

EiceDRIVER™ Safe with Slew Rate Control (SRC)

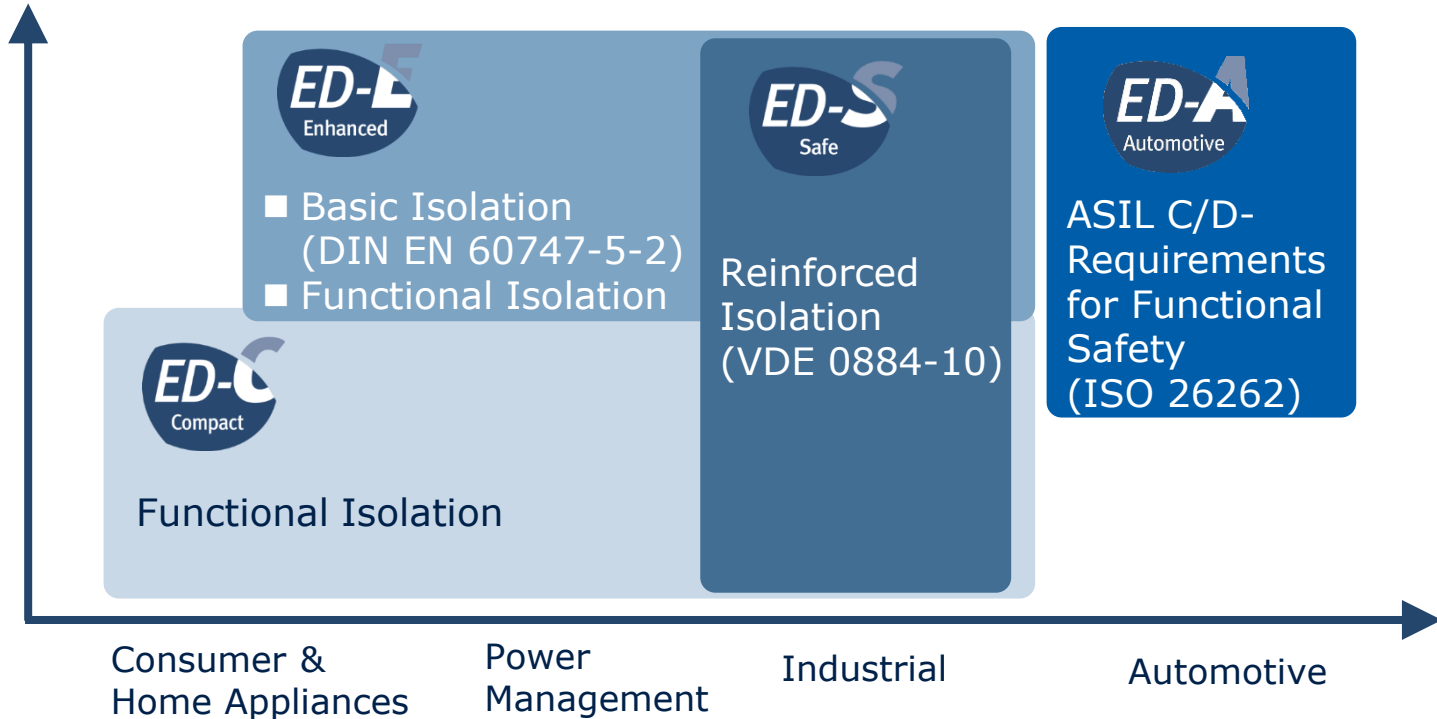
PCIM 2014, Nuremberg



EiceDRIVER™ ICs and Boards have suitable Solutions for all Applications



Features per
Channel



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1EDS-SRC



Reinforced
Isolation
(VDE 0884-10)



EiceDRIVER™ 1EDS-SRC covers Applications with reinforced isolation and high end features

Industrial

1EDS-SRC solves the Dilemma of general Purpose Inverter for high Efficiency Requirements



Requirement

Old Motors require dv/dt or sine filter to avoid insulation fail

Long cables lead to reflections, hence to overvoltage at IGBT

I need high switching performance of IGBT, but low EMI, too

**Learn more about
your Solution:**

**EiceDRIVER™
1EDS-SRC**



Effect

Any kind of filter reduces efficiency and needs space!

Special gate drive circuits can do, but need a lot of space

1EDS-SRC brings innovative Features into industrial Drive Applications for simpler Design and high Efficiency



Features

- Reinforced isolation acc. to VDE 0884-10
- Turn-on Slew Rate Control (SRC) with 11 Steps
- Selective short circuit protection for 3-Level Inverter (NPC1 Topology)
- Soft Turn-Off and Two-Level Turn-Off

Unique

Unique

Benefits

- Simplifies safety concept of application
- Slew Rate Control can achieve turn-on loss reduction of 30% or more; smaller or even no dv/dt filter
- Simplifies short circuit management in 3-Level Inverter (NPC1 Topology)
- Reduction of inductive overshoot for larger design margin

Slew Rate Control SRC can achieve turn-on Loss Reduction of 30% or more

Real-time adjustable gate current

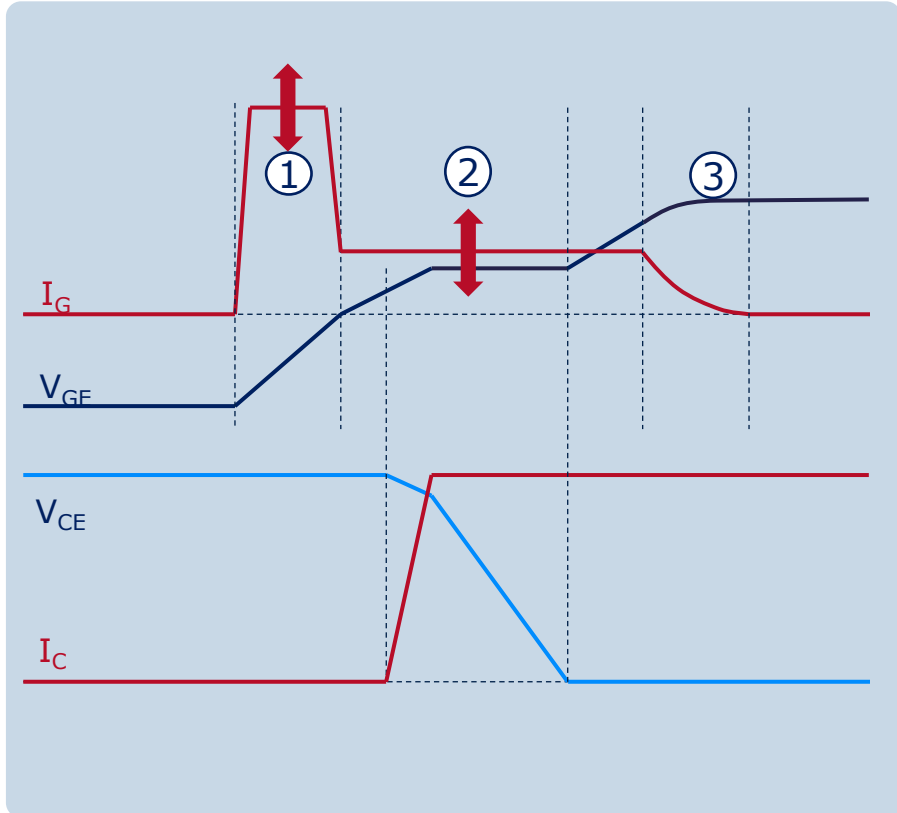
① Adjustable preboost Current Source

- Gate Voltage reaches $V_{ge} < V_{ge(th)}$
- IGBT is still in Off-state

② Real-time adjustable Turn-on Current Source

- SPEED Input controls the Turn-on Process of the IGBT (from Input Side, 11 Steps)

③ Ohmic Behavior, End of Current Regulation



Soft Turn-Off or Two-Level Turn-Off: Both Options fulfill the Need for higher Voltage Margin in the short Circuit Failure Case



① Normal Turn Off

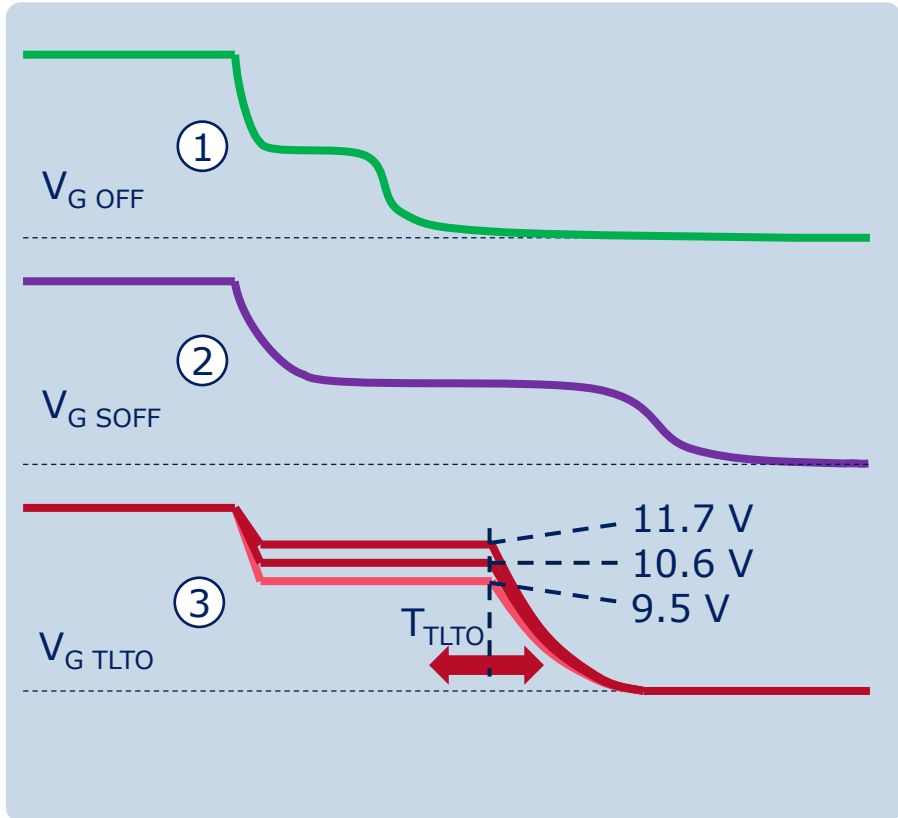
- Integrated MOS Output with 2A
- Higher output current with external transistors

② Soft Off

- MOS Output Stage of 1A

③ Two Level Turn Off

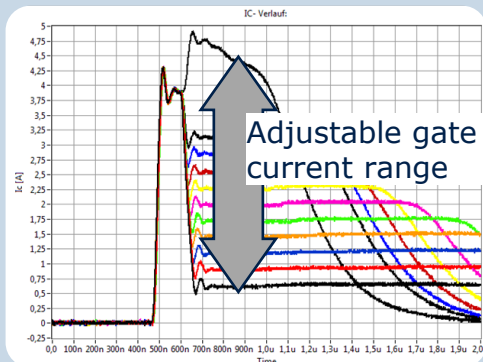
- Three selectable TLTO Voltage Levels
- TLTO Time adjustable via capacitor
- Constant ON-Time by TLTO Compensation



The Slew Rate Control enables for high Efficiency

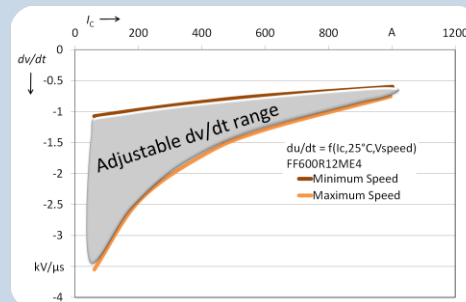
Feature

- Real-Time adjustable and precise Gate Current Control



Effect

- The Turn-On dv/dt is controllable in a very large range
- Smaller or no dv/dt filter



Benefit

- Get low EMI at low load and get high efficiency at full load
- Higher efficiency due to smaller or no dv/dt filter
- Turn-on Speed to be adjusted in end production or at customer installation



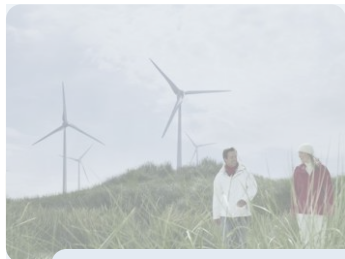
EiceDRIVER™ 1EDS-SRC stands for reinforced Isolation acc. VDE0884-10 and full Protection of IGBT in Halfbridge and 3-Level Topologies.



The Slew Rate Control Function of 1EDS-SRC is a leading edge Technology to keep dv/dt below $5kV/\mu s$ while reducing turn-on Losses for high Efficiency.



EiceDRIVER™ IC and Boards offer a suitable Solution for your Application.



EiceDRIVER™ 1EDS-SRC stands for reinforced Isolation acc. VDE0884-10 and full Protection of IGBT in Halfbridge and 3-Level Topologies.

EiceDRIVER™ 1EDS-SRC is the Gate Driver IC for next Generation of high Efficiency and low EMI electric Drive Systems.



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ENERGY EFFICIENCY MOBILITY SECURITY

Innovative semiconductor solutions for energy efficiency, mobility and security.

