



## Product brief

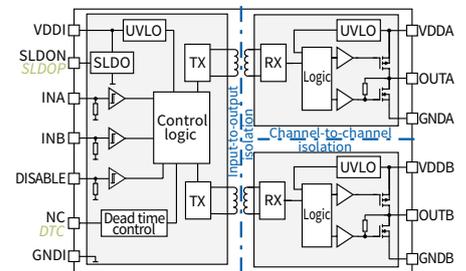
# EiceDRIVER™ 2EDF7275K and 2EDF7235K

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

### Overview

The EiceDRIVER™ 2EDF72x5K is a functional isolated gate driver designed for high-performance DC-DC medium-voltage, half- and full-bridge topologies. The 4 A/8 A source/sink currents, combined with a low 37 ns propagation delay and the highly accurate timing over both temperature and production, are the perfect fit for high-frequency PWM control with tightest possible dead time windows, delivering highest conversion efficiency. The very low impedance of the gate driver output stages keeps the driver package and PCB cooler, which is a key benefit in high density power brick converters. The device's 4 V UVLO and dead time control ensure that OptiMOS™ half-bridge MOSFETs always run within their safe operating area. A CMTI of 150 V/ns guarantees high robustness even for fast switching transients (di/dt) in the power loop. The EiceDRIVER™ 2EDF7235K includes programmable DTC (dead time control) and an inverted SLDOP mode. All devices can operate in low cost bootstrapped high side supply and come in a cost competitive, small form factor LGA13 5 mm x 5 mm package.

### Device overview



EiceDRIVER™ 2EDF7275K, 2EDF7235K block diagram

Product key features	Product benefits	System benefits
<b>Fast 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>Efficiency gain and lower losses</b> <ul style="list-style-type: none"> <li>Lower switching losses in half-bridges due to fast and accurate switching</li> <li>Perfectly suited for new digital, fast, high resolution PWM control</li> <li>Tight control of dead times within and across power stages for best efficiency</li> </ul>	<b>Enabling higher system efficiency and higher power density designs</b>
<b>Optimized for area and system BOM</b> <ul style="list-style-type: none"> <li>Isolation and driver in one package</li> <li>Low power dissipation due to low on-resistance</li> <li>Output stages with 5A reverse current capability</li> </ul>	<b>Improved thermal behavior at smaller form factor</b> <ul style="list-style-type: none"> <li>LGA package with 5 mm x 5 mm versus two packages of high-speed data couplers and discrete drivers</li> <li>Eliminates two costly protection diodes</li> </ul>	
<b>Robust design 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>Ideal for use in high power designs with fast switching transients</li> <li>Shoot-through protection</li> <li>Reliable PWM signal communication even in noisy environments</li> </ul>	<b>Extending end-product lifetime by improving safe operation of power switches and reliable PWM communication and PWM signal chain in abnormal conditions</b>
<b>Output- to-output channel isolation</b> <ul style="list-style-type: none"> <li>Functional level galvanic isolation</li> </ul>	<b>Flexible configurations</b> <ul style="list-style-type: none"> <li>HS+LS, HS+HS, LS+LS</li> </ul>	<ul style="list-style-type: none"> <li>Stackable isolated DC-DC power stages</li> <li>Lower EMI by ground and signal isolation, and driver proximity to MOSFETs</li> </ul>
<b>Input-to-output channel isolation</b> <ul style="list-style-type: none"> <li>Functional galvanic isolation</li> </ul>	<b>Regulatory safety</b> <ul style="list-style-type: none"> <li>Functional isolation for primary or secondary side control.</li> </ul>	<b>Meeting all isolation requirements of standard DC-DC equipment</b>



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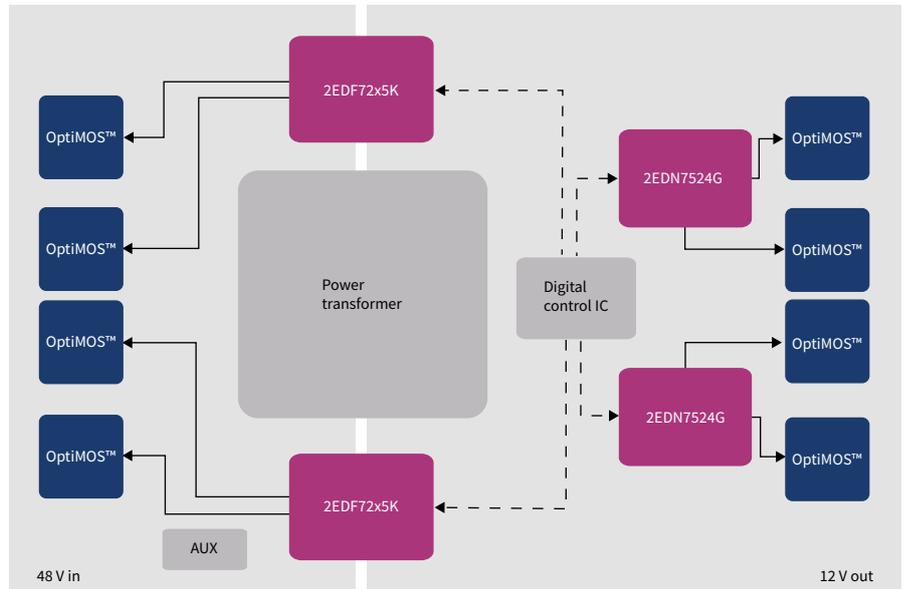
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## Pin configuration

GNDI	1	13	VDDA
INA	2	12	OUTA
INB	3	11	GND A
SLDON	4		2EDF7275K
DISABLE	5	10	VDD B
N.C.	6	9	OUT B
VDDI	7	8	GND B

GNDI	1	13	VDDA
INA	2	12	OUTA
INB	3	11	GND A
SLDOP	4		2EDF7235K
DISABLE	5	10	VDD B
DTC	6	9	OUT B
VDDI	7	8	GND B

## Example application DC-DC brick converter



New high-speed, high-resolution digital controllers are able to simultaneously provide isolated PWM signals to the primary and secondary side gate drivers, e.g. the 2EDN7545G dual-channel non-isolated driver. To control the primary-side switches over the isolation barrier, the isolated 2EDF72x5K gate drivers are the perfect choice. If, however, reinforced isolation is required, the EiceDRIVER™ 2EDi family member 2EDS827x5H can be used with the same high performance features and timing accuracy as the 2EDF-drivers. The unique combination of the 2EDi cross-family shared key features, regardless of isolation class, provides new power partitioning options and enables the system designer to work across any isolation barriers/power stages with consistent stable timing, best-in-class gate driver performance and reduced system bill of materials.

## 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	
2EDF7275K	2EDF7275KXUMA1	LGA13 5x5 mm	Dual Mode (Input A, Input B)	4 A/8 A	8 V	Functional	$V_{iso} = 1.5 kV_{DC}$	n.a.	n.a.	no
2EDF7235K	2EDF7235KXUMA1									yes

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

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