



**ED-C**  
Compact

**ED-E**  
Enhanced

**+SiC**

# Industrial galvanic isolated gate driver ICs

Selection guide 2018

[www.infineon.com/gatedriver](http://www.infineon.com/gatedriver)  
[www.infineon.com/1EDcompact](http://www.infineon.com/1EDcompact)



ED-C  
Compact

EiceDRIVER™ 1ED Compact gate driver IC family  
1200 V galvanically isolated compact gate driver ICs

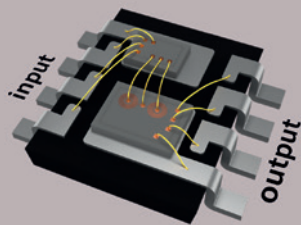
Infiniteon's new EiceDRIVER™ 1EDC Compact 300 mil family is recognized under UL 1577 with an insulation test voltage of  $V_{iso} = 2500$  V(rms) for 1 min. The functional isolated EiceDRIVER™ 1EDI Compact 150 mil and 300 mil families are also available. The EiceDRIVER™ 1ED Compact family is the perfect driver for super-junction MOSFETs such as CoolMOS™, IGBTs, Silicon Carbide (SiC) MOSFET such as CoolSiC™, and IGBT modules.

- Product Features
- Available in DSO-8 300 mil wide body package with 8 mm creepage distance and DSO-8 150 mil
  - Up to 10 A typical peak rail-to-rail output
  - Suitable for operation at high ambient temperature
  - Separate source and sink outputs or active Miller clamp
  - Short circuit clamping and active shutdown
  - $\geq 100$  kV/ $\mu$ s CMTI

1EDI Compact 150 mil	1EDI60I12AF	1EDI40I12AF	1EDI20I12AF	1EDI05I12AF	1EDI60N12AF	1EDI20N12AF	1EDI30I12MF	1EDI20I12MF	1EDI10I12MF
Package									
1EDI Compact 300 mil	1EDI60I12AH	1EDI40I12AH	1EDI20I12AH	1EDI05I12AH	1EDI60H12AH	1EDI20H12AH	1EDI30I12MH	1EDI20I12MH	1EDI10I12MH
1EDC Compact 300 mil (UL 1577)	1EDC60I12AH	1EDC40I12AH	1EDC20I12AH	1EDC05I12AH	1EDC60H12AH	1EDC20H12AH	1EDC30I12MH	1EDC20I12MH	1EDC10I12MH
Package									
Typical Output Current [A]	10 / -9.4	7.5 / -6.8	4 / -3.5	1.3 / -0.9	10 / -9.4	4 / -3.5	5.9 / -6.2	4.4 / -4.1	2.2 / -2.3
Output Configuration	Separate Sink/Source Outputs	Separate Sink/Source Outputs	Separate Sink/Source Outputs	Separate Sink/Source Outputs	Separate Sink/Source Outputs	Separate Sink/Source Outputs	Active Miller Clamp	Active Miller Clamp	Active Miller Clamp
Typical Propagation Delay [ns]	300	300	300	300	125	125	300	300	300
UVLO	Input [V]	2.85 / 2.75	2.85 / 2.75	2.85 / 2.75	2.85 / 2.75	2.85 / 2.75	2.85 / 2.75	2.85 / 2.75	2.85 / 2.75
	Output [V]	12 / 11.1	12 / 11.1	12 / 11.1	12 / 11.1	12 / 11.1 (H) 9.1 / 8.5 (N)	12 / 11.1 (H) 9.1 / 8.5 (N)	11.9 / 11	11.9 / 11



Coreless Transformer (CT) Technology



Galvanically isolated EiceDRIVER™ ICs based on our coreless transformer (CT) technology which uses semiconductor manufacturing processes to integrate an on-chip transformer consisting of metal spirals and silicon oxide insulation. The on-chip transformers are used for transmitting switching information between input chip and output chip which are galvanically isolated.

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[www.infineon.com/1EDcompact](http://www.infineon.com/1EDcompact)

Gate Driver Support Tools

- Infineon Gate Drivers Home Page
- Simulation Tools
- Gate Driver X-Reference
- Gate Driver Selection Guide Brochure
- Gate Driver Finder Tool

ED-E  
Enhanced

EiceDRIVER™ Enhanced gate driver IC family  
1200 V galvanically isolated enhanced gate driver ICs

The EiceDRIVER™ 1ED Enhanced gate driver ICs are galvanic isolated single channel IGBT and SiC MOSFET drivers in DSO-16 package that provide output current capabilities of typically 2 A. The precision DESAT function is an excellent solution for SiC MOSFET short-circuit protection. All logic pins are 5 V CMOS compatible. 2ED020I12-F2 is the dual-channel version of 1ED020I12-F2 in DSO-36 package. 2ED020I12-FI is a high voltage, high speed power MOSFET and IGBT driver with interlocking high and low side referenced outputs.

- Product Features
- Available in wide body package with 8 mm creepage distance
  - Suitable for operation at high ambient temperature
  - Active Miller clamp
  - Short circuit clamping and active shutdown
  - $\geq 100$  kV/ $\mu$ s CMTI
  - Precision DESAT protection

EiceDRIVER™ Enhanced	1ED020I12-F2	2ED020I12-F2	1ED020I12-FT	1ED020I12-B2	1ED020I12-BT	2ED020I12-FI
Configuration	Single	Dual	Single	Single	Single	Half Bridge
Package (all 300 mil)	DSO-16 	DSO-36 	DSO-16 	DSO-16 	DSO-16 	DSO-18 
Galvanic Isolation	Functional	Functional	Functional	Basic (VDE 0884-10)	Basic (VDE 0884-10)	Functional on High Side
Protection Function	DESAT, UVLO	DESAT, UVLO	DESAT, UVLO, Two-Level Turn Off	DESAT, UVLO	DESAT, UVLO, Two-Level Turn Off	UVLO, OPAMP, Comparator
UVLO	Input [V]	4.1 / 3.8	4.1 / 3.8	4.1 / 3.8	4.1 / 3.8	12 / 11
	Output [V]	12 / 11	12 / 11	12 / 11	12 / 11	12 / 11
DESAT Charge Current [ $\mu$ A]	500	500	500	500	500	-
Bipolar Output Supply	✓	✓	✓	✓	✓	-
Active Miller Clamp	✓	✓	✓	✓	✓	-
Inverting and Non-inverting Inputs	✓	✓	✓	✓	✓	-
Combinable Enable/Shutdown and Fault Feedback Signals	✓	✓	✓	✓	✓	-
TLSET	-	-	✓	-	✓	-
Typical Propagation Delay [ns]	170	170	170 + TLTOff	170	170 + TLTOff	85
Isolation Definitions						
Functional Isolation	Isolation between conductive parts which is necessary only for the proper functioning of the equipment.					
Basic Isolation (VDE 0884-10)	Isolation applied to live parts to provide basic protection against electric shock.					

+SiC

Driving SiC MOSFETs

Every isolated EiceDRIVER™ IC is well-suited to drive SiC MOSFETs such as the ultra-fast switching 1200-V CoolSiC™ power MOSFETs. The drivers incorporate most important key features and parameters for SiC driving such as tight propagation delay matching, precise input filters, wide output-side supply range, negative gate voltage capability or Miller clamping, and extended CMTI capability.

[www.infineon.com/SiC-gd](http://www.infineon.com/SiC-gd)  
[www.infineon.com/SiC-MOS](http://www.infineon.com/SiC-MOS)



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## Service hotline

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- › 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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