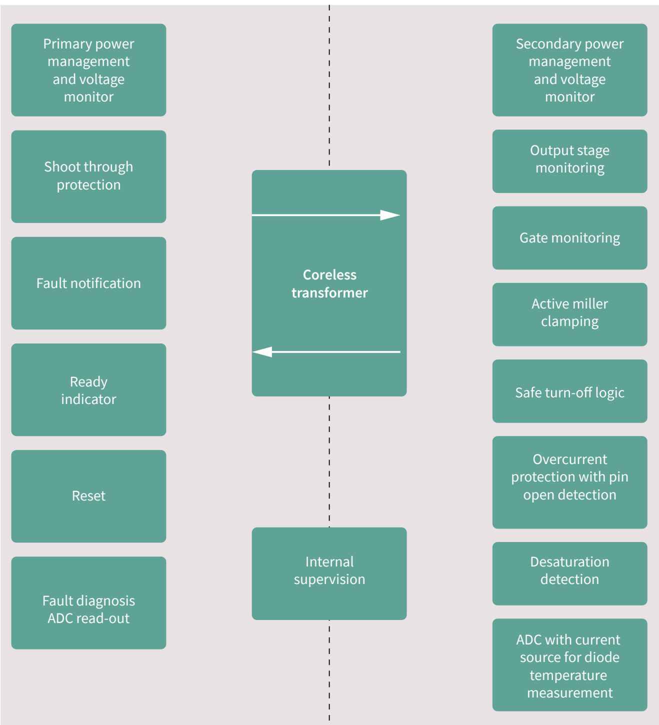
1200 V galvanically isolated automotive gate driver IC family

The EiceDRIVER™ 1EDI302xAS / 1EDI303xAS is a family of automotive qualified 1-channel high voltage gate drivers optimized for IGBT and SiC technologies. The robust Infineon Coreless Transformer Technology is used to provide bi-directional signal transfer across the galvanic isolation barrier.Comprehensive safety features and ISO26262 compliance enable ASIL D classification on system level. Accompanying safety documents ease and speed-up FMEDA analysis in the application.The compact package design and high level of feature integration save valuable PCB space and system cost, while pre-configured settings reduce design efforts. Pin-compatible product variants make it easy to switch between variants and swiftly adjust ECUs to different application needs (i.e. SiC MOSFET vs IGBT).

Product features

- Single channel isolated IGBT driver
- For IGBTs up to 1200 V
- High CMTI up to 150 V/ns
- 8 kV basic insulation according to DIN VDE V 0884-11:2017-01
- Basic insulation according to UL 1577
- Min. 12 A peak current rail-to-rail output
- Propagation delay 60 ns typical
- Typ. 10 A integrated active Miller clamp supports unipolar switching
- Integrated, accurate 12 Bit ADC for temperature measurements
- Integrated safety features to support ASIL B(D):
  - DESAT and differential OCP protection
  - Gate and output stage monitoring
  - Shoot-through protection
  - Primary/secondary supply monitoring
  - Internal supervision
- Advanced driver diagnosis with duty cycle coded DATA pin
- Green Product (RoHS compliant)
- AEC-Q100 qualified
- Compact DSO-20 fine pitch package

Simplified block diagram



Potential applications

- Traction inverters for HEV and EV
- Auxiliary inverters for HEV and EV
- High power DC/DC converters

Evaluation boards

- 1EDI30XXAS EVALBOARD
- 1EDI303XAS EVALBOARD*
- 1EDI302XAS EVALBOARD*

Product family overview

Product	Driver support	Additional functionality
1EDI3020AS	IGBT	ADC for Temperature Diode
1EDI3021AS	IGBT	Active Short Circuit
1EDI3023AS	IGBT	ADC for NTC & DC-Link
1EDI3030AS	SiC	ADC for Temperature Diode
1EDI3031AS	SiC	Active Short Circuit
1EDI3033AS	SiC	ADC for NTC & DC-Link

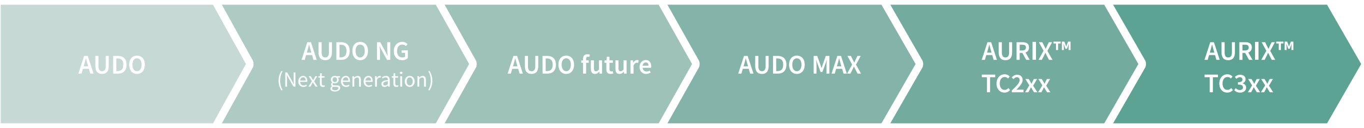
*Coming soon

Infineon controller technologies

AURIX™ 32-bit TriCore™ Microcontroller

Evolution of TriCore™ generations

In 1999, Infineon launched the first generation of the AUDO (AUtomotive unifieD processOr) family. Based on a unified RISC/MCU/DSP processor core, this 32-bit TriCore™ microcontroller was a computational power horse. And the company has evolved and optimized the concept ever since – culminating in what is now the sixth TriCore™ generation.



Thanks to its high real-time performance, embedded safety and security features, the TriCore™ family is the ideal platform for a wide range of automotive applications. These include powertrain engine management and transmission, electric and hybrid vehicles, chassis domains, braking systems, electric power steering systems, airbags, connectivity and advanced driver assistance systems to support the trend toward autonomous, clean and connected cars. TriCore™-based products also deliver the versatility required for the industrial, CAV and transportation sector, excelling in optimized motor control applications and signal processing. Infineon's broad product portfolio allows engineers to choose from a wide range of memories, peripheral sets, frequencies, temperatures and packaging options. And all this with a high degree of compatibility across generations.

The TriCore™ success story continues with the AURIX™ TC2xx multicore family. AURIX™ combines easy-to-use functional safety support, strong performance and a future-proven security solution in a highly scalable product family.

The next natural evolution in terms of performance is the AURIX™ TC3xx, which is manufactured in 40 nm embedded flash technology and designed for ultimate reliability in harsh automotive environments. As before with AURIX™, the dual frontend concept ensures continuous supply. An extensive ecosystem is available including the AUTOSAR libraries which Infineon has been developing since 2005. Plus the safety software is also available to help manufacturers meet SIL/ASIL safety standards.

MCU scalability
- Performance and flash
- Pin compatibility
- Binary-compatible cores

Safety/security concept
- ISO 26262 compliance
- Hardware security support Full EVITA
- IEC 61508 compliant

AURIX™ TC3xx

Power consumption
- On-chip SC DC-DC high-efficiency power supply
- Integrated stand-by controller

Connectivity
- Ethernet: up to 2x 1 GB
- CAN FD: up to 20 channels
- LIN: up to 24 channels
- eMMC IF

Family highlights
- Compatibility and scalability
- Lowest system cost
- Industry benchmark system performance
- Easy to use
- Broad portfolio
- Certified to automotive standards

Industrial & Multimarket

Applications
- Mobile controller
- Inverter
- Wind turbine inverter
- Servo drives
- Solar panel
- Robotics
- Medical
- Elevator

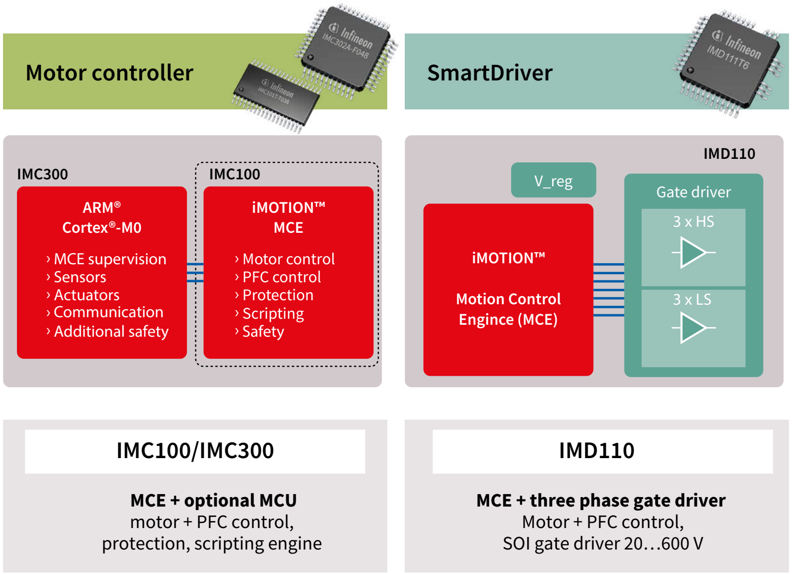
iMOTION™

Flexible and scalable platform for motor control solutions

iMOTION™ products integrate all required hardware and software functions for the control of a variable speed drive (VSD). Infineon's field proven Motion Control Engine (MCE) eliminates software coding from the motor control development process reducing the effort to the configuration for the respective motor and power stage.
The MCE implements highly efficient control of the motor and an optional power factor correction (PFC) and integrates all necessary protections and a flexible scripting engine. Configuration options allow the use of single or leg shunt current measurement as well as sensorless or hall-based field oriented control (FOC). Assisted by powerful tools like the Solution Designer it is possible to have the motor up and running in less than an hour. Integrated support for functional safety for home appliances paves the way to meet regulations in the global market

Market requirements

- Energy-efficiency regulations drive inverterization rate
- Shorter design cycles are driven by reduced product life cycles
- Focus on key differentiators drives trend to outsourcing
- Increased price pressure requires system cost reduction
- Compact DSO-20 fine pitch package



Key benefits

- Easy to use – no special motor control know-how required
- High performance and energy-optimized solution
- Simplify the system solution by eliminating the Hall sensor for control
- Fastest time-to-market

Product table

Product	Integration level	Control option	Typical applications
IMC099	MCE	Motor inverter	Simple Fans and Pumps
IMC101	MCE + Scripting	Motor inverter	Refrigerators, Washing Machines, Fans, Pumps, AirCon, Blender
IMC102	MCE + Scripting	Motor inverter + PFC	Fans, Pumps, AirCon, Blender,…
IMC301	MCE + Scripting + Arm® Cortex®-M0	Motor inverter	Refrigerators, Washing Machines, Fans, Pumps, Door & shutter drives
IMC302	MCE + Scripting + Arm® Cortex®-M0	Motor inverter + PFC	AirCon (Outdoor Unit)
IMD111	MCE + Scripting + Gate Driver	Motor inverter	Refrigerators, Fans (Table, Ceiling, Air Purifier,…)
IMD112	MCE + Scripting + Gate Driver	Motor inverter + PFC	In & Outdoor Fans

www.infineon.com/iMOTION
www.infineon.com/iMOTION-software

PSoC ™ IoT, Consumer and Industrial

PSoC™ 6

The PSoC™ 6 family is the perfect solution for secure, low-power, feature-rich IoT products. The family is built on an ultra-low-power architecture, including advanced low-power design techniques to extend battery life up to a full week for battery powered applications. The dual-core Arm® Cortex®-M4 and Cortex-M0+ architecture lets developers optimize for power and performance simultaneously. Using its dual cores combined with configurable memory and peripheral protection units, PSoC™ 6 enables Platform Security Architecture (PSA) level 2 certified MCUs.
Designers can use the MCU's rich analog and digital peripherals to create custom analog front-ends (AFEs) or digital interfaces for innovative system components such as MEMS sensors, electronic-ink displays. The PSoC™ 6 MCUs feature the latest generation of industry-leading CapSense™ capacitive-sensing technology, enabling modern touch and gesture-based interfaces that are robust and reliable.

PSoC™ 4

As a broad portfolio of Arm® Cortex®-M0 and Cortex-M0+ microcontrollers, PSoC™ 4 is ideally suited to solve the design needs of IoT developers as they connect the real world to the digital world. The MCUs feature the latest generation of industry-leading CapSense™ capacitive-sensing technology, enabling modern touch and gesture-based interfaces that are robust and reliable. In addition, the PSoC™ 4 includes a customizable analog front end through programmable analog blocks, programmable digital blocks as well as wired and wireless connectivity options such as USB, CAN, and Bluetooth® Low Energy. These unique features make PSoC™ 4 one of the industry's most-flexible and scalable low-power mixed-signal architectures.

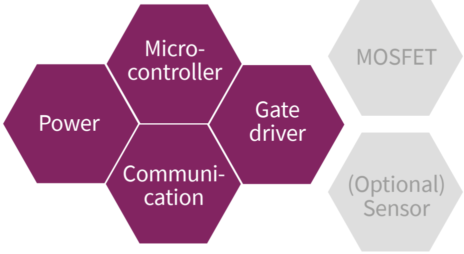
MOTIX™ Embedded Power IC

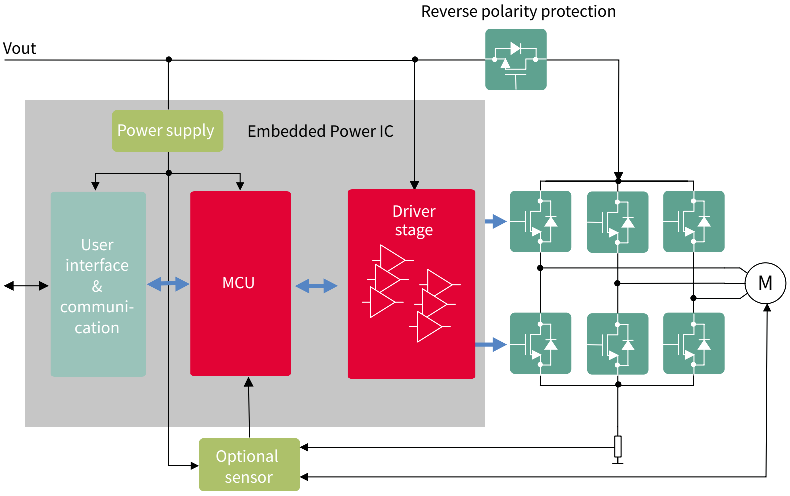
High-integrated solution for low-voltage mechatronic motor control

MOTIX™ Embedded Power ICs are specifically designed to enable mechatronic motor control solutions for a range of applications in which a small package form factor and a minimum number of external components are essential. Such applications include window lift, sunroof, wiper, fuel pump, HVAC blower, engine cooling fan, water and oil pump. Produced on Infineon's first-in-industry automotive-qualified Smart Power Technology, the MOTIX™ Embedded Power System-on-Chip (SoC) solutions offer the highest level of integration of all functions required to sense, control and actuate a motor on one single die. These functions include an Arm® Cortex®-M microcontroller, non-volatile flash memory, analog and mixed signal peripherals, communication interfaces along with driving stages needed for either relay, half-bridge or full-bridge DC and BLDC motor applications.

Applications

- Window lift
- Sunroof
- Wiper
- Fuel pump
- Oil pump
- Water pump
- Engine cooling fan
- HVAC blower





Key features and benefits

- Enable cost and board improvements – the chip comes in a compact VQFN-48/TQFP-48 package with 7 x 7 mm footprint that enables PCB space saving. The MOTIX™ Embedded Power IC families allow driving of relays and MOSFETs at VBatt > 6 V without external components, providing very cost effective solution on a system level. Extensive diagnostics and protections features are embedded within the system-on-chip
- Intelligent power saving modes including stop and sleep mode and energy management for external sensors (on demand)
- Support multiple and flexible designs with minimal effort – all MOTIX™ Embedded Power ICs are software compatible, maximizing a single design through scalability.

Criteria	TLE984x	TLE9845	TLE9850/1	TLE985x	TLE986x	TLE987x
Controller	Arm® Cortex® M0				Arm® Cortex® M3	
Core frequency	25-40 MHz	40 MHz			24-40 MHz	
Flash size	36KB – 64KB	48KB	48/64KB	48KB – 96KB	36KB – 256KB	
Driver stage	Relay	Half-bridge		Half-bridge		B6-bridge
		PN FET	NN FET	N FET		
High-voltage monitor inputs	4-5	5	4		0-1	
Junction temperature levels	150°C	150°C	150°C/175°C	150°C/175°C	150°C/175°C	
Packages	VQFN-48-31		VQFN-48-29, VQFN-48-31	VQFN-48-29, VQFN-48-31	VQFN-48-29 , VQFN-48-31, TQFP-48-10	

Tools and Software

- MOTIX™ Embedded Power ICs are supported by a complete development tool chain provided by Infineon and third-party vendors.
- The tool chain includes compilers, debuggers, several evaluation boards, LIN low level drivers and configuration tools as well as various software code examples. Additional tools supporting the design-in process are available via the Infineon Toolbox.

MOTIX™ Embedded Power ICs

TRAVEO™ II portfolio

Thanks to its special features the Traveo™ II family is the perfect match for industrial applications. With processing power and network connectivity built into a single Arm® Cortex®- M4F and dual Cortex®- M7F, the Traveo™ II family comes up with an enhanced performance up to 1500 DMIPS and a high-performance CPU operating up to 350 MHz.

Product type	Supply Voltage [V]	Main Core frequency [MHz]	Flash (Code + Work) [kB]	SRAM [kB]	GPIO	ADC Channels	CAN/CAN FD Channels	Ethernet 100/1000 Mbit	SCB Channel	CXPI Channel	SMIF (SPI/HyperBus)	LIN Channel	I^{2}S Channel	eMMC Channels	HSM	Temperature ranges	Packages	SIL Level
TRAVEO™ II CYT2B7 series																		
CYT2B75CADQ0AZEGS	2,7 to 5,5	160	1088 + 96	128	78	39	6	no	8	0	-	7	-	0	Yes	E	100-LQFP	ASIL-B
CYT2B78CADQ0AZEGS	2,7 to 5,5	160	1088 + 96	128	152	64	6	no	8	0	-	8	-	0	Yes	E	176-LQFP	ASIL-B
TRAVEO™ CYT2B9 series																		
CYT2B95CACQ0AZEGS	2,7 to 5,5	160	2112 + 128	256	78	39	8	no	8	4	-	9	-	0	Yes	E	100-LQFP	ASIL-B
CYT2B98CACQ0AZEGS	2,7 to 5,5	160	2112 + 128	256	152	64	8	no	8	4	-	12	-	0	Yes	E	176-LQFP	ASIL-B
TRAVEO™ CYT3BB series																		
CYT3BB8CEBQ0AESGS	2,7 to 5,5	250	4160 + 256	768	148	64	8	1	10	0	1	16	TX 3ch, RX 3ch (3 instances)	1	Yes	S	176-TEQFP	ASIL-B
CYT3BBBCEBQ0BZEGS	2,7 to 5,5	250	4160 + 256	768	220	72	8	1	11	0	1	16	TX 3ch, RX 3ch (3 instances)	1	Yes	E	272-BGA	ASIL-B
TRAVEO™ CYT4BF series																		
CYT4BF8CEDQ0AEEGS	2,7 to 5,5	350	8384 + 256	1024	148	81	10	1	10	0	1	17	TX 3ch, RX 2ch (3 instances)	1	Yes	E	176-TEQFP	ASIL-B
CYT4BFCCJDQ0BZEGS	2,7 to 5,5	350	8384 + 256	1024	240	86	10	2	11	0	1	20	TX 3ch, RX 2ch (3 instances)	1	Yes	E	320-BGA	ASIL-B

XMC™

One microcontroller platform – countless solutions

Infineon's XMC™ 32-bit industrial microcontroller portfolio is designed for efficiency and demanding industrial applications.

XMC™ MCU portfolio

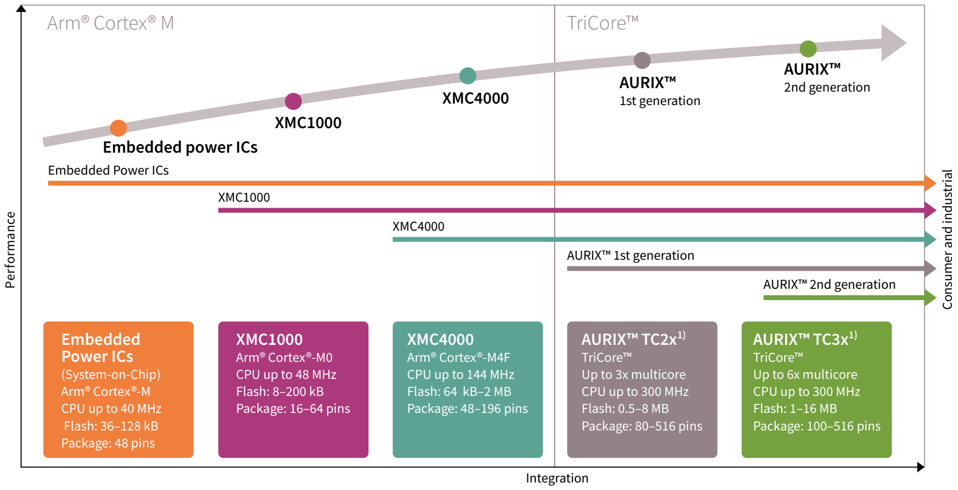
- RAM: 8 kB up to 352 kB
- Flash: 16 kB up to 2 MB
- Accurate analog mixed-signal peripherals
- Fast timer/PWM peripherals
- Rich communication interfaces
- 16-pin to 196-pin count packages

XMC1000 family

- Arm® Cortex®-M0 up to 48 MHz
- Peripherals up to 96 MHz
- One-time event request unit (ERU)
- V_{DD}: 1.8 to 5.5 V
- $T_{Ambient}$: -40°C to 105°C

XMC4000 family

- Arm® Cortex®-M4 up to 144 MHz
- Built-in DSP, SFPU
- Peripherals up to 144 MHz
- Event request unit (ERU)
- $T_{Ambient}$: -40°C to 125°C

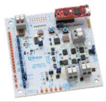


1) AURIX™ devices add safety and CAN FD

	XMC™ entry	LED lighting	Digital power	Motor control	Industrial I/O
XMC4000 Arm® Cortex®-M4F up to 144 MHz core 64 kB-2 MB Flash up to 125°C				**XMC4700/4800** Industrial drives, Hall and encoder I/F, ΔΣ demodulator, LQFP-100/144 LFBGA-196	**XMC4800, XMC4300** EtherCAT, +drives MultiCAN - 6 nodes LQFP-100/144 LFGBGA-196
	XMC4100 Basic control and connectivity VQFN-48 LQFP-64		**XMC4200** Server power 150 ps HRPWM LQFP-64/100	**XMC4100/XMC4400** Industrial drives, Hall and encoder I/F, ΔΣ demodulator, LQFP-64/100/144 LFBGA-144	**XMC4500** MultiCAN - 3 nodes, Ethernet, +drives ext. memory, SD/MMC LQFP-100/144 LFBGA-144
XMC1000 Arm® Cortex®-M0 up to 48 MHz core/ 96 MHz peripheral 8-200 KB flash up to 105°C 1.8-5.5 V		**XMC1400** Flicker-free, 4-Ch LED, SMPS, connectivity VQFN-40/64 LQFP-64	**XMC1400** SMPS control, connectivity VQFN-40/64 LQFP-64	**XMC1400** Hall and encoder I/F, MATH co-processor, CAN VQFN-40/64 LQFP-64	**XMC1400** Multi CAN - 2 nodes VQFN-48/64 LQFP-64
	XMC1100 Basic control and connectivity TSSOP-16/38 VQFN-24/40	**XMC1200, XMC1300** Flicker-free, 4-Ch LED, SMPS, connectivity TSSOP-16/28/38 VQFN-24, -40	**XMC1300** SMPS control, connectivity, TSSOP-16/38 VQFN-24/40	**XMC1300** Hall and encoder I/F, MATH co-processor, TSSOP-16/38 VQFN-24/40	

www.infineon.com/xmc

Infineon gate driver evaluation boards

Board Picture	Product	Board Description	Topology	Highlighted products	Application				
					Automotive electric drive train	Automotive low V motor control	Automotive power distribution	CAV	Solar
	1EDI2010AS EVALKIT	EiceDRIVER™ Sense IGBT gate driver evaluation kit for traction inverter applications	Half Bridge	1EDI2010AS, 1EBN1001AE	✓				
	1EDI302XAS EVALBOARD	Evalboard with 1EDI3021AS and 1EDI3020AS	Full Bridge	1EDI3021AS, 1EDI3020AS	✓				
	1EDI303XAS EVALBOARD	Evalboard with 1EDI3031AS and 1EDI3033AS	Half Bridge	1EDI3031AS, 1EDI3033AS	✓				
	1EDI30XXAS EVALBOARD	EiceDRIVER™ 1EDI30xxAS evaluation board without pre-mounted parts. Can switch between different variants	Half Bridge	1EDI302xAS, 1EDI303xAS	✓				
	24V BATT SWITCH DEMO	Reference board of a semiconductor based solution of a 24 V battery protection switch for trucks	Single high-side	AUIR3242, IPLU300N04S4			✓	✓	
	AUIR3241S Board B2B	Board for 12 V automotive applications, with a back to back, N-channel MOSFET common source structure.	Single high-side	AUIR3241S, IAUC120N04S6			✓		
	AUIR3242S Board B2B	Board for 12 V automotive applications, with a back to back, N-channel MOSFET common source structure.	Single high-side	AUIR3242S, IAUC120N04S6			✓		
	BLDC SHIELD_TLE956X	Board connected to PC via UIO stick using ConfigWizard in Infineon Toolbox, with Arduino Shield interface for rapid prototyping	3-Phase	TLE9563-3QX, TLE9564QX		✓			
	DC SHIELD_TLE956X	Board connected to PC via UIO stick using ConfigWizard in Infineon Toolbox, with Arduino Shield interface for rapid prototyping	3-Phase	TLE9560-3QX, TLE9561QX, TLE9561-3QX, TLE9562QX, TLE9562-3QX		✓			
	EVAL_TLE9180D-31QK	Eval board for three-phase gate driver, operated at an input voltage range from 12 V up to 48 V DC	3-Phase	TLE9180D-31QK, LE9180D-21QK		✓			
	EVAL-6ED100HPDRIVE-AS	Eval board for FSxxxR08A6P2xx with EiceDriver Sense/Lite/Boost, Standalone	3-Phase	1EDI2010AS	✓				
	KIT_A2G_TC387_MOTORCTR	AURIX™ TC3xx motor control application kit contains AURIX™ TC387 application kit TFT, 3-phase motor control Power board, a BLDC motor with encoder, Power supply, and pre-flashed SW.	3-Phase	TLE9180D-21QK, TLE9180D-31QK		✓			
	R 48V BATT Switch10	Reference board of a 48 V battery protection switch including pre-charge path and current sensing	Dual high-side	2ED4820-EM, IAUT300N08S5, TLE4972-AE35D5			✓	✓	✓
	2ED4820 EB2 2HSV48	Evaluation Board for 48 V power distribution with pre-charge path controlled by Config Wizard for 2ED4820 tool.	Dual high-side	2ED4820-EM			✓	✓	
	TLE92104-23QX APPKIT	Application kit with MOTIX™ multi MOSFET driver IC and 4 MOSFET half-bridges to drive up to 3 DC motors. The board can be connected to computer via uIO stick and evaluate using Config Wizard in Infineon Developer Center.	4 x Half Bridges	TLE92104-23QX		✓			
	TLE92108-23QX APPKIT	Application kit with MOTIX™ multi MOSFET driver IC and 8 MOSFET half-bridges to drive up to 7 DC motors. The board can be connected to computer via uIO stick and evaluate using Config Wizard in Infineon Developer Center.	8 x Half Bridges	TLE92108-23QX		✓			

Infineon gate driver evaluation boards

Board Picture	Product	Board Description	Topology	Highlighted products	CAV	EV-charging	LEV	Motor control & drives	SMPS	Solar
	2ED100E12-F2	EvalBoard for EconoDUAL™3 Modules using 1-ch isolated gate driver with DESAT	Half Bridge	1ED020I12-F2	✓			✓		✓
	2ED250E12-F	EvalBoard for PrimePACK™ Modules using 1-ch isolated gate driver with DESAT	Half Bridge	1ED020I12-F2	✓			✓		✓
	2ED300E17-SFO	EvalBoard of IGBT driver boards for all IGBT modules up to 1700 V	Half Bridge	2ED300C17-S / -ST	✓			✓		✓
	6ED100E12-F2	Evalboard for EconoPACK™+ IGBT modules using 1-ch isolated gate driver with DESAT	3-Phase	1ED020I12-F2	✓			✓		✓
	EVAL_PS_DP_MAIN	Mother board of the universal Discrete evaluation platform for 600 V - 1200 V device in TO-247 3-/4-pin	Half Bridge		✓	✓		✓	✓	✓
	EVAL-1ED020I12F2-DB	Daughter Board of EVAL_PS_DP_MAIN to evaluate 1-ch isolated gate driver with DESAT with CoolSiC™	Half Bridge	1ED020I12-F2	✓	✓		✓		✓
	REF-SIC-D2PAK-MC	Daughter Board of EVAL_PS_DP_MAIN to evaluate 1200 V CoolSiC™ MOSFET in TO263-7	Half Bridge	IMBG120R030M1H, 1EDC20I12MH	✓	✓		✓	✓	✓
	REF-SIC-D2PAK-BP	Daughter Board of EVAL_PS_DP_MAIN to evaluate 1200 V CoolSiC™ MOSFET in TO263-7	Half Bridge	IMBG120R030M1H, 1EDI20H12AH	✓	✓		✓	✓	✓
	REF-1EDC20I12MHDPV2	Daughter Board of EVAL_PS_DP_MAIN to evaluate 1EDC20I12MH	Half Bridge	1EDC20I12MH	✓	✓		✓	✓	✓
	REF-1EDC60H12AHDPV2	Daughter Board of EVAL_PS_DP_MAIN to evaluate 1EDC60H12AH	Half Bridge	1EDC60H12AH	✓	✓		✓	✓	✓
	EVAL_PS_SIC_DP_MAIN	Mother board of 1200 V CoolSiC™ MOSFET evaluation platform to evaluate the switching behaviour	Half Bridge	IMZ120R045M1	✓	✓		✓	✓	✓
	REF_PS_SIC_DP1	Daughter board of EVAL_PS_SIC_DP_MAIN with 1-ch isolated driver with Miller clamp	Half Bridge	1EDC20I12MH	✓	✓	✓	✓	✓	✓
	REF_PS_SIC_DP2	Daughter board of EVAL_PS_SIC_DP_MAIN with 1-ch isolated driver with Bipolar supply	Half Bridge	1EDC60H12AH	✓	✓	✓	✓	✓	✓
	EVAL-1ED3121MX12H	Evalboard for 2300 V, 5.5 A, 1-ch isolated driver with separate output and TRENCHSTOP™ IGBT	Half Bridge	1ED3121MC12H, IKQ75N120CH3	✓	✓	✓	✓	✓	✓
	EVAL-1ED3122MX12H	Evalboard for 2300 V, 10 A, 1-ch isolated driver with Miller clamp and TRENCHSTOP™ IGBT	Half Bridge	1ED3122MC12H, IKQ75N120CH3	✓	✓	✓	✓	✓	✓
	EVAL-1ED3124MX12H	Evalboard for 2300 V, 14 A, 1-ch isolated driver with separate output and TRENCHSTOP™ IGBT	Half Bridge	1ED3124MC12H, IKQ75N120CH3	✓	✓	✓	✓	✓	✓
	EVAL-1ED3241MC12H	Evalboard for 2300 V, 18 A, 1-ch isolated driver with 2 level slew rate control	Half Bridge	1ED3241MC12H	✓	✓		✓		✓

Infineon gate driver evaluation boards

Board Picture	Product	Board Description	Topology	Highlighted products	Battery powered applications	CAV	EV-charging	Home appliance	LEV	Motor control & drives	SMPS	Solar
	EVAL-1ED3251MC12H	Evalboard for 2300 V, 18 A, 1-ch isolated driver with 2 level slew rate control and Miller clamp	Half Bridge	1ED3251MC12H		✓	✓			✓		✓
	EVAL-1ED3321MC12N	Evalboard for 2300V, up to 8.5A 1-ch isolated driver with short-circuit protection and Miller Clamp	Half Bridge	1ED3321MC12N		✓	✓			✓		✓
	EVAL-1ED3491MX12M	Evalboard for 2300 V, 9 A, 1-ch isolated driver with register configurability, DESAT, Miller clamp, Soft-off	Half Bridge	1ED3491MC12M		✓	✓			✓		✓
	EVAL-1ED3890MX12M	Evalboard for 2300 V, 9 A, 1-ch isolated driver with I2C configurability, DESAT, active Miller clamp, Soft-off	Half Bridge	1ED3890MC12M		✓	✓			✓		✓
	EVAL-1ED38X0DCT	Companion board for EVAL-1ED3890MX12M for gate driver configuration purposes	Half Bridge	XMC4200		✓	✓			✓		✓
	EVAL-PSIR2085	Power supply board to support the EiceDRIVER™ isolated driver boards, such as the EVAL-1ED3122MX12H	Half-Bridge	IR2085S		✓	✓		✓	✓	✓	✓
	EVAL-1ED020I12-B2	EvalBoard for 1-ch isolated gate driver with DESAT and IGBT module	Half Bridge	1ED020I12-B2, FS25R12W1T4_B11		✓	✓			✓		✓
	EVAL-1ED020I12-BT	EvalBoard for 1-ch isolated gate driver with DESAT and two-level turn-off and TRENCHSTOP™ IGBT	Half Bridge	1ED020I12-BT, IKW25N120H3		✓	✓			✓		✓
	EVAL-1EDI60I12AF	Evalboard for 1200 V, 10 A, 1-ch isolated driver with separate output and TRENCHSTOP™ IGBT	Half Bridge	1EDI60I12AF, IKW50N65F5		✓	✓		✓	✓	✓	✓
	EVAL-1EDS20I12SV	Evalboard with 1200 V, 2 A, 1-ch isolated driver with slew rate control and DESAT and EconoDUAL™3 modules	Half Bridge	1EDS20I12SV, FF600R12ME4_B11		✓				✓		✓
	EVAL-2ED020I12-F2	Evalboard for 1200 V, 2 A, 2-ch isolated driver with DESAT and Miller clamp and TRENCHSTOP™ IGBT	Half Bridge	2ED020I12-F2, IKP20N60H3		✓	✓			✓		✓
	EVAL-1ED44173N01B	A simple adapter board that can integrate into an already existing board to evaluate the 1ED44173N01B	Low-side switch	1ED44173N01B			✓	✓		✓	✓	✓
	EVAL-1ED44175N01B	A simple adapter board that can integrate into an already existing board to evaluate the 1ED44175N01B	Low-side switch	1ED44175N01B			✓	✓		✓	✓	✓
	EVAL-1ED44176N01F	Show the functionalities and key features of the low-side gate driver with integrated overcurrent protection	Low-side switch	1ED44176N01F, IRLML2803TRPBF			✓	✓		✓	✓	✓
	EVAL-2EDL05I06PF	EvalBoard for 600 V, 0.5 A half bridge SOI driver and TRENCHSTOP™ IGBT	Half Bridge	2EDL05I06PF, IKD04N60RF	✓			✓	✓	✓	✓	
	EVAL-2EDL23I06PJ	EvalBoard for 600 V, 2.3 A half bridge SOI driver and TRENCHSTOP™ IGBT	Half Bridge	2EDL23I06PJ, IKP20N60H3	✓			✓	✓	✓	✓	
	EVAL-2EDL23N06PJ	EvalBoard for 600 V, 2.3 A half bridge SOI driver and CoolMOS™	Half Bridge	2EDL23N06PJ, IPL60R199CP	✓			✓	✓	✓	✓	
	EVAL-6EDL04I06PT	EvalBoard for 600 V, 0.4 A 3-phase SOI driver and TRENCHSTOP™ IGBT	3-Phase	6EDL04I06PT, IKD04N60R				✓	✓	✓		

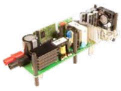
Infineon gate driver evaluation boards

Board Picture	Product	Board Description	Topology	Highlighted products	Battery powered applications	EV-charging	Home appliance	LEV	Motor control & drives	SMPS	Solar
	EVAL-6EDL04N02PR	EvalBoard for 200 V, 0.4 A 3-phase SOI driver and OptiMOS™	3-Phase	6EDL04N02PR, BSB044N08NN3G	✓		✓	✓	✓		
	EVAL_6EDL7141_TRAP_1SH	EvalBoard for 12-24V battery operated motor drive with XMC1404 and available GUI for configuration	3-Phase	6EDL7141, BSC007N04LS6, XMC1404	✓		✓	✓	✓		
	EVAL-IGBT-1200V-247	Adaptable double pulse tester for IGBTs in TO-247 4pin package	Half Bridge	IKY75N120CH3, 1EDI60I12AH		✓	✓		✓	✓	✓
	EVAL-IGBT-650V-TO247-4	Adaptable double pulse tester for IGBTs in TO-247 4pin package	Half Bridge	IKZ50N65EH5, IKZ50N65NH5, IKW50N65H5, 1EDI60I12AF		✓	✓		✓	✓	✓
	EVAL-PS-IRS200x	Stepper motor board with 200 V half-bridge level shift gate driver	Four phase	IRS2005S, IPP180N10N3 G	✓		✓	✓	✓		
	KIT_LGMB_BOM003	Modular PCB with EiceDRIVER™ SOI half bridge driver for low voltage drives scalable power demoboard platform	Half Bridge	2EDL23N06PJ, IFX91041EJV50	✓			✓	✓		
	KIT_LGMB_BOM503	Modular PCB with EiceDRIVER™ SOI half bridge driver for low voltage drives scalable power demoboard platform	Half Bridge	2EDL23N06PJ	✓			✓	✓		
	EVAL-M1-2ED2106S	Evalboard for BLDC motor with driver, IGBTs, can be connected with external controller board (EVAL-M1-101T)	3-Phase	2ED2106S06F, IKB10N65ET6			✓		✓		
	EVAL-M3-TS6-665PN	Three-phase inverter stage and PFC for motor drives application	3-Phase, PFC	IRS2890DS, IRS44273L, IKB20N65EH5			✓		✓		
	EVAL-PFC5KIKWWR5SYS	Fast switching, analog-controlled two-channel interleaved 5 kW PFC converter	Interleaved PFC	1ED44175N01B, IKW40N65WR5, IDW60C65D1		✓	✓			✓	
	DEMO-PTOOL-300W-M	Design kit for cordless power tools using the DirectFET™ ME/MF and XMC1300 family	3-Phase	"IRF7480M, 2EDL05N06PF IFX91041EJ V50"	✓		✓		✓		
	REF_FRIDGE_C101T_6ED	Reference design board designed for refrigerator compressors.	3-Phase	6EDL04I06PT, IKD04N60RC2, IMC101T-T038			✓		✓		
	REF-SHA35WRC2SYS	Ceiling fan application reference design kit	3-Phase, PFC	IRS44273L/1ED44171N01B, IMD112T, IKA08N65H5, IKN03N60RC2			✓		✓		
	REF-AIRCON-C302A-IM564	Three-phase turnkey motor drive starter kit for residential air conditioner	3-Phase, PFC	1ED44175N01B, IMC302, IM564-X6D, ICEAR4770BZS			✓		✓		

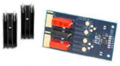
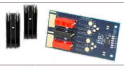
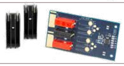
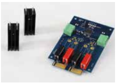
Infineon gate driver evaluation boards

Board Picture	Product	Board Description	Topology	Highlighted products	CAV	EV-charging	Home appliance	Motor control & drives	SMPS	Solar
	REF-HAIRDRYER-C101-6ED	Turn-key reference design kit for high-performance, high-efficiency PMSM/BLDC motor drive applications	3-Phase	6EDL04I06PT, IMC101T-T038, IKD06N60RF			✓	✓		
	REF-VACUUM_C101_2ED	Reference design for low voltage, high performance & efficiency, and high RPM PMSM/BLDC motor drive	3-Phase	2ED2304S06F, IMC101T-T038, BSC030N04NS G			✓	✓		
	EVAL-M5-IGBT7	650 V TRENCHSTOP™ IGBT 7 T7 evaluation board optimized for GPD / Servo drives and aircon PFC	3-phase	IKW40N65ET7, IKW40N120CS7, 1EDI20H12AH			✓	✓		
	EVAL-M5-E1B1245N-SIC	Evalboard for motor drive with CoolSiC™ sixpack module and isolated gate driver.	3-Phase	FS45MR12W1M1_B11, 1EDI20H12AH, 1ED44176N01F	✓			✓		
	EVAL-M1-IR2214	Motor drive board with EiceDRIVER™ IR2214SS half-bridge gate driver with DESAT	3-Phase	IR2214SS, FP50R12KT4G	✓			✓		
	EVAL-M1-6ED2230-B1	Motor drive board with 1200 V, 3-phase SOI driver with OCP and EasyPIM™ 1B module	3-Phase	6ED2230S12T, FP15R12W1T4				✓		
	EVAL-PS-E1BF12-SIC	Eval Board for CoolSiC™ Easy1B half-bridge modules with isolated gate driver for bidirectional buck-boost converter	Buck ; Boost	FF11MR12W1M1_B11, FF23MR12W1M1_B11, 1EDI60I12AF	✓	✓		✓		✓
	EVAL-FFXMR12KM1DR	Evaluation board for 1200 V CoolSiC™ MOSFET 62 mm half-bridge modules	Half Bridge	FF2MR12KM1, 1EDI20I12AH	✓	✓		✓		✓
	REF-DAB11KIZSICSYS	11 kW SiC bi-directional DC/DC converter board for EV Charging and ESS applications	LLC	IMZ120R030M1H, 1EDC20I12AH	✓	✓		✓		✓
	EVAL_1EDF_G1B_HB_GAN	High-frequency half-bridge evalboard featuring EiceDRIVER™ GaN	Boost, Buck, LLC	IGOT60R070D1, 1EDF5673K		✓			✓	
	EVAL_3K6W_LLC_GAN	3600W, 385V to 52V LLC DC-DC demonstration board using CoolGaN™ 600V e-mode HEMT IGT60R070D1	Full Bridge ; LLC	IGT60R070D1, ICE2QR2280Z-1, ICE2HS01G, 1EDI20N12AF, BSC026N08NS5		✓			✓	
	EVAL_2500W_PFC_GAN_A	2500W full-bridge totem-pole power factor correction evaluation board using CoolGaN™ 600V e-mode HEMT	Full Bridge ; PFC	IGO60R070D1, IPT65R033G7, 1EDI20N12AF, 1EDI60N12AF, 2EDN7523G		✓			✓	
	EVAL_1K4W_ZVS_FB_CFD7	Full Infineon solution for the high voltage DC-DC stage of a 1.4 kW server/industrial SMPS	ZVS PSFB	IPL60R140CFD7, 1EDN7512G, 2EDS8265H, XMC4200-F64k256BA, BSC016N06NS		✓			✓	
	EVAL_1K4W_ZVS_FB_SMD	1.4 kW 12 V phase-shift full-bridge with 600 V CoolMOS™ CFD7 and XMC™	Buck, ZVS PSFB	IPL60R140CFD7, 1EDN7512G, 2EDS8265H, XMC4200-F64k256BA, BSC016N06NS		✓			✓	
	EVAL_1K6W_PSU_G7_DD	1.6 kW Titanium server power supply with 600 V CoolMOS™ G7 SJ MOSFET in DDPAK package	PFC, LLC	IPDD60R150G7, IPDD60R050G7, 2EDN7524F, IDDD08G65C6, BSC007N04LS6, 1EDI20N12AF		✓			✓	
	EVAL_2500W_PFC_GAN_A	2.5 kW full-bridge PFC high-efficiency evaluation board using CoolGaN™ 600V e-mode HEMTs	Full Bridge, PFC	IGO60R070D1, IPT65R033G7, 1EDI20N12AF, 1EDI60N12AF, 2EDN7523G, 2EDN7524F		✓			✓	
	EVAL_2K4W_ACT_BRD_S7	2.4 kW high power density PFC converter using 600 V CoolMOS™ S7	Full Bridge, PFC, Single Phase	IPT60R022S7, IPZ60R040C7, IDH12G65C6, ICE3PCS01G, 1EDN8550B, BAT165		✓			✓	

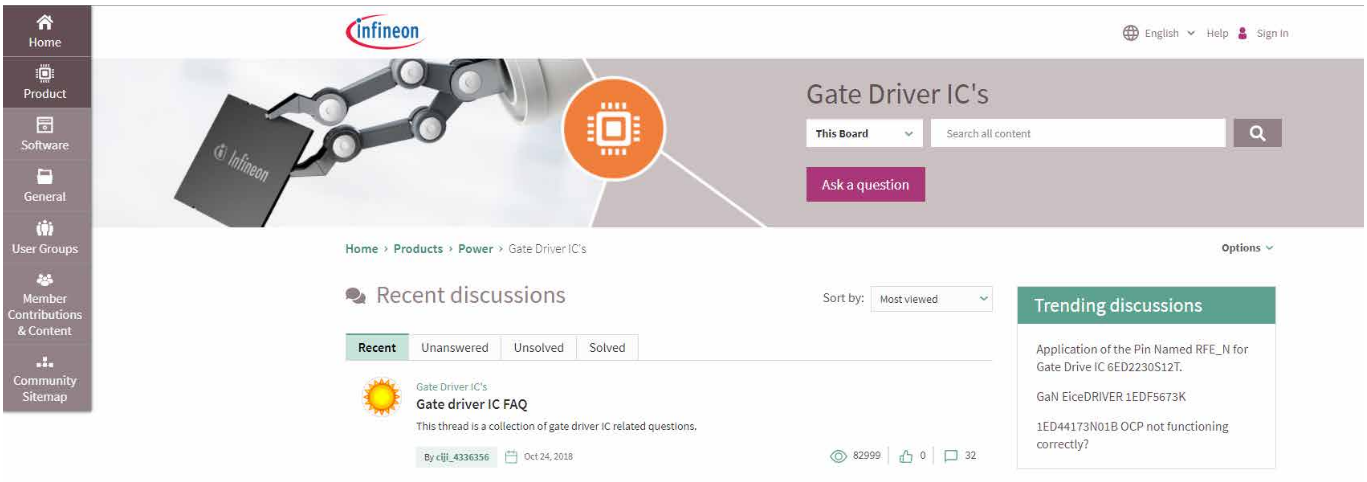
Infineon gate driver evaluation boards

Board Picture	Product	Board Description	Topology	Highlighted products	EV-charging	SMPS
	EVAL_2K5W_CCM_4P_V3	2.5 kW CCM PFC, 110/230 VAC to 400 VDC, >98% peak efficiency, 65/100 kHz	Buck, PFC, CCM	IPZ60R040C7, IPU95R3K7P7, IDH16G65C5 ICE3PCS01G, 1EDI60N12AF, ICE3RBR4765JZ	✓	✓
	EVAL_2KW_48V_CHAR_P7	48 V lead-acid/Li-ion battery charger 2 kW high efficient evaluation board based on CoolMOS™ P7	Dual-boost PFC, LLC	IPW60R080P7, IPW60R060P7, BSC030N08NS5, 2EDN7524F, IRS21814S, XMC1403	✓	✓
	EVAL_2KW_ZVS_FB_CFD7	2 kW ZVS phase-shift full-bridge evaluation board	ZVS	IPW60R070CFD7, IPP110N20N3 G, 2EDN7524F ICE3RBR4765JZ, 2EDN7524F	✓	✓
	EVAL_3K3W_BIDI_PSFB	The board consists of a phase shift full bridge with synchronous rectification (SR) in full bridge configuration	Full-bridge	2EDS8265H	✓	✓
	EVAL_3K3W_LLC_HB_CFD7	Evaluation board 3.3 kW 52 V LLC with 600 V CoolMOS™ CFD7	HB LLC	IPW60R018CFD7, BSC037N08NS5, XMC4200, 1EDI20N12AF, 2EDF7275F, IPU80R4K5P7	✓	✓
	EVAL_3K3W_TP_PFC_CC	CoolMOS™ CCM totem pole PFC - 3.3 kW solution with silicon	CCM, PFC, Single Phase	IPT60R090CFD7, IPT60R022S7, BSZ440N10NS3, IDDD08G65C6, 2EDF7275F	✓	✓
	EVAL_3K3W_TP_PFC_SIC	3.3 kW CCM bidirectional totempole PFC using 650 V CoolSiC™, 600 V CoolMOS™ C7 and XMC™	PFC	IMZA65R048M1, IPW60R017C7, 2EDF7275F ICE5QSAG, IPU95R3K7P7, XMC1404	✓	✓
	EVAL_3KW_2LLC_C7_20	3 kW Dual LLC Evaluation Board	LLC	IPP60R040C7, BSC093N15NS5, 2EDN7524R, 1EDI60N12AF, 2N7002, BSS316N	✓	✓
	EVAL_3KW_2LLC_CFD7	Full Infineon solution for the high voltage DC-DC stage of a 3 kW telecom/industrial SMPS	LLC	IPW60R031CFD7, 1EDI60N12AF, BSC093N15NS5, 2EDN7524R	✓	✓
	EVAL_3KW_2LLC_P7_47	Full IFX solution for the HV DCDC stage of a 3 kW Telecom/industrial SMPS	LLC	IPW60R037P7, 1EDI60N12AF, BSC093N15NS5, 2EDN7524	✓	✓
	EVAL_3KW_50V_PSU	Server and data center 3 kW 50 V PSU	CCM, LLC, PFC	IMZA65R048M1H, IPW60R017C7, 1EDB8275F IPW60R024CFD7, 1EDB9275F, 2EDF7275F	✓	✓
	EVAL_600W_12V_LLC_C7	600 W DCDC/LLC stage, 400 V/12 V DC, 97.8% peak efficiency	HB LLC	IPP60R180C7, BSC010N04LS, 2EDL05N06PF, 2EDN7524F	✓	✓
	EVAL_600W_12V_LLC_CFD7	Full Infineon solution for the high voltage DC-DC stage of a 600 W server and industrial SMPS	HB LLC	IPP60R170CFD7, 2EDL05N06PF, BSC010N04LS, 2EDN7524	✓	✓
	EVAL_600W_12V_LLC_P7	Half bridge LLC stage of a server SMPS with the target to meet 80+ Titanium standard efficiency requirements	HB LLC	IPP60R180P7, 2EDL05N06PF, BSC010N04LS, 2EDN7524	✓	✓
	EVAL_800W_PFC_C7_V2	PFC demoboard system solution high power density 800W 130kHz platinum server design	PFC	IPP60R180C7, 2EDN7524F, IDH06G65C5, ICE3PCS01G, XMC1402-Q040X0128 AA	✓	✓
	EVAL_800W_PFC_P7	800 W 65 kHz Platinum server design	PFC, CCM	IPP60R180P7, 2EDN7524F, IDH06G65C5, ICE3PCS01G, ICE2QR2280Z	✓	✓

Infineon gate driver evaluation boards

Board Picture	Product	Board Description	Topology	Highlighted products	EV-charging	SMPS
	EVAL_800W_PSU_3P_P7	This 800 W evaluation board is a cost optimized form, fit and function test platform for server applications	PFC, LLC	IPW60R099P7, IPP60R280P7, BSC014N04LS, 1EDI20N12AF, 2EDN7524F	✓	✓
	EVAL_800W_PSU_4P_C7	This 800 W evaluation board is intended to be a form, fit and function testplatform for server applications	PFC, LLC	IPZ60R099C7, IPP60R180C7, BSC014N04LS, 1EDI20N12AF, 2EDN7524F	✓	✓
	EVAL_800W_ZVS_FB_CFD7	Infineon 800 W DC-DC ZVS full-bridge solution for server and industrial SMPS systems	ZVS	IPA60R280CFD7, 2EDN7524F, BSC026N08NS5, XMC4200-F64K256 BA, ICE3RBR4765JZ	✓	✓
	EVAL_HB_BC_1EDN8550B	Evaluate EiceDRIVER™ 1EDN-TDI, which regulate DC and AC shifts between the microcontroller and driver ground	Half-bridge buck	1EDN8550B, BSC026N08NS5	✓	✓
	EVAL_HB_PARALLELGAN	Parallel CoolGaN™ 600 V HEMTs in half-bridge configurations for higher power applications	Half Bridge	IGOT60R070D1, 1EDI20N12AF	✓	✓
	EVAL-2ED2101-HB-LLC	200 W, 500 kHz, HB-LLC evaluation board providing lower EMI, reduced overall system size and BOM cost	Flyback, LLC	2ED2101S06F, 2ED24427N01F, ICE2HS01G, ICEQSAG, PL60R650P6S, BSC022N04LS	✓	✓
	KIT_ACT_BRD_60R022S7	Line rectifier module featuring 600 V CoolMOS™ S7 with integrated control and driving scheme	Boost, CCM, PFC	IR11688, IPT60R022S7, 2EDF7275F	✓	✓
	KIT_ACT_BRD_60R040S7	Line rectifier module featuring 600 V CoolMOS™ S7 with integrated control and driving scheme	Boost, CCM, PFC	IPT60R040S7, IR11688, 2EDF7275F	✓	✓
	KIT_ACT_BRD_60R065S7	Line rectifier module featuring 600 V CoolMOS™ S7 with integrated control and driving scheme	Boost, CCM, PFC	IPT60R065S7, IR11688, 2EDF7275F	✓	✓
	KIT_DRIVER_1EDN7511B	Evaluation kit for EiceDRIVER™ 1EDN7511B single-channel low-side gate driver IC	Low-side switch	1EDN7511B	✓	✓
	KIT_DRIVER_1EDN7512B	Evaluation kit for EiceDRIVER™ 1EDN7512B single-channel low-side gate driver IC	Low-side switch	1EDN7512B	✓	✓
	KIT_DRIVER_1EDN7550B	Test platform for 1-ch non-isolated gate driver EiceDRIVER™ 1EDN7550B in SOT-23-6	Dual low-side	1EDN7550B	✓	✓
	KIT_DRIVER_2EDF7275F	Evaluation kit for EiceDRIVER™ 2EDF7275F dual-channel functional isolated gate driver IC	Half Bridge	2EDF7275F	✓	✓
	KIT_DRIVER_2EDN7524F	Test platform for 2-ch non-isolated gate driver EiceDRIVER™ 2EDN7524F in DSO-8	Dual low-side	2EDN7524F	✓	✓
	KIT_DRIVER_2EDN7524G	Test platform for 2-ch non-isolated gate driver EiceDRIVER™ 2EDN7524G in WSON-8	Dual low-side	2EDN7524G	✓	✓
	KIT_DRIVER_2EDN7524R	Test platform for 2-ch non-isolated gate driver EiceDRIVER™ 2EDN7524R in TSSOP-8	Dual low-side	2EDN7524R	✓	✓
	KIT_DRIVER_2EDS8265H	Evaluation kit for EiceDRIVER™ 2EDS8265H 2-ch reinforced isolated gate driver	Half Bridge	2EDS8265H	✓	✓
	EVAL_HB_2EDL8x2x	OPEN LOOP BUCK CONVERTER	Buck	2EDL8024G, BSC040N10NS5	✓	✓
	REF_600W_FBFB_QB	Reference design for 600 W ¼ BRICK FB-FB, 250 kHz, Power Density is 360 W/in3	Full bridge	DHP1050N10N5, 2EDL8024G	✓	✓

Gate driver community



Gate Driver IC's

Home › Products › Power › Gate Driver IC's

Recent discussions

Recent | Unanswered | Unsolved | Solved

Gate Driver IC's
Gate driver IC FAQ
This thread is a collection of gate driver IC related questions.
By ciji_4336356 Oct 24, 2018 82999 0 32

Trending discussions

Application of the Pin Named RFE_N for Gate Drive IC 6ED2230S12T.

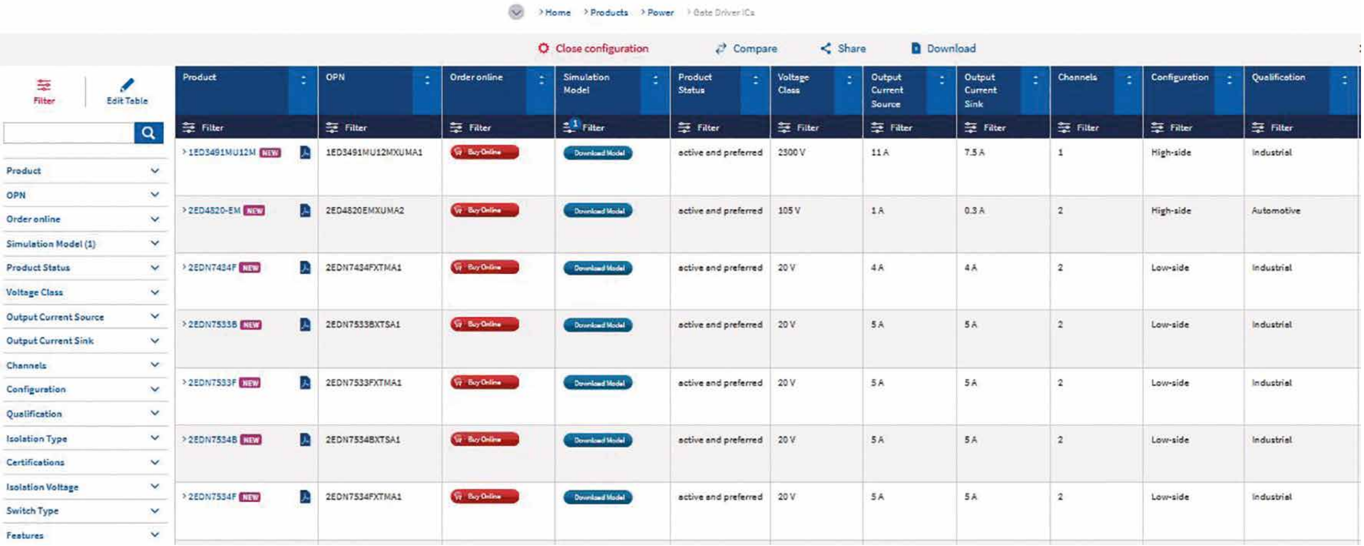
GaN EiceDRIVER 1EDF5673K

1ED44173N01B OCP not functioning correctly?

www.infineon.com/gdforum

Gate driver IC simulation model

SPICE model



Product	OPN	Order online	Simulation Model	Product Status	Voltage Class	Output Current Source	Output Current Sink	Channels	Configuration	Qualification
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1ED3491MU12M NEW	1ED3491MU12MXUMA1	Buy Online	Download Model	active and preferred	2300 V	11 A	7.5 A	1	High-side	Industrial
2ED4820-EM NEW	2ED4820EMXUMA2	Buy Online	Download Model	active and preferred	105 V	1 A	0.3 A	2	High-side	Automotive
2EDN7434F NEW	2EDN7434FXTMA1	Buy Online	Download Model	active and preferred	20 V	4 A	4 A	2	Low-side	Industrial
2EDN7533B NEW	2EDN7533BXTSA1	Buy Online	Download Model	active and preferred	20 V	5 A	5 A	2	Low-side	Industrial
2EDN7533F NEW	2EDN7533FXTMA1	Buy Online	Download Model	active and preferred	20 V	5 A	5 A	2	Low-side	Industrial
2EDN7534B NEW	2EDN7534BXTSA1	Buy Online	Download Model	active and preferred	20 V	5 A	5 A	2	Low-side	Industrial
2EDN7534F NEW	2EDN7534FXTMA1	Buy Online	Download Model	active and preferred	20 V	5 A	5 A	2	Low-side	Industrial

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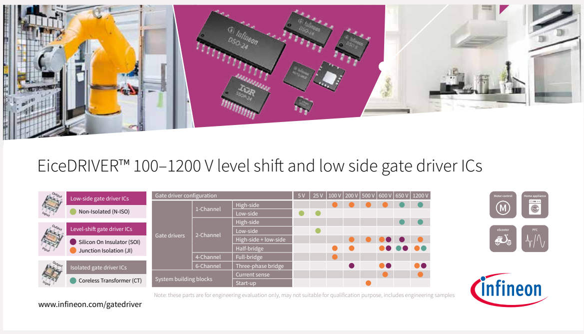
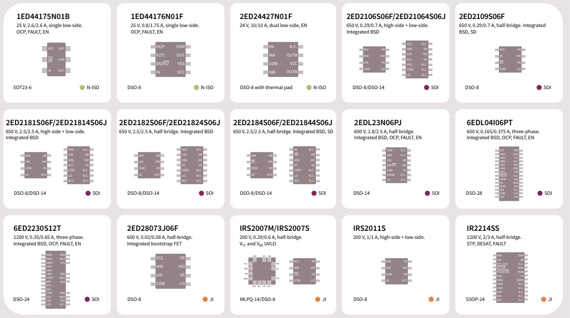
Gate driver IC brochures and sample boxes

Gate Driver Selection Guide
www.infineon.com/gdbrochure

Power and Sensing Selection Guide
http://www.infineon.com/powerandsensing-selectionguide

Industrial Galvanically Isolated Gate Driver
www.infineon.com/gdiso
工业级隔离型门极驱动芯片
www.infineon.com/gdiso-cn





1ED44175N01B
25 V, 2.6/2.6 A, single low-side. OCP, FAULT, EN
SOT23-6 ● N-ISO

1ED44176N01F
25 V, 0.8/1.75 A, single low-side. OCP, FAULT, EN
DSO-8 ● N-ISO

2ED24427N01F
24 V, 10/10 A, dual low-side, EN
DSO-8 with thermal pad ● N-ISO

2ED2106S06F/2ED21064S06J
650 V, 0.29/0.7 A, high-side + low-side. Integrated BSD
DSO-8/DSO-14 ● SOI

2ED2109S06F
650 V, 0.29/0.7 A, half-bridge. Integrated BSD, SD
DSO-8 ● SOI

2ED2181S06F/2ED21814S06J
650 V, 2.5/2.5 A, high-side + low-side. Integrated BSD
DSO-8/DSO-14 ● SOI

2ED2182S06F/2ED21824S06J
650 V, 2.5/2.5 A, half-bridge. Integrated BSD
DSO-8/DSO-14 ● SOI

2ED2184S06F/2ED21844S06J
650 V, 2.5/2.5 A, half-bridge. Integrated BSD, SD
DSO-8/DSO-14 ● SOI

2EDL23N06PJ
600 V, 1.8/2.5 A, half-bridge. Integrated BSD, OCP, FAULT, EN
DSO-14 ● SOI

6EDL04I06PT
600 V, 0.165/0.375 A, three-phase. Integrated BSD, OCP, FAULT, EN
DSO-28 ● SOI

6ED2230S12T
1200 V, 0.35/0.65 A, three-phase. Integrated BSD, OCP, FAULT, EN
DSO-24 ● SOI

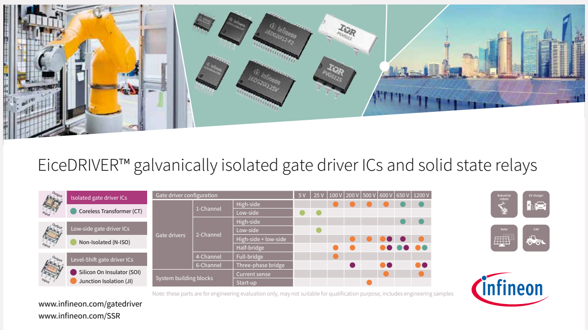
2ED28073J06F
600 V, 0.02/0.08 A, half-bridge. Integrated bootstrap FET
DSO-8 ● JI

IRS2007M/IRS2007S
200 V, 0.29/0.6 A, half-bridge. V_{CC} and V_{BS} UVLO
MLPQ-14/DSO-8 ● JI

IRS2011S
200 V, 1/1 A, high-side + low-side.
DSO-8 ● JI

IR2214SS
1200 V, 2/3 A, half-bridge. STP, DESAT, FAULT
SSOP-24 ● JI

EiceDRIVER™ Level shift and low side gate driver sample box (available @ ISAR):
Type: KIT_GD_LS_SAMPLE; OPN: KITGDLSSAMPLETOBO1



1ED3122MU12H
1200 V, 6/6 A, 100 ns, 8 V UVLO, single high-side. Miller clamp, SC-clamping, UL 1577, VDE 0884-11 (pending)
DSO-8 300 mil ● CT

1ED3123MU12H
1200 V, 9/9 A, 100 ns, 8 V UVLO, single high-side. SEP-OUT, SC-clamping, UL 1577, VDE 0884-11 (pending)
DSO-8 300 mil ● CT

1ED3124MU12H
1200 V, 9/9 A, 100 ns, 10.5 V UVLO, single high-side. SEP-OUT, SC-clamping, UL 1577, VDE 0884-11 (pending)
DSO-8 300 mil ● CT

1ED3131MU12H
1200 V, 3/3 A, 10.5 V UVLO, single high-side. SEP-OUT, SC-clamping, input filter, UL 1577, VDE 0884-11 (pending)
DSO-8 300 mil ● CT

1ED3491MU12M
1200 V, 9/9 A, 10.5 V UVLO, single high-side. Adjustable DESAT, adjustable soft off, Miller clamp, UL 1577, VDE 0884-11 (pending)
DSO-16 300 mil ● CT

1ED3890MU12M
1200 V, 9/9 A, 10.5 V UVLO, single high-side. I²C configurability: adjustable DESAT, adjustable soft off, adjustable Miller clamp, UL 1577, VDE 0884-11 (pending)
DSO-16 300 mil ● CT

1ED020I12-F2
1200 V, 2/2 A, single high-side. DESAT, Miller clamp, SC-clamping
DSO-16 300 mil ● CT

2ED020I12-F2
1200 V, 2/2 A, single high-side. DESAT, Miller clamp, SC-clamping
DSO-36 300 mil ● CT

2ED020I12-FI
1200 V, 1.5/2.5 A, half-bridge. OPAMP, comparator
DSO-18 300 mil ● CT

1EDS20I12SV
1200 V, 2/2 A, single high-side. Slew rate control, DESAT, Miller clamp, UL 1577, VDE 0884-10
DSO-36 300 mil ● CT

1EDI30I12MF/1EDC30I12MH
1200 V, 5.9/6.2 A, single high-side. Miller clamp, SC-clamping, UL 1577
DSO-8/DSO-8 300 mil ● CT

1EDI60N12AF/1EDC60H12AH
1200 V, 10/9.4 A, 125 ns, single high-side. SC-clamping, SEP-OUT, UL 1577
DSO-8/DSO-8 300 mil ● CT

PVX6012
Solid state relay (photovoltaic relays), 400 V, 1 A, 1 form A, single pole, normally open, UL 508
DIP-14

PVI1050NS
Solid state relay (photovoltaic isolators), 5 V, 5 µA, 2 form A
SMT-8

PVG612S
Solid state relay (photovoltaic relays), 60 V, 1 A AC/ 2 A DC, 1 form A, single pole, UL 508
SMT-6

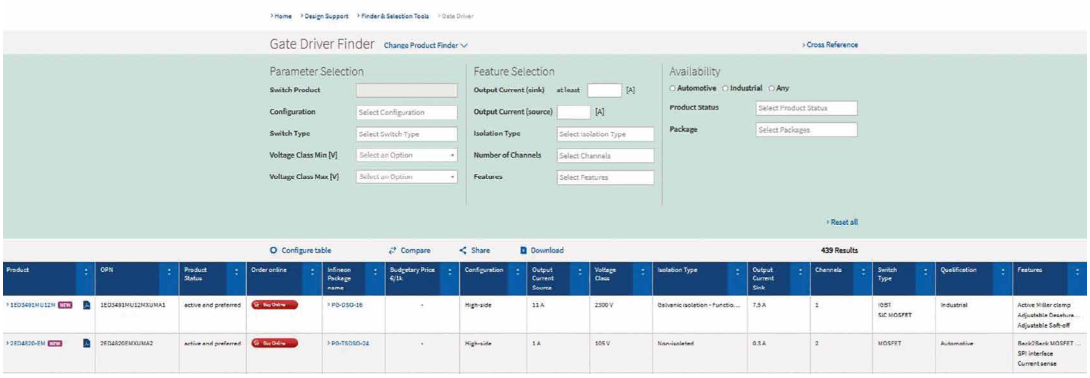
EiceDRIVER™ isolated driver and solid state relays sample box (available @ ISAR):
Type: KIT_GD_ISO_SAMPLE ; OPN: KITGDISOSAMPLETOBO1

1EDN/2EDN Sample Kit (available @ ISAR):
Type: KIT_1EDN_2EDN_SA_V1 ;
OPN: KIT1EDN2EDNSAV1TOBO1

Gate driver selection tool

To simplify the gate driver selection process, Infineon offers an online easy-to-use gate driver selection tool. By selecting a few key parameters, the tool quickly guides you in finding the right driver for your application.

Visit the gate driver selection tool by going to www.infineon.com/gdfinder



Parameter Selection

Switch Product
Configuration: Select Configuration
Switch Type: Select Switch Type
Voltage Class Min [V]: Select an Option
Voltage Class Max [V]: Select an Option

Feature Selection

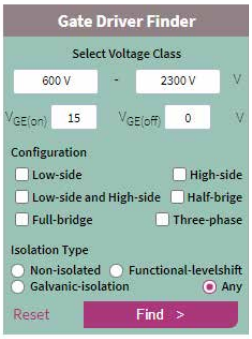
Output Current (sink) at least [A]
Output Current (source) [A]
Isolation Type: Select Isolation Type
Number of Channels: Select Channels
Features: Select Features

Availability

○ Automotive ○ Industrial ○ Any
Product Status: Select Product Status
Package: Select Packages

439 Results

Product	OPN	Product Status	Order online	Infineon Package name	Budgetary Price €/1k	Configuration	Output Current Source	Voltage Class	Isolation Type	Output Current Sink	Channels	Switch Type	Qualification	Features
1ED3491MU12M NEW	1ED3491MU12MXUMA1	active and preferred	Buy Online	PG-DSO-16	-	High-side	11 A	2300 V	Galvanic isolation - Functio...	7.5 A	1	IGBT SiC MOSFET	Industrial	Active Miller clamp Adjustable Desatura... Adjustable Soft-off
2ED4820-EM NEW	2ED4820EMXUMA2	active and preferred	Buy Online	PG-TSDSO-24	-	High-side	1 A	105 V	Non-isolated	0.3 A	2	MOSFET	Automotive	Back2Back MOSFET ... SPI interface Current sense



Gate Driver Finder

Select Voltage Class

600 V - 2300 V V

$V_{GE(on)}$ 15 $V_{GE(off)}$ 0 V

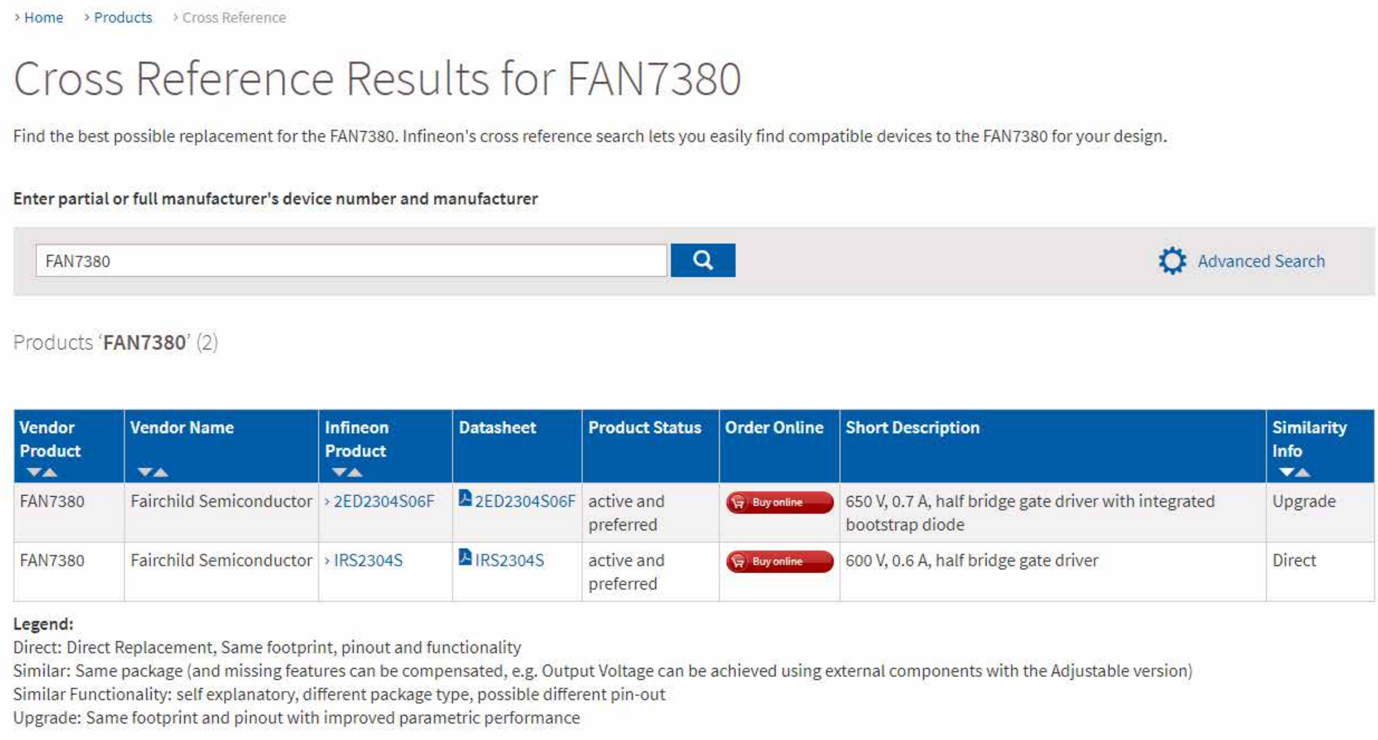
Configuration

☐ Low-side ☐ High-side
☐ Low-side and High-side ☐ Half-brige
☐ Full-bridge ☐ Three-phase

Isolation Type

○ Non-isolated ○ Functional-levelshift
○ Galvanic-isolation ● Any

www.infineon.com/gdfinder



Cross Reference Results for FAN7380

Find the best possible replacement for the FAN7380. Infineon's cross reference search lets you easily find compatible devices to the FAN7380 for your design.

Enter partial or full manufacturer's device number and manufacturer

FAN7380

Products 'FAN7380' (2)

Vendor Product	Vendor Name	Infineon Product	Datasheet	Product Status	Order Online	Short Description	Similarity Info
FAN7380	Fairchild Semiconductor	› 2ED2304S06F	2ED2304S06F	active and preferred	Buy online	650 V, 0.7 A, half bridge gate driver with integrated bootstrap diode	Upgrade
FAN7380	Fairchild Semiconductor	› IRS2304S	IRS2304S	active and preferred	Buy online	600 V, 0.6 A, half bridge gate driver	Direct

Legend:
Direct: Direct Replacement, Same footprint, pinout and functionality
Similar: Same package (and missing features can be compensated, e.g. Output Voltage can be achieved using external components with the Adjustable version)
Similar Functionality: self explanatory, different package type, possible different pin-out
Upgrade: Same footprint and pinout with improved parametric performance

www.infineon.com/crs

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Website Tools	
› Infineon gate drivers home page / 中文版	› www.infineon.com/gatedriver / www.infineon.com/gatedriver-cn
› Gate driver finder tool (Web)	› www.infineon.com/gdfinder
› Gate driver X-reference (Web)	› www.infineon.com/crs
› Simulation tools (Web)	› www.infineon.com/ifxdesigner / www.infineon.com/gdmodel
› Evaluation boards (Web)	› www.infineon.com/gdevalboards

Product promotion page	
› EiceDRIVER™ 200 V level-shift gate driver ICs	› www.infineon.com/200vhvic
› EiceDRIVER™ 500 - 700 V level-shift gate driver ICs	› www.infineon.com/700vhvic
› EiceDRIVER™ 1200 V level-shift gate driver ICs	› www.infineon.com/1200vhvic
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› EiceDRIVER™ Slew-Rate Control /中文版	› www.infineon.com/src / www.infineon.com/src-cn
› EiceDRIVER™ 1EDN gate driver ICs	› www.infineon.com/1EDN
› EiceDRIVER™ 2EDN gate driver ICs	› www.infineon.com/2EDN
› EiceDRIVER™ TDI gate driver ICs	› www.infineon.com/TDI
› EiceDRIVER™ 2EDL8 gate driver ICs	› www.infineon.com/2EDL8

Infineon gate driver naming convention

Naming convention for existing families of gate driver ICs

AU IR 21 10 D S

Automotive rating

Technology generation
IR = Gen2 high-voltage driver IC
IRS = Gen5 high-voltage driver IC

Voltage class
20 = 200 V
21 = 600 V
22 = 1200 V
23 = 600 V
26 = 600 V feature adder
44 = low-side driver

Driver type
3 = 3-phase driver
7 = current-sense IC
Other: half-bridge, high-side/low-side, etc.

Additional features
D = bootstrap
Blank = without bootstrap

Package type
S = SOIC
J = PLCC44
M = MLPQ
Q = MFQP
L = SOT-23
B/F = die part
Blank: PDIP

1ED I 60 I 12 A F

Number of channels
1 = 1-ch EiceDRIVER™
2 = 2-ch (half-bridge) EiceDRIVER™
6 = 6-ch (3-phase) EiceDRIVER™

Isolation technology
S = reinforced galvanic isolation
B = basic galvanic isolation
I = functional galvanic isolation
C = UL certified functional galvanic isolation
L = level-shifting (SOI)
N = non-isolated driver

Minimum drive strength
in hundreds of milliamps

Optimal switch Type
H = high-speed IGBT
I = IGBT
J= JFET
N = MOSFET

Voltage class
06 = 600 V
12 = 1200 V

Key features, e.g.
A = separate sink/source
B = Bootstrap diode
D = DESAT
M = active Miller clamp
S = Slew rate control
T = two-level turn-off

Package type, e.g.
F = DSO8-150 mil
H = DSO8-300 mil

Infineon gate driver naming convention

Naming convention for new and upcoming families of gate driver ICs

2ED 2304 S[x] 06 F

Number of channels
1 = 1-ch EiceDRIVER™
2 = 2-ch (half-bridge) EiceDRIVER™
6 = 6-ch (3-phase) EiceDRIVER™

Product number/voltage
Flexible

Technology indicator
M = Coreless transformer (inductive)
N = Non-isolated driver (low-side drivers)
J = Junction level shifting (non-SOI)
S = Infineon SOI

[x] Optional
C = Isolation-certified
S = Reinforced isolation
B = Basic Isolation
U/C = UL 1577-certified

Voltage class, e.g.
01 = <200 V
02 = 200 V
06 = 600 V/650 V
07 = 700 V
12 = 1200 V
16 = 1600 V
17 = 1700 V

Package type, e.g.
F = DSO8-150 mil
H = DSO8-300 mil
C = Bare die single chip
J = SO14-150 mil
M = SO16-300 mil
P = SO20-300 mil
R = TSSOP28-140 mil
T = SO28-300 mil
V = SO36-300 mil

2 ED N 7 52 4 F

Number of channels

ED = EiceDRIVER™

Isolation class
N = non-isolated
F = functional isolation
B = basic isolation
S = reinforced isolation
} "i" used to designate any type of galvanic isolation

UVLO threshold
6 = reserved
7 = ~ 4.2V
8 = ~ 8V
9 = reserved

Family ID
xx = 2 digits

Control Inputs
3 = inverted
4 = non-inverted
5 = mixed
6 = differential

Package
F = DSO 150 mil, 1.27 mm
H = DSO 300 mil, 1.27 mm
B = SOT-23
G = VDSON
R = TSSOP ("mini DSO-8")
K = LGA

2 ED 48 20 A - EM

Number of channels
1 = 1-ch
2 = 2-ch

ED = EiceDRIVER™

Max. automotive board net category
12 = 12 V
24 = 24 V
48 = 48 V

Product number
flexible

Optional
A: ISO26262 compliant

Package type / technology
EM = Exposed pad DSO – 150mil

Where to buy

Infineon distribution partners and sales offices:
www.infineon.com/WhereToBuy

Service hotline

Infineon offers its toll-free 0800/4001 service hotline as one central number, available 24/7 in English, Mandarin and German.

- Germany .... 0800 951 951 951 (German/English)
- China, mainland .... 4001 200 951 (Mandarin/English)
- India .... 000 800 4402 951 (English)
- USA .... 1-866 951 9519 (English/German)
- Other countries .... 00* 800 951 951 951 (English/German)
- Direct access .... +49 89 234-0 (interconnection fee, German/English)

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