

## Product Brief

# The Slew-Rate Control EiceDRIVER™ with reinforced isolation

ED-S  
Safe

1200V single-channel isolated driver family with dynamic Slew-Rate Control

The new SRC EiceDRIVER™ family, which includes 1EDS20I12SV, 1EDU20I12SV, and 1EDI20I12SV, serves the latest generation of highly efficient low-EMI electric drive systems with lower EMI and improved efficiency. Based on the Infineon coreless transformer technology, it is the first high-voltage isolated gate driver on the market with dynamic Slew-Rate Control (SRC) which allows on-the-fly  $dV/dt$  control of electric drives through precise gate current control, providing the best trade-off between minimum power dissipation and minimum EMI depending on operating conditions. To turn on the IGBT, the driver works as an adjustable current source in conjunction with an external PMOS transistors and a sense resistor. To turn off the IGBT, the driver uses a 2A MOSFET output stage.

Several important and advanced protection functions are integrated. The driver includes desaturation protection for IGBTs and overcurrent protection for sense IGBTs via the fault-status output pin. Two ready-state output pins indicate proper driver power supply level and normal driver operation. Two-level turn-off with adjustable timing and voltage protects against excessive overvoltage in case of the IGBT operating at overcurrent or a short circuit.

The 1EDx20I12SV family is tailored for industrial drive applications such as those using 1200V power modules for currents up to 900 A like the EconoDUAL™ 3. The “S” version 1EDS20I12SV provides reinforced galvanic isolation certification according to VDE 0884-10 and UL 1577. The “U” version 1EDU20I12SV is UL 1577 certified with an isolation rating of  $V_{iso} = 5000 \text{ V(rms)}$  for 1 minute. The “I” version 1EDI20I12SV provides functional isolation.

The driver meets today's long-term stability requirements for industrial applications. It is offered in a DSO-36 package with a package width of 300 mil. It is RoHS compliant, green, and halogen-free.

### Key features

- > 1200V single-channel IGBT driver
- > Precise dynamic gate-current control
- > Unique: selective short circuit protection for 3-level inverters
- > Overcurrent protection for sense IGBTs and conventional IGBTs
- > DESAT, soft turn-off, and two-level turn-off
- > Drive power modules up to 900 A

### Applications

- > AC and brushless DC motor drives
- > High-voltage DC-DC converters
- > UPS systems
- > Servo drives

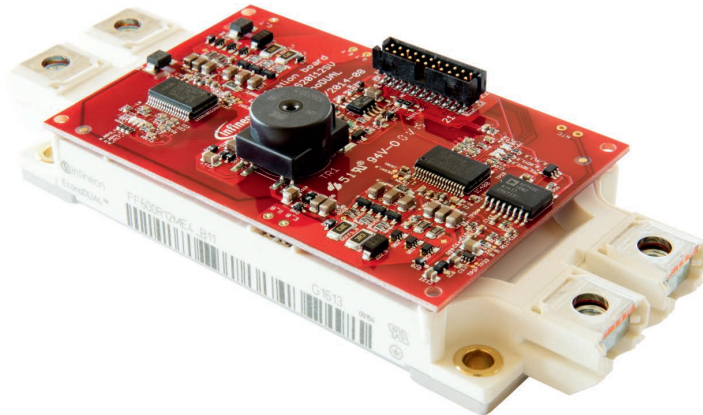


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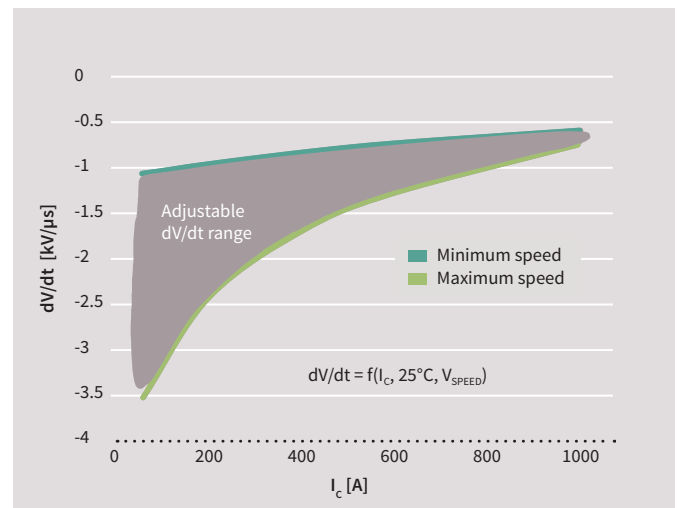
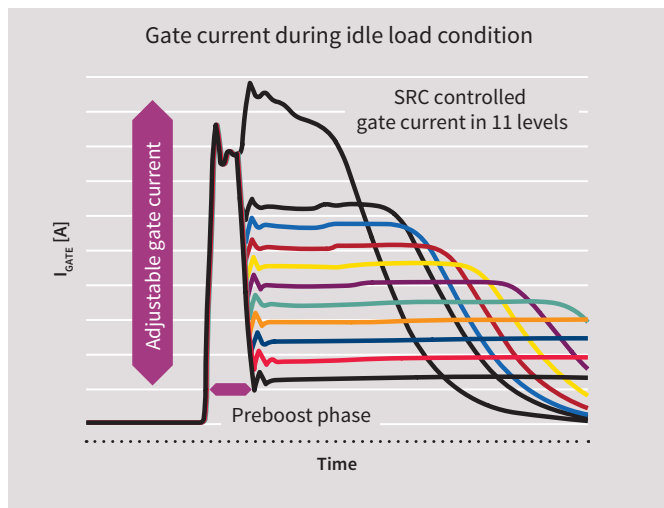
1200V single-channel isolated driver family with dynamic Slew-Rate Control

**1EDS-SRC driver board**  
with EconoDUAL™ 3 power module



**Feature** – real-time gate current control:

**Effect** – gate turn-on tunable across a very large dV/dt range:



## Benefits

- > Low EMI during low load conditions and high efficiency during high load conditions
- > Reduction or elimination of dV/dt filter

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