

Customer connector presentation
2EDL6014AC-G2D

June 2026

Restricted

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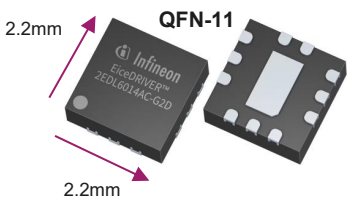
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2EDL6014AC-G2D at-a-glance: Dual channel floating output driver for Intermediate Bus Converters (IBC)

Key features



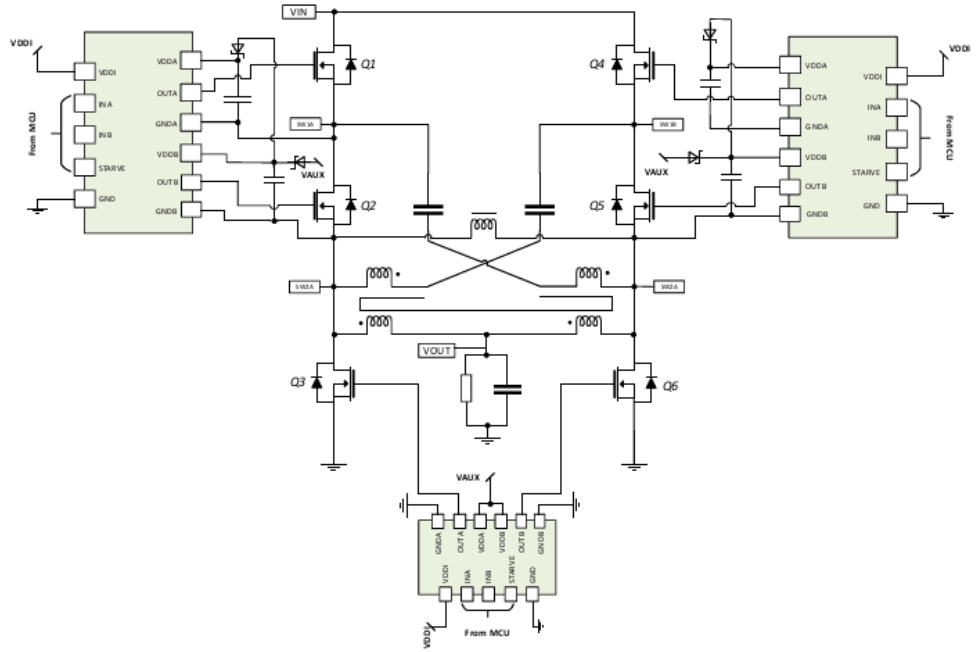
- Level-shifted **dual channel floating output driver**
- Wide gate driver supply voltage **4 V to 16 V** (VDDA/VDDB)
- 3.3 V and 5 V compliant INx and STARVE pins
- **4 A** source / **6 A** sink output current capability
- **120 V** absolute maximum voltage on VDDA and VDDB
- -5 A output pin reverse current capability
- -12 V absolute maximum negative voltage on GNDA/GNDB
- **20 ns** fast propagation delay and **1 ns** typical delay matching
- **10 ns** minimum pulse width
- Output pull-up current **Starving** mode(1/8 pull-up strength) for **soft startup**
- **Self input supply** as option
- Offered in QFN-11 (**2.2x2.2**) with exposed thermal pad
- Rth-jc(bottom)=**4.1** K/W

Value Proposition

- **Driver optimized for IBC**: in 2.2x2.2 packages allows high density designs
- **Safe system startup** thanks to the current starving capability
- **LL FET** compatible thanks to wide supply range
- High efficiency thanks to **reduced propagation delay**
- **Low thermal impedance** thanks to exposed pad
- **Platform Driver** – can drive **dual-high side, dual-low side and half-bridge**

Typical Application

- **Intermediate Bus Converter**
- **Non-isolated multi-level converters**
- **Switched-capacitor converters topologies(HSC, ZSC...)**



Resources

- Datasheet
- **Evaluation Board: EVAL_HB_2EDL6014AC**
- Simulation Model



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How 2EDL6014AC-G2D Overcomes Key IBC Module System Design Challeges



23x17x8mm
HSC 8:1 1kW

High Power density

2EDL6014AC-G2D
2.2x2.2 QFN package enables high power density design

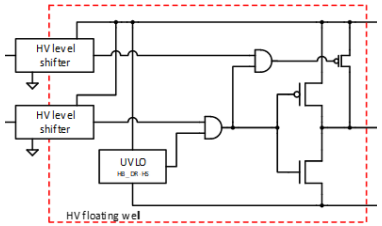


2EDL6014AC-G2D

IBC System Design Challenges

Safe startup(w/o e-fuse)

2EDL6014AC-G2D unique output starving feature + small minimum ton pulse simplifies startup design



Excellent thermal performance

2EDL6014AC-G2D's 1mm2 thermal e-pad offers excellent thermal performance

High reliability (*TCoB>1000 C)

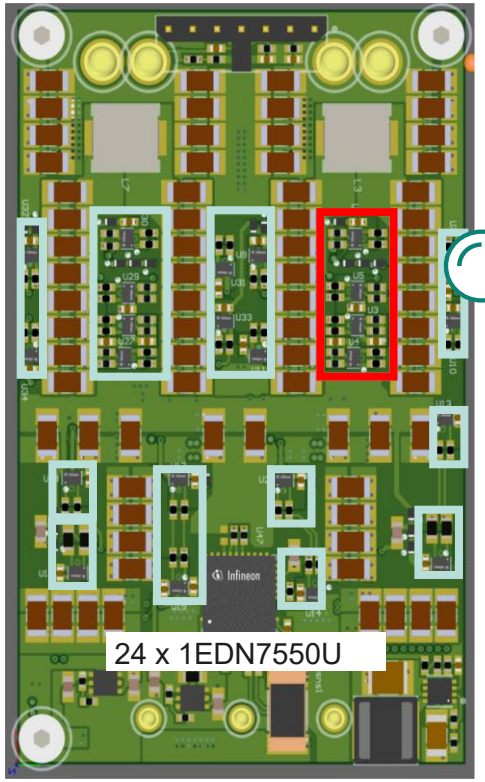
2EDL6014AC-G2D ensures robust solder joint between QFN package and PCB

*TCoB: thermal cycle on board

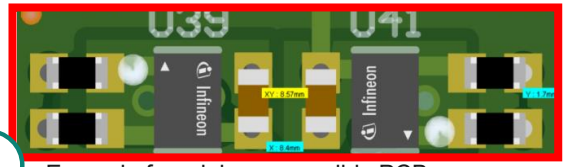
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Boosting Power Density
2EDL6014AC-G2D Shrinks HSC PCB Footprint by ~ 40%

2kW DR-HSC ¼ brick design



Today

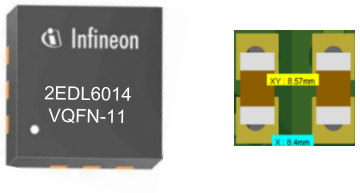


Example for minimum possible PCB area

- 2 x Differential Gate Driver
- 4 resistors
- 2 caps

Footprint
~ 14 mm²

Future



- 1 x Dual Channel Gate Drivers
- 0 resistors
- 2 caps

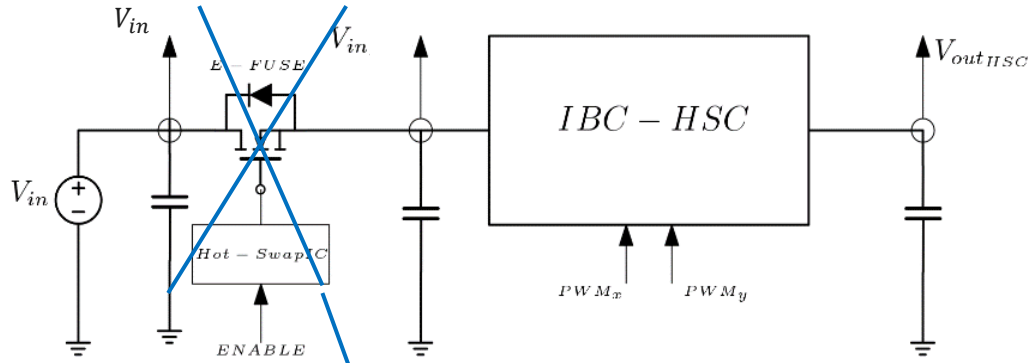
Footprint
~ 8 mm²

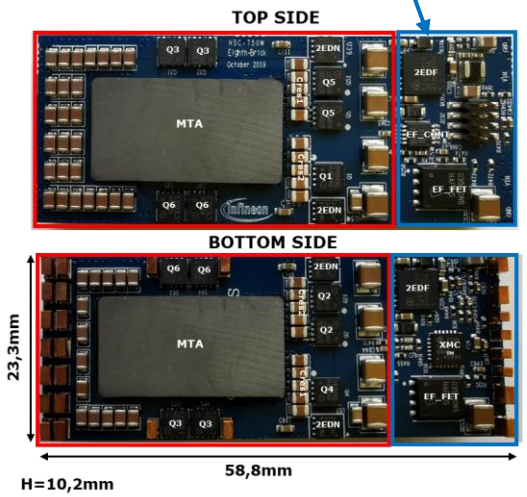
~ 40% footprint reduction



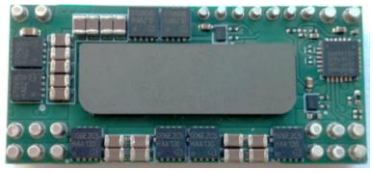
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Why is a startup a Challenge in IBC design?

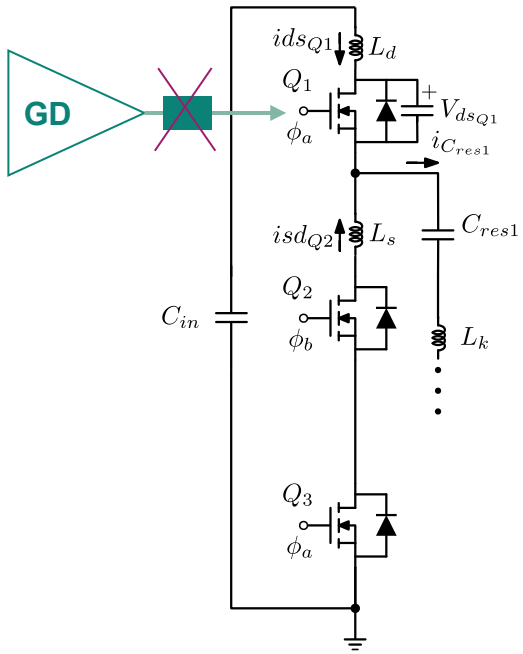


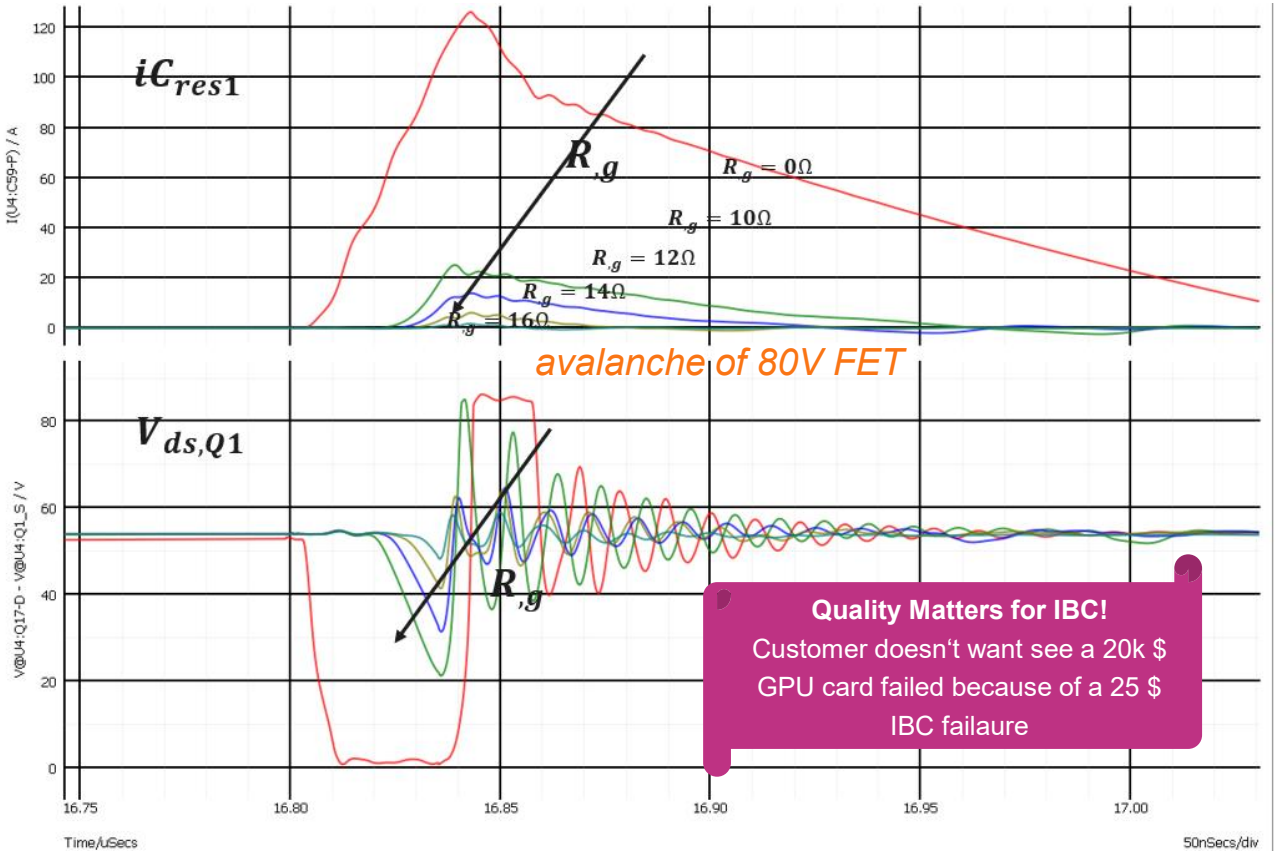


18 layers PCB 3oz



23x17mm





Quality Matters for IBC!
Customer doesn‘t want see a 20k $ GPU card failed because of a 25 $ IBC failaure

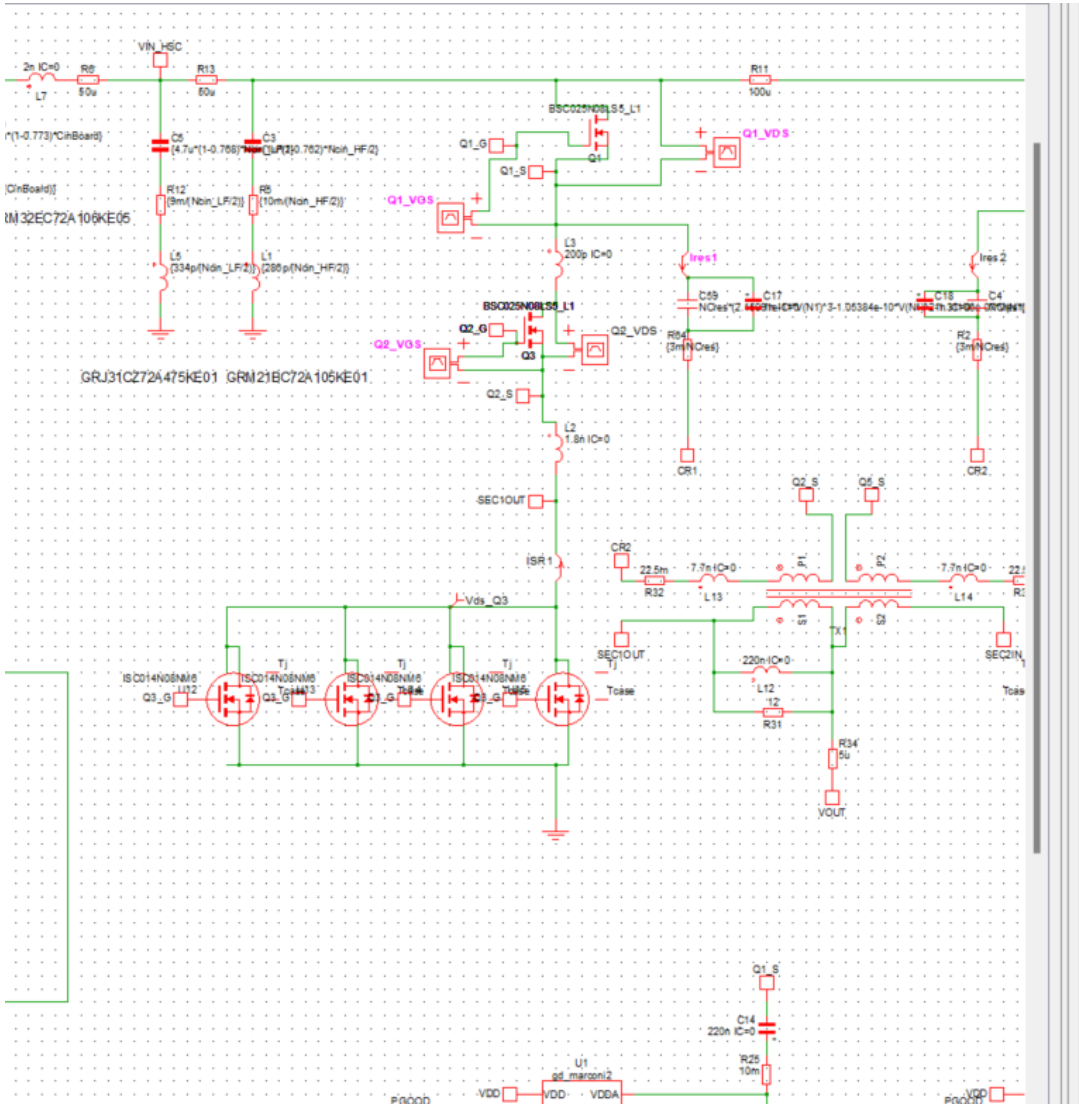
$$T_{on} = 33ns\ for\ all\ cases$$

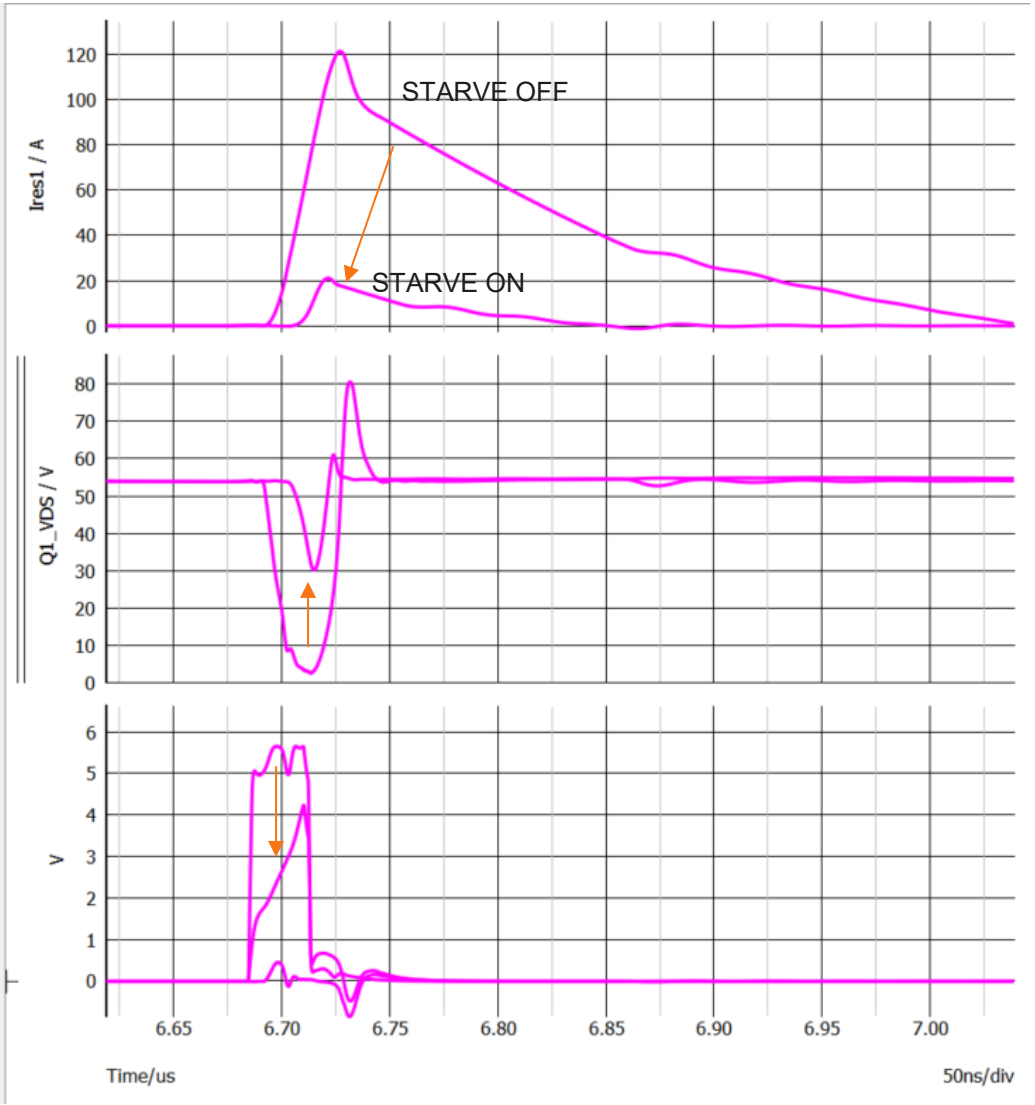
Waveforms at different Rg value from 0 to 16 Ohm from 54 V
With spice driver model and gate loop (Ls=5.5nH)

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2EDL6014AC-G2D‘s solution- HSC Startup with STARVE ON

to prevent the Avalanche of 80V FET(reduced the life time of IBC)





Waveforms at Rg =0, Vs from 54V, Ls=200pH, ton_min: 30ns, STARVE(1:5): OFF→ON

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How 2EDL6014AC-G2D brings value to the AI IBC applications?

Value Proposition 1	Value Proposition 2	Value Proposition 3	Value Proposition 4
 IBC	 IBC	 IBC	 IBC
High Power Density	Higher Reliability	Excellent thermal performance	Less System Parts Count – Safe startup (w/o e-fuse)
2EDL6014AC-G2D 2.2x2.2 QFN package enables high power density design	2EDL6014AC-G2D ensures robust solder joint between QFN package and PCB because of TCoB>1000C	2EDL6014AC-G2D's 1mm2 thermal exposed-pad offers excellent thermal performance	2EDL6014AC-G2D unique output starving feature + small minimum ton pulse simplifies startup design

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How 2EDL6014AC-G2D addresses the challenges in AI IBC applications?

Key requirements in application

1. High Power Density
2. Higher Reliability
3. Excellent thermal performance
4. Reduce System Parts Count

Typical challenges

With increasing demand for power in AI applications, the main challenge in IBC power supplies is how to manage the higher power with a constrained infrastructure. This includes how to manage:

1.) Thermal management

2.) Efficiency

3.) Smaller form factor system solution

4.) Robustness

Infineon solution features and benefits

1. **High Power Density** – 2EDL6014AC-G2D is in a compact 2.2x2.2 mm QFN package. The high output current capability of 4A source and 6A sink is ideal for high power applications
2. **Higher Reliability** – ensures a robust solder joint between the QFN package and PCB due to TCoB>1000C
3. **Excellent thermal performance -** 2EDL6014AC-G2D has an exposed thermal pad which results in a R_{thJC_bottom} = 4.1°C/W
4. **Reduce System Parts Count** – 2EDL6014AC-G2D has an STA feature which reduces startup inrush current, thus eliminating the need to use an external circuit

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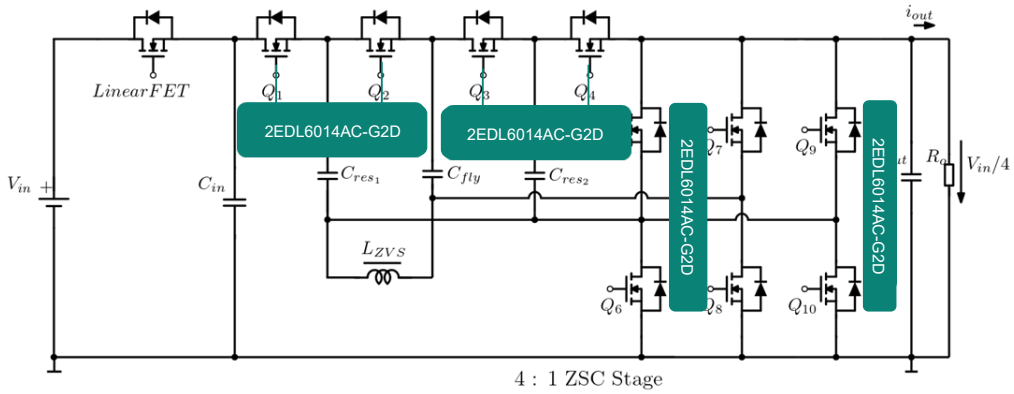
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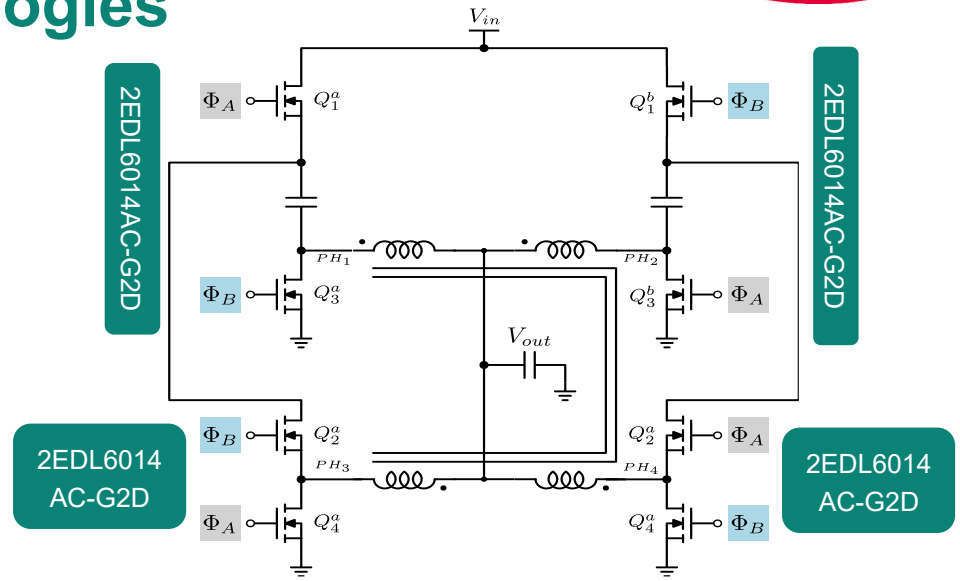
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A Platform Driver (drive both high side and low side FETs)
Best fit in switch-cap and multi-level based topologies

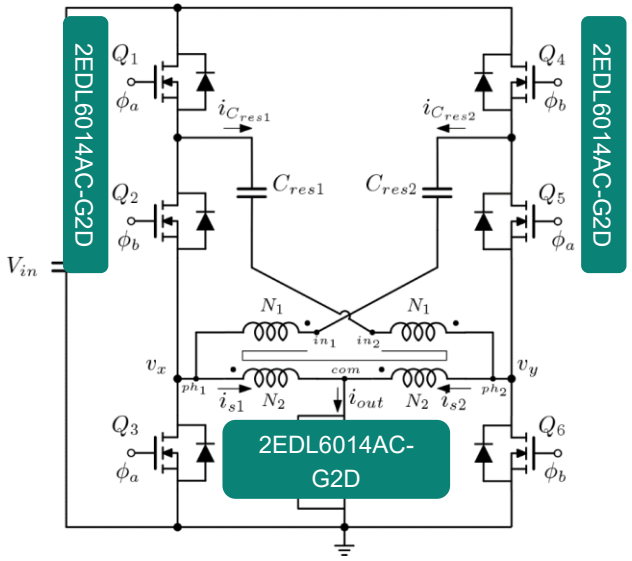


– ZSC: 4x 2EDL6014AC-G2D



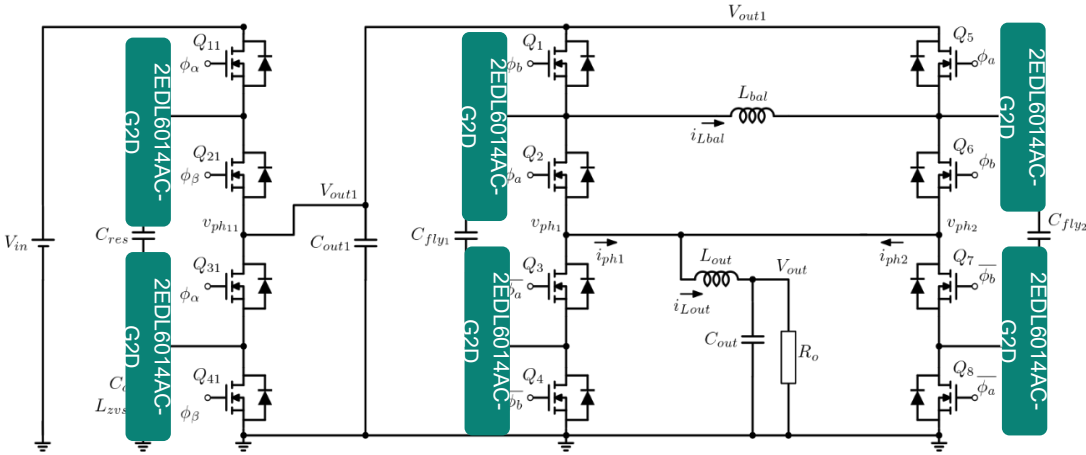


– SHSC: 4x 2EDL6014AC-G2D



– HSC: 3x 2EDL6014AC-G2D

XDPP1100/
XDPP1140/48



– DR-HSC: 6x 2EDL6014AC-G2D

➔ All innovative solutions are requiring the same driver (not only IFX topologies) ➔

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What is Infineon's 2EDL6014AC-G2D positioning?

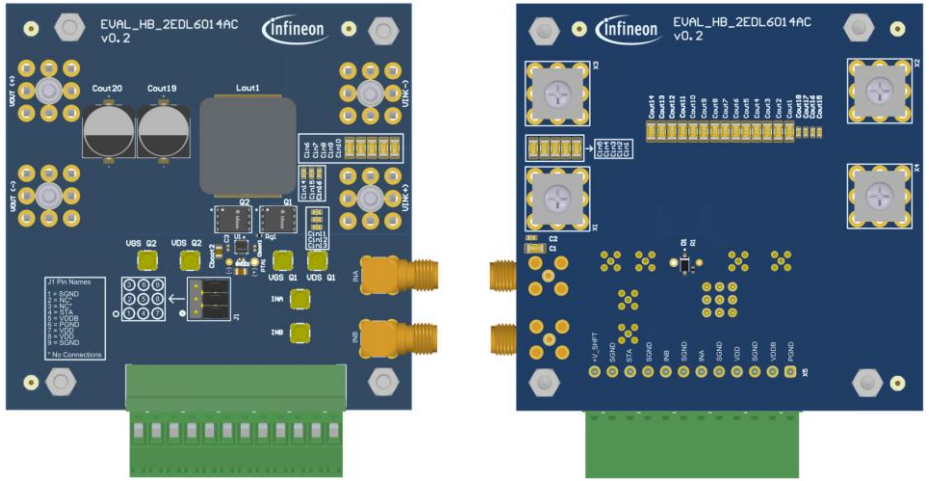
	MV gate driver offering				
PN	2EDL8x2x	2EDL6014AC-G2D	2EDL900G3	2EDL901G3	2EDL501xAA-U2D
Driver type	High and Low	Dual floating	Dual floating	Dual floating	Half-bridge
Package (mm x mm)	3x3 & 4x4	2.2 x 2.2	3 x 3	3 x 3	2 x 2
# of Pins	10 & 8	11	16	16	12
Creepage HV/LV (mm)	0.27 & 0.36	0.5	0.4	0.4	0.2
VDD range (V)	8 … 17	4 … 16	4.5 … 15(TBV)	4.5 … 15(TBV)	4.5 … 5.5
IPU/IPD (A)	3-4/5-6	4/6	4/6 (Si)	1.5(TBV)/6 (GaN)	1.5/4, 1.5/1.5, 4/4
Tprop (ns)	45	20	15	15	20
Min Input Pulse (ns)	40 (max)	10	15 (TBV)	15 (TBV)	10
Negative SW (V)	-12 (<100ns)	-12 (<100ns)	-5 (DC)	-5 (DC)	-5 (DC)
Split Output	N	N	N	N	Y
Starve Function(adj. pull-up strength)	N	Y	N	N	N
Bootstrap switch/diode	Y	N	Y	Y	Y
5V Gate Clamp	N	N	N	Y	N
3-state PWM w/ DTC	N	N	Y	Y	N
Current sense amplifier	N	N	Y	Y	N
Miller Clamp	N	N	N	N	Y
Switch Technology	Si	Si	Si	GaN	GaN
ES / SOP	Available / Released	Available / June 2026	Available / Released	Available / July 2026	Available / September 2026

** 2EDL6014AC-G2D and 2EDL900G3 can drive Infineon G5 GaN w/ ext. clamp*

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Evaluation board for 2EDL6014AC

EVAL_HB_2EDL6014AC



Technical & order details

Parameter	Value
Topology	Buck
Input voltage	36-60V
Output voltage	Duty Dependent

Learn more	
Sales name	EVAL_HB_2EDL6014AC
SAP mat number	SP006314237
Infineon order code	EVALHB2EDL6014ACTOBO1
IFX Components	2EDL6014AC-G2D ISC016N08NM8SC ISC031N08NM6SC
Focus Application	IBC

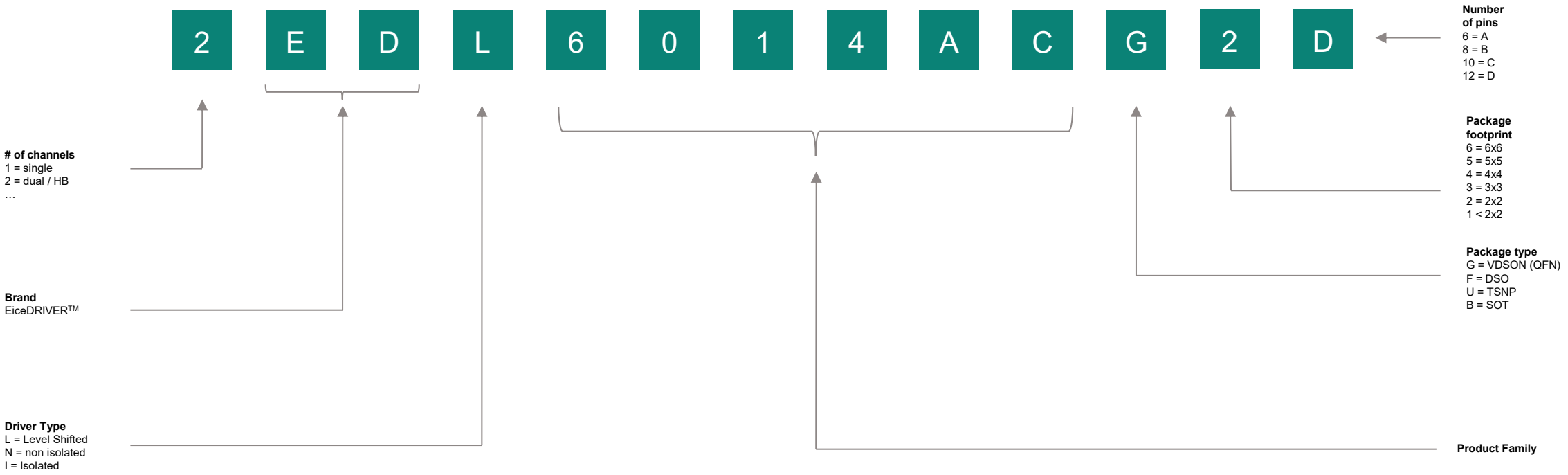
Features

1. Open loop buck converter topology
2. Easy settings for either dual floating or typical half bridge configuration
2. Easy settings for evaluation for STA functionality
3. Probing test points measurement ready

Benefits

1. Easy configuration and evaluation of functional features of 2EDL6014AC-G2D
2. Compact design for easy evaluation
3. Simplifies driver testing setup
4. Supports fast prototyping

Product naming nomenclature



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Ordering information

OPN Ordering part number	SP number Ordering Code	MDQ/MQQ/MOQ*	Registerable	Package
2EDL6014ACG2DXTMA1	SP006138793	5000/5000/5000	Yes	PG-WQFN-11-1

Note:
The information presented is valid from 01 June 2026. Please check the latest Distribution Price Book for current prices and minimum quantities

* MDQ: Minimum Design Quantity
MQQ: Minimum Quote Quantity
MOQ: Minimum Order Quantity

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Guiding questions

Summary of key arguments

2EDL6014AC-G2D helps to have a system solution with:

- ✓ Higher power density systems
- ✓ Higher reliability
- ✓ Compact solution

Questions to ask to the customer

- What are the pain points encountered in the design?
- What improvements do you suggest to have for 2EDL6014AC-G2D?
- Is there any new requirements needed for the gate driver for the upcoming designs projects?

FAQs

FAQ1 - Are there any new gate driver requirements for upcoming projects?

FAQ2 - What DCDC converter topology do you plan to use for your application?

FAQ3 - What are some of your key reliability requirements?

FAQ1 - What is the simple and cost effective gate driver solution for IBC Module AI?

- 2EDL6014AC-G2D

FAQ2 - What are key features of 2EDL6014AC-G2D?

- STA function that programs driving current capability of OUTA which helps reduce inrush current during start ups
- Dual floating gate driving functionality
- Wide gate driver supply voltage 4V to 16V (VDDA/VDDB)
- Very small package in QFN-11 (2.2x2.2) with exposed thermal pad
- Rth-jc(bottom)=4.1 K/W

FAQ3 - What are target applications optimized for 2EDL6014AC-G2D?

- Intermediate Bus Converter
- Non-isolated multi-level converters
- Switched-capacitor converters topologies(HSC, ZSC...)

FAQ4 - What are value propositions 2EDL6014AC-G2D offers in system design?

- Allows high density designs due small package size
- Safe system startup thanks to the current starving capability
- LL and NL FET compatible thanks to wide supply range
- High efficiency thanks to reduced propagation delay
- Low thermal impedance thanks to exposed pad
- Flexible in system design requirements – can drive dual-high side, dual-low side and half-bridge

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