

## Product brief

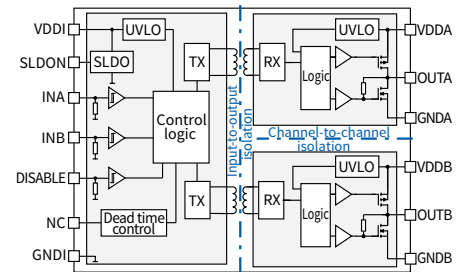
# EiceDRIVER™ 2EDF7275F and 2EDF7175F

Fast, robust, dual-channel, functional isolated MOSFET gate drivers with accurate and stable timing

### Overview

The EiceDRIVER™ 2EDF7275F is the perfect fit for robust and stable operation for primary side control of high- and low-side MOSFETs in noisy high-power switching environments. The strong 4 A/8 A source/sink dual-channel gate drivers provide a fast turn on/off when driving high- and medium-voltage MOSFETs such as CoolMOS™ or OptiMOS™. Both output channels are individually isolated and can be flexibly deployed as floating gate drivers with very high 150 V/ns CMTI (Common Mode Noise Immunity). The VDDi input supply supports a wide voltage range SLDO mode to save on-board LDOs. For slower switching or driving smaller MOSFETs, a 1 A/2 A peak current product variant, the EiceDRIVER™ 2EDF7175F, is available in the DSO-16 narrow body package with 4 mm creepage distance.

### Device overview



EiceDRIVER™ 2EDF7275F and 2EDF7175F block diagram

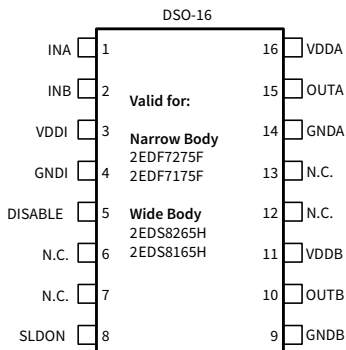
Product key features	Product benefits	System benefits
<b>Fast power switching with accurate timing</b> <ul style="list-style-type: none"> <li>Available with 4 A/8 A and 1 A/2 A source/sink currents</li> <li>Propagation delay typ. 37 ns with 3 ns channel-to-channel mismatch</li> <li>Max. delay variation ~14 ns</li> </ul>	<b>Power efficiency and high resolution PWM control</b> <ul style="list-style-type: none"> <li>Lower switching losses in half-bridges due to fast and accurate turn on/off</li> <li>Perfect match for a new digitally controlled high resolution PWM control</li> </ul>	<b>Enabling higher power stage efficiency and higher power density designs</b>
<b>Optimized for area and low cost system BOM</b> <ul style="list-style-type: none"> <li>Isolation and driver in one package</li> <li>Less power dissipation due to low on-resistance</li> <li>Output stages with 5 A reverse current capability</li> </ul>	<b>Cooler package at smaller form factor</b> <ul style="list-style-type: none"> <li>Replaces classic bulky PT pulse transformers or costly high speed data couplers and discrete drivers</li> <li>Cooler gate driver package</li> <li>Eliminates need for two costly protection diodes</li> </ul>	<b>Improving long term competitive cost position, integration and mass manufacturability</b>
<b>Robust against switching noise</b> <ul style="list-style-type: none"> <li>Floating drivers are able to handle large inductive voltage over- and undershoots</li> <li>Very high common mode transient immunity CMTI &gt; 150 V/ns</li> <li>Undervoltage lockout function for switch protection</li> </ul>	<b>Protection and safe operation</b> <ul style="list-style-type: none"> <li>Protection against shoot-through (EOS)</li> <li>Supports decoupling and limits the di/dt switching and ringing noise</li> <li>Reliable CT coreless transformer PWM signal chain</li> </ul>	<b>Improved end-product lifetime by improved safe operation of power switches</b>
<b>Output-to-output channel isolation</b> <ul style="list-style-type: none"> <li>Functional level galvanic isolation</li> </ul>	<b>Flexible assignment of any driver channel</b> <ul style="list-style-type: none"> <li>HS+LS, HS+HS, LS+LS or 2x I<sub>max</sub> on 1xHS</li> </ul>	<b>Lower EMI by ground isolation, driver proximity to MOSFETs or the use of 4-pin Kelvin source MOSFETs</b>
<b>Input-to-output channel isolation</b> <ul style="list-style-type: none"> <li>Functional galvanic isolation</li> </ul>	<b>Floating gate drive and regulatory safety</b> <ul style="list-style-type: none"> <li>Functional isolation for primary or secondary side control</li> </ul>	<b>Meeting requirements to build isolated AC-DC, DC-DC half-bridge topologies</b>



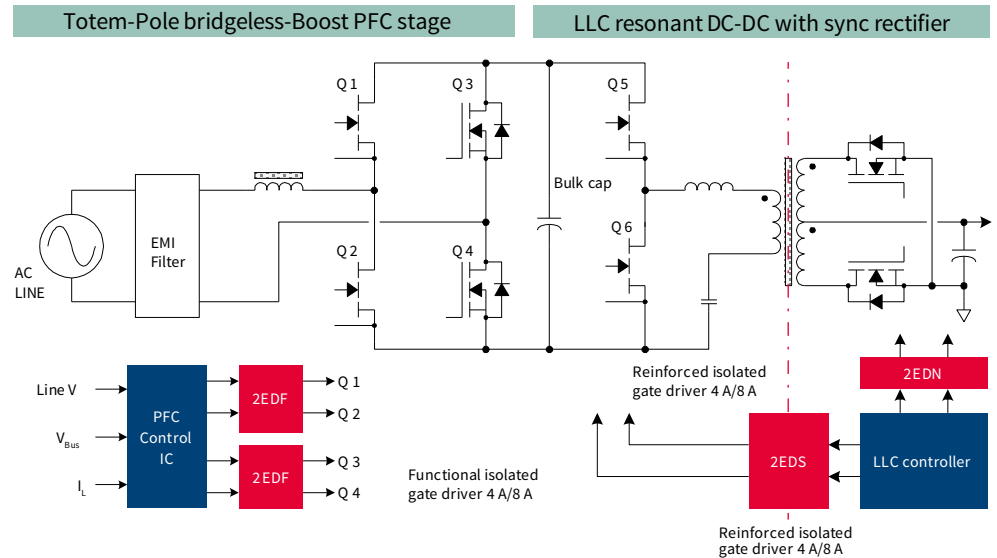
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## Device pin assignments



## Application diagram example



The 2EDF7275F input-to-outputs are functional isolated, which is used today in larger power PCB designs or when seeking to isolate the switching noise in the power loop from the microcontroller. With its >150 V/ns common mode noise immunity, the 2EDF is one of the most robust solutions available today for high-side, low-side half-bridge topologies with simple CMOS level PWM inputs. The high-side driver supply in the 2EDF can be implemented with a low cost bootstrap method.

The consistent performance and timing accuracy over temperature and production spread of the 2EDF family of isolated gate drivers makes them easy to use within a power stage or across multi-phase, multi-level designs and enables further efficiency gains in high performance power conversion applications.

## Product portfolio

Part number	Orderable part number (OPN)	Package	PWM Input type	Driver source/ Sink current	Gate driver UVLO	Input to output isolation				Dead-time control
						Isolation class	Rating	Surge testing	Safety certification	
2EDF7275F	2EDF7275FXUMA1	NB-DSO16 10x6mm	Dual mode (input A, input B)	4 A/8 A	4 V	Functional	1.5 kV <sub>peak</sub>	n.a.	n.a.	no
2EDF7175F	2EDF7175FXUMA1	NB-DSO16 10x6mm	Dual mode (input A, input B)	1 A/2 A	4 V	Functional	1.5 kV <sub>peak</sub>	n.a.	n.a.	no

For further device information, configurations and application notes, visit the 2EDi EiceDRIVER™ family under [www.infineon.com/2EDi](http://www.infineon.com/2EDi)

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