

Product Brief

1EDI EiceDRIVER™ Compact

1200V galvanically isolated single-channel driver IC family

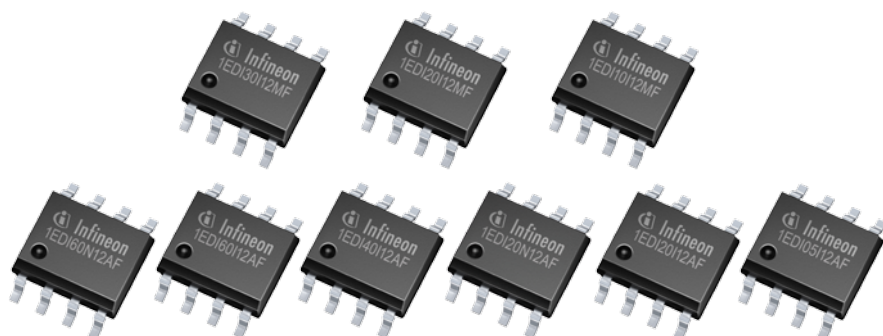
ED-C
Compact

Our new 1EDI EiceDRIVER™ Compact family complements our extensive range of high-voltage driver ICs for a market that demands easy-to-use drivers with a small footprint for quick design-in cycles. The driver family is based on Infineon's coreless transformer technology, enabling a benchmark setting minimum common mode transient immunity (CMTI) of 100 kV/μs.

The drivers provide output currents of up to 6A on separate output pins for applications up to 1200V. They are ideal for the use in industrial drives, charge stations for electric vehicles, power supplies for servers and telecommunications systems, and welding equipment.

Six versions are available with separate source and sink outputs for MOSFET and IGBT switches. The MOSFET drivers are optimized for designs using CoolMOS™ technology. Due to lower inductive losses, these drivers enable an additional gain in efficiency of 0.5 percent with the latest generation of CoolMOS™ C7. Three IGBT-only versions are designed to limit the gate voltage using an active Miller clamp.

The 1EDI60N12AF and 1EDI20N12AF for MOSFETs supply 2 and 6A of output current on separate output pins for gate charging and discharging purposes. A propagation delay mismatch trimmed down to less than 10 ns and an input filter time of only 40 ns are ideal for high switching frequency applications of up to 4 MHz such as switched mode power supplies. The 1EDI05I12AF, 1EDI20I12AF, 1EDI40I12AF, and 1EDI60I12AF for IGBTs provide output currents between 0.5 and 6 A. The 1EDI30I12MF, 1EDI20I12MF, and 1EDI10I12MF with Miller clamp deliver output currents of 1, 2, and 3A, respectively. All variants are offered in a compact, halogen-free 150 mil DSO-8 package.



Key features

- > Single channel isolated driver
- > Input to output isolation voltage up to 1200V
- > For high voltage power MOSFETs and IGBTs
- > Up to 6A minimum peak rail-to-rail output
- > Separate source and sink outputs or active Miller clamp

Applications

MOSFET:

- > Switched mode power supplies
- > PFC stages
- > Servers
- > Solar systems
- > Buck/boost converters

IGBT:

- > General-purpose inverters (GPI)
- > Drives
- > Welding equipment
- > IH industrial and cooking appliances
- > Solar inverters
- > Uninterruptible power supplies

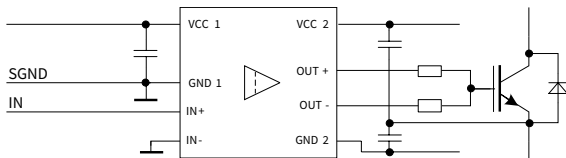


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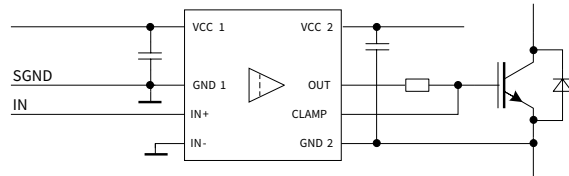
1200V galvanically isolated single-channel driver IC family



Variant with separate source/sink output
Circuit diagram for IGBT



Variant with output and active miller clamp
Circuit diagram for IGBT, unipolar (e.g. with TRENCHSTOP™ 5)



Detailed product features:

Sales Code	1EDI60N12AF	1EDI20N12AF	1EDI60I12AF	1EDI40I12AF	1EDI20I12AF	1EDI05I12AF	1EDI30I12MF	1EDI20I12MF	1EDI10I12MF
Package	DSO-8 (150mil)		DSO-8 (150mil)				DSO-8 (150mil)		
Applications	SMPS, PFC, telecom, server, solar, buck/boost converter, PC power		General-purpose inverter (GPI), drives (general purpose & servo), welding, IH industrial and cooking, solar inverter, UPS				General purpose inverter (GPI), industrial drives, welding, IH industrial, solar inverter, UPS		
Voltage class	up to 1200V		up to 1200V				up to 1200V		
Output current	6A / -6A	2A / -2A	6A / -6A	4A / -4A	2A / -2A	0.5A / -0.5A	3A / -3A	2A / -2A	1A / -1A
Separate source/sink output	✓	✓	✓	✓	✓	✓	-	-	-
Active Miller clamp	-	-	-	-	-	-	✓	✓	✓
UVLO	MOSFET		IGBT				IGBT		
Propagation delay	120 ns	120 ns	300ns				300ns		
Max. switching frequency	4 MHz ¹⁾	4 MHz ¹⁾	1 MHz ¹⁾				1 MHz ¹⁾		
Recommendation	CoolMOS™ C7 ²⁾ , CP		All 650V and 1200V IGBT modules				All 650V and 1200V IGBT modules		

Common highlights:

- > Common Mode Transient Immunity (CMTI): 100kV/μs (best in class)
- > Wide input operation range (3 .. 17V)
- > Benefit: no voltage/signal adaptation between μC and driver necessary

¹⁾ do not exceed max. power dissipation

²⁾ 1EDI60N12AF enables an extra 0.5% efficiency gain by reducing inductance losses

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