Product brief

GaN EiceDRIVER™ family

Single-channel isolated gate driver ICs for high voltage GaN switches

CoolGaN™ e-mode HEMTs are best driven by Infineon's EiceDRIVER™ ICs, the 1EDF5673K, 1EDF5673F and 1EDS5663H. They ensure robust and highly efficient high voltage GaN switch operation whilst concurrently minimizing R&D efforts and shortening time-to-market.

Key advantages of designing with the GaN EiceDRIVER™ family

Positive and negative gate drive currents:

› Fast turn-on / turn-off GaN switch slew-rates

Firmly hold gate voltage at zero, during off-phase:

› Avoids spurious GaN switch turn-on

› Up to 50% lower dead-time losses

Configurable and constant GaN switching slew-rates, across wide range of switching frequency and duty-cycle:

› Robust and energy efficient SMPS designs

› Short time-to-market

Integrated galvanic isolation:

› Robust operation in hard-switching applications

› Safe isolation where needed

Key use cases

› Totem-pole PFCs

› Vienna rectifiers

› Multi-level topologies

› Resonant LLC

Key features

› Low ohmic outputs:
Source: 0.85 Ω
Sink: 0.35 Ω

› Single-channel galvanic isolation:
Functional: V_{IO}= 1500 V_{DC}
V_{IOWM} = 510 V_{rms} (16-pin DSO)
V_{IOWM} = 460 V_{rms} (LGA 5x5)
Reinforced: V_{IOTM} = 8000 V_{pk}
(VDE 0884-10 pending)
V_{IOWM} = 1420 V_{DC}
CMTI min: 200 V/ns

› Timing:
Minimum output pulse width: 18 ns
Propagation delay accuracy: 13 ns

GaN EiceDRIVER™ ICs evaluation environment

High frequency (1 MHz) half-bridge evaluation board EVAL_1EDF_G1_HB_GAN

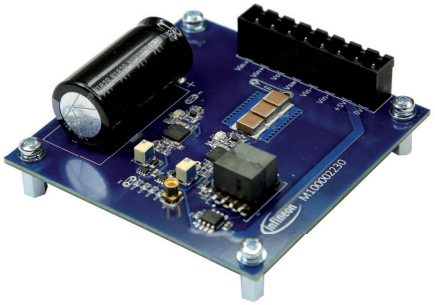
Key components:

› GaN switches: 2x CoolGaN™ 600 V e-mode HEMTs (IGOT60R070D1)

› GaN drivers: 2x GaN EiceDRIVER™ (1EDF5673K)

Order code: EVAL_1EDF_G1_HB_GAN*

*Coming soon



www.infineon.com/gan-eicedriver

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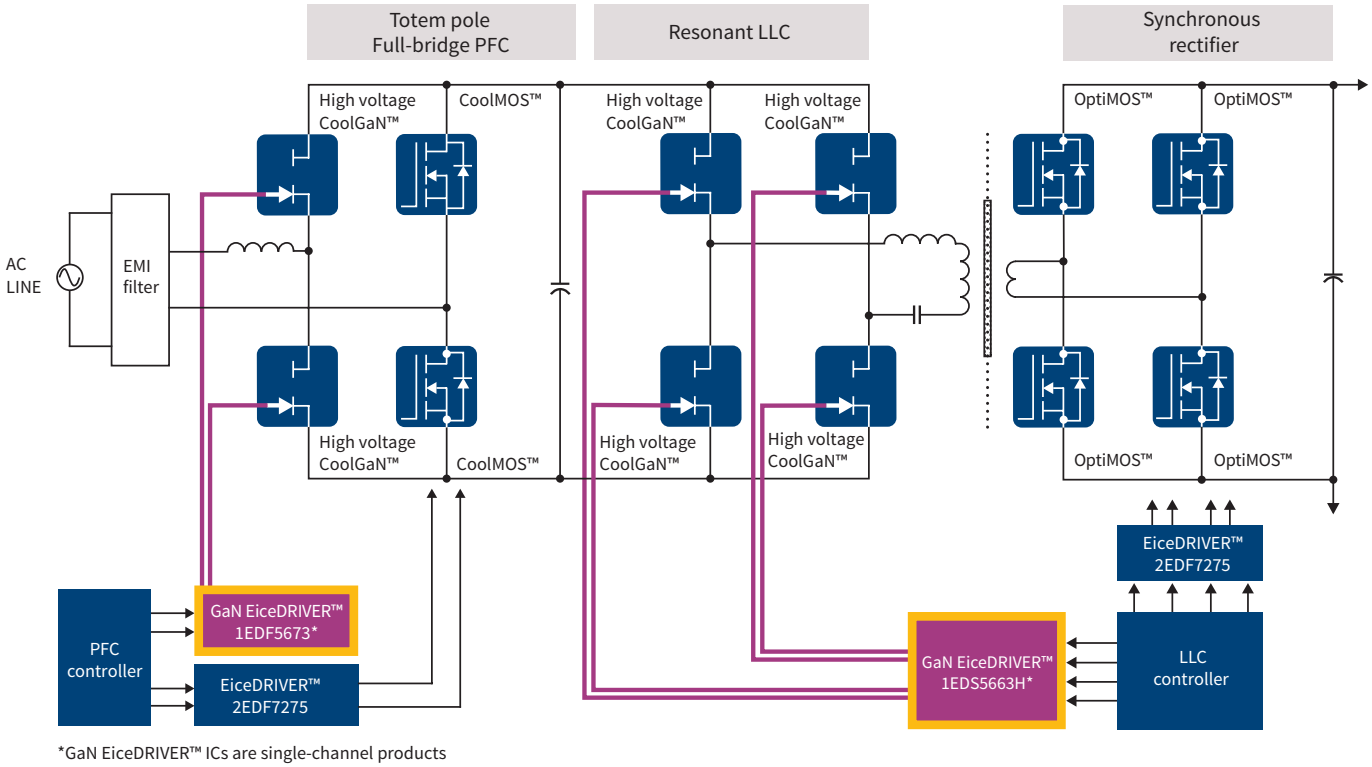
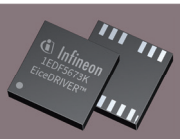
High power SMPS application example



*GaN EiceDRIVER™ ICs are single-channel products

Product portfolio

Package	 13-pin LGA 5x5 mm	 16-pin DSO 150 mil	 16-pin DSO 300 mil
Product	1EDF5673K*	1EDF5673F	1EDS5663H
OPN	1EDF5673KXUMA1	1EDF5673FXUMA1	1EDS5663HXUMA1
Isolation (input to output)	V_{IO} = 1500 V_{DC}	V_{IO} = 1500 V_{DC}	V_{IOTM} = 8000 V_{pk} (VDE0884-10 pending)
Source/sink output resistance	0.85 Ω/0.35 Ω	0.85 Ω/0.35 Ω	0.85 Ω/0.35 Ω
UVLO	4.5 V / 5.0 V	4.5 V / 5.0 V	4.5 V / 5.0 V

*Coming soon

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