Product brief

EiceDRIVER™ 2EDi product 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.

EiceDRIVER™ 2EDi generation II: what is new?

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

Applications

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

Product key 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 Robust Level shifting
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**

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Product portfolio

Product	Orderable number (OPN) part	Package			Galvanic isolation		Output stages			Control Inputs	
		Type	Pins	Ch-Ch mm	Certification	CMTI	Source/sink currents [3]	UVLO on nom.	UVLO start-up	STP / DTC option	DIS / EN
2EDS7165H	2EDS7165HXUMA1	300mil DSO	16 pin	2.5	V_{ISO} 5.7 kV_{rms} UL 1577	150 V/ns	1 A/2 A	4 V	5 µs	-	DIS
2EDS8165H	2EDS8165HXUMA2	300mil DSO	16 pin	2.5	V_{ISO} 5.7 kV_{rms} UL 1577 Reinforced EN 62368-1	150 V/ns	1 A/2 A	8 V	5 µs	-	DIS
2EDS8265H	2EDS8265HXUMA2	300mil DSO	16 pin	2.5		150 V/ns	5 A/9 A	8 V	5 µs	-	DIS
2EDS9265H	2EDS9265HXUMA1	300mil DSO	16 pin	2.5		150 V/ns	5 A/9 A	13 V	5 µs	-	DIS
2EDR8259H	2EDR8259HXUMA1[4]	300mil DSO	16 pin	2.5	V_{IOTM} = 8 kV_{pk} VDE 0884-11 V_{ISO} 5.7 kV_{rms} UL 1577 Reinforced EN 62368-1	150 V/ns	5 A/9 A	8 V	2.5 µs	yes	DIS
2EDR7259X	2EDR7259XXUMA1[4]	300mil DSO	14 pin	3.3		150 V/ns	5 A/9 A	4 V	2.5 µs	yes	DIS
2EDR8259X	2EDR8259XXUMA1[4]	300mil DSO	14 pin	3.3		150 V/ns	5 A/9 A	8 V	2.5 µs	yes	DIS
2EDR9259X	2EDR9259XXUMA1[4]	300mil DSO	14 pin	3.3		150 V/ns	5 A/9 A	15 V	2.5 µs	yes	DIS
2EDR8258X	2EDR8258XXUMA[4]	300mil DSO	14 pin	3.3	V_{IOTM} = 8 kV_{pk} VDE 0884-11 [1] V_{ISO} 5.7 kV_{rms} UL 1577 [1] Reinforced EN 62368-1 [1]	150 V/ns	5 A/9 A	8 V	2.5 µs	yes	EN
2EDR6258X	2EDR6258XXUMA1[4]	300mil DSO	14 pin	3.3		150 V/ns	5 A/9 A	12 V	2.5 µs	yes	EN
2EDR9258X	2EDR9258XXUMA1[4]	300mil DSO	14 pin	3.3		150 V/ns	5 A/9 A	15 V	2.5 µs	yes	EN
2EDF7175F	2EDF7175FXUMA2	150mil DSO	16 pin	2.5	1.5 kV_{DC} functional	150 V/ns	1 A/2 A	4 V	5 µs	-	DIS
2EDF7275F	2EDF7275FXUMA2	150mil DSO	16 pin	2.5	1.5 kV_{DC} functional	150 V/ns	5 A/9 A	4 V	5 µs	-	DIS
2EDF8275F	2EDF8275FXUMA1	150mil DSO	16 pin	2.5	1.5 kV_{DC} functional	150 V/ns	5 A/9 A	8 V	5 µs	-	DIS
2EDF9275F	2EDF9275FXUMA1	150mil DSO	16 pin	2.5	1.5 kV_{DC} functional	150 V/ns	5 A/9 A	13 V	5 µs	-	DIS
2EDB8259F	2EDB8259FXUMA1[4]	150mil DSO	16 pin	3.3	V_{ISO} = 3 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	8 V	2.5 µs	yes	DIS
2EDB7259Y	2EDB7259YXUMA1[4]	150mil DSO	14 pin	3.3	V_{ISO} = 3 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	4 V	2.5 µs	yes	DIS
2EDB8259Y	2EDB8259YXUMA1[4]	150mil DSO	14 pin	3.3	V_{ISO} = 3 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	8 V	2.5 µs	yes	DIS
2EDB9259Y	2EDB9259YXUMA1[4]	150mil DSO	14 pin	3.3	V_{ISO} = 3 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	15 V	2.5 µs	yes	DIS
2EDF7275K	2EDF7275KXUMA2	5x5 LGA	13 pin	1	1.5 kV_{DC} functional	150 V/ns	5 A/9 A	4 V	5 µs	-	DIS
2EDB7259K	2EDB7259KXUMA1[4]	5x5 LGA	13 pin	1	V_{ISO} = 2.5 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	4 V	2.5 µs	yes	DIS
2EDB8259K	2EDB8259KXUMA1[4]	5x5 LGA	13 pin	1	V_{ISO} = 2.5 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	8 V	2.5 µs	yes	DIS
2EDB7259E	2EDB7259EXUMA1[4]	4x4 LGA	13 pin	0.75	V_{ISO} = 2.25 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	4 V	2.5 µs	yes	DIS
2EDB8259E	2EDB8259EXUMA1[4]	4x4 LGA	13 pin	0.75	V_{ISO} = 2.25 kV_{rms} UL 1577 [2]	150 V/ns	5 A/9 A	8 V	2.5 µs	yes	DIS

[1]Planned [2]Pending [3]typ.@ 12 V to 18 V VDD [4]2EDi gen. II coming soon

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