

## 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

### 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\*

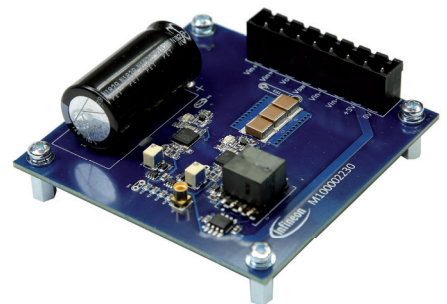
\*Coming soon

### Key use cases

- > Totem-pole PFCs
- > Vienna rectifiers
- > Multi-level topologies
- > Resonant LLC

### Key features

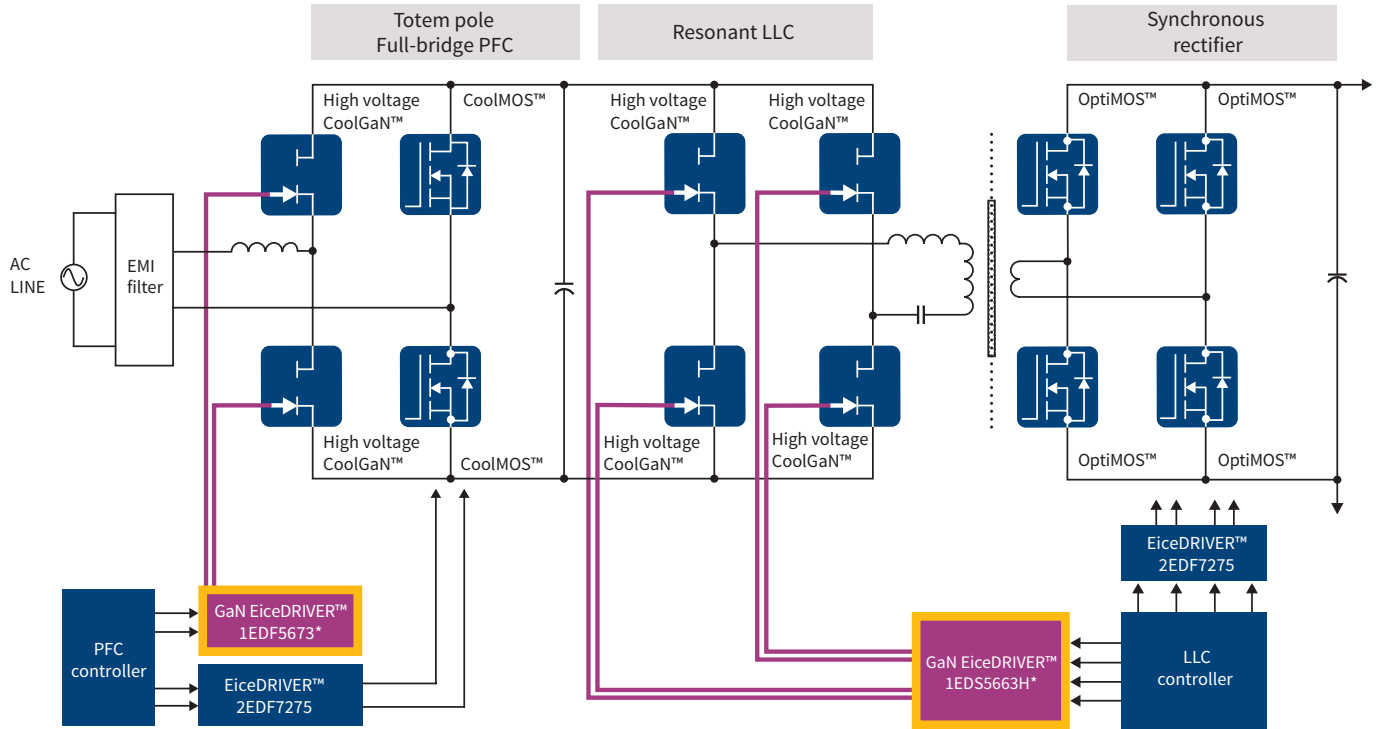
- > Low ohmic outputs:
  - Source: 0.85  $\Omega$
  - Sink: 0.35  $\Omega$
- > Single-channel galvanic isolation:
  - Functional:  $V_{IO} = 1500 V_{DC}$
  - $V_{IOWM} = 510 V_{rms}$  (16-pin DSO)
  - $V_{IOWM} = 460 V_{rms}$  (LGA 5x5)
  - Reinforced:  $V_{IOTM} = 8000 V_{pk}$  (VDE 0884-10 pending)
  - $V_{IOWM} = 1420 V_{DC}$
  - CMTI min: 200 V/ns
- > Timing:
  - Minimum output pulse width: 18 ns
  - Propagation delay accuracy: 13 ns



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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 $\Omega$ /0.35 $\Omega$	0.85 $\Omega$ /0.35 $\Omega$	0.85 $\Omega$ /0.35 $\Omega$
UVLO	4.5 V / 5.0 V	4.5 V / 5.0 V	4.5 V / 5.0 V

\*Coming soon

[www.infineon.com/gan-eicedriver](http://www.infineon.com/gan-eicedriver)

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