

Product brief

EiceDRIVER™ 1EDF5673K and 1EDS5663H

1-channel isolated gate drivers for enhancement mode GaN HEMTs

Infineon introduces two new members of a one-channel galvanically-isolated gate driver IC family. The new components are a perfect fit for enhancement mode GaN HEMTs with non-isolated gate (diode input characteristic) and low threshold voltage, such as CoolGaN™.

Complete support of all requirements specific to enhancement GaN HEMTs operation:

- > Low driving impedance (on-resistance 0.85 Ω source, 0.35 Ω sink)
- > Resistor programmable gate current for steady on-state (typ. 10 mA)
- > Programmable negative gate voltage to completely avoid spurious turn-on in half-bridges

Switching behavior independent from duty cycle:

- > Two off-voltage levels
- > Negative gate drive voltage available even for first pulse

Integrated galvanic isolation:

- > High power density of the application design
- > Excellent system-level timing accuracy
- > Robust common mode transient immunity (CMTI)
- > Functional and reinforced levels available

Applications

- > Bridgeless totem-pole PFC stages and LLC stages in
 - Telecom SMPS
 - Server SMPS
- > Active-clamping flybacks in AC adapters
- > 3-phase motor drives
- > Class E wireless charging
- > Class D audio amplifier

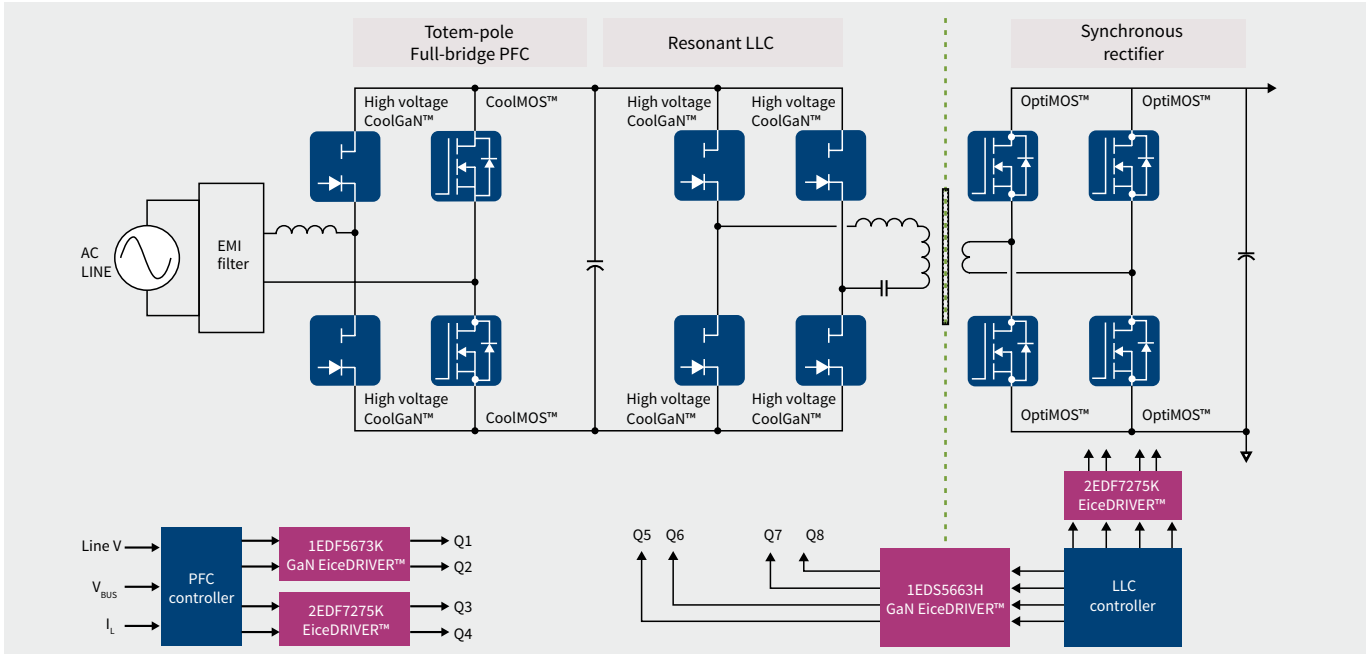
Key features

- > Output impedance:
 - $R_{DS(on)}$ source - 0.85 Ω ,
 - $R_{DS(on)}$ sink - 0.35 Ω
- > Input-output propagation delay accuracy: +/- 5 ns
- > CMTI: > 150 V/ns
- > Isolation:
 - 1EDF5673K: $V_{IOWM} > 460 V_{RMS}$
 - 1EDS5653H: $V_{IOTM} > 6000 V_{peak}$
- > Package:
 - 1EDF5673K: 5x5 mm LGA 13-pin
 - 1EDS5663H: 300 mil DSO 16-pin

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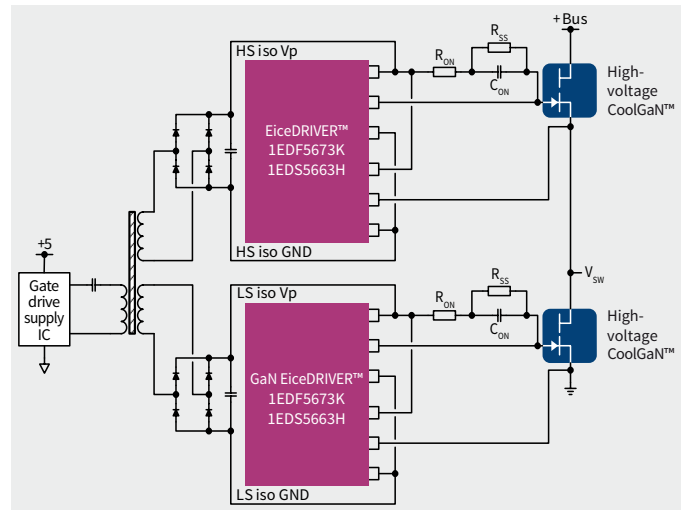
High-efficiency GaN switched mode power supply (SMPS)



Product portfolio

Product	1EDF5673K	1EDS5663H
SPN	SP002447622	SP002753980
Isolation (input to output)	1.5 kV _{peak}	V _{IOTM} = 6 kV _{peak} (VDE0884-10)
Package	13-pin LGA 5x5 mm	16-pin DSO 300 mil
Output current (source / sink)	4 A / 8 A	4 A / 8 A
UVLO	4.7 V / 5.0 V	4.7 V / 5.0 V

Half-bridge application design overview



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