

## Solution Brief

# CoolGaN™ and GaN EiceDRIVER™

Cutting-edge performance with excellent reliability

The next essential step towards an energy-efficient world lies in the use of new materials and technologies. Wide bandgap semiconductors enable greater power efficiency, smaller size, lighter weight, lower cost, or all together.

### Key advantages of Infineon's GaN solution

- > The enhancement mode (e-mode) concept - the most robust and performing solution in the market
- > Industry-leading performance with the best figures-of-merit (FOM), enabling rugged and reliable system designs at an attractive overall system cost
- > Ten times higher breakdown field and a double electron mobility, compared to silicon
- > Ten times lower output and gate charge than silicon, enabling high frequency operations
- > Enabling hard switching in half-bridge topologies with an almost zero reverse recovery charge
- > Most reliable GaN solution in the market ensured through Infineon's pioneering qualification concept
- > A predicted lifetime of more than 15 years with a failure rate below 1 FIT
- > Perfect choice for a broad variety of applications such as server, telecom, hyperscale datacenters, adapters/chargers, wireless charging, SMPS and many others

### Driving CoolGaN™ HEMTs with GaN EiceDRIVER™ ICs

- > Positive and negative gate drive current enabling fast switching
- > Firmly holding gate drive voltage at zero when GaN switch is intended to be off, protects against spurious turn-on
- > Configurable and constant GaN switching slew-rates over a wide range of switching frequencies and duty cycles, results in robust and efficient GaN operation and short time-to-market
- > Integrated galvanic isolation
  - Robust operation in hard-switching applications
  - Mandatory where safety is required

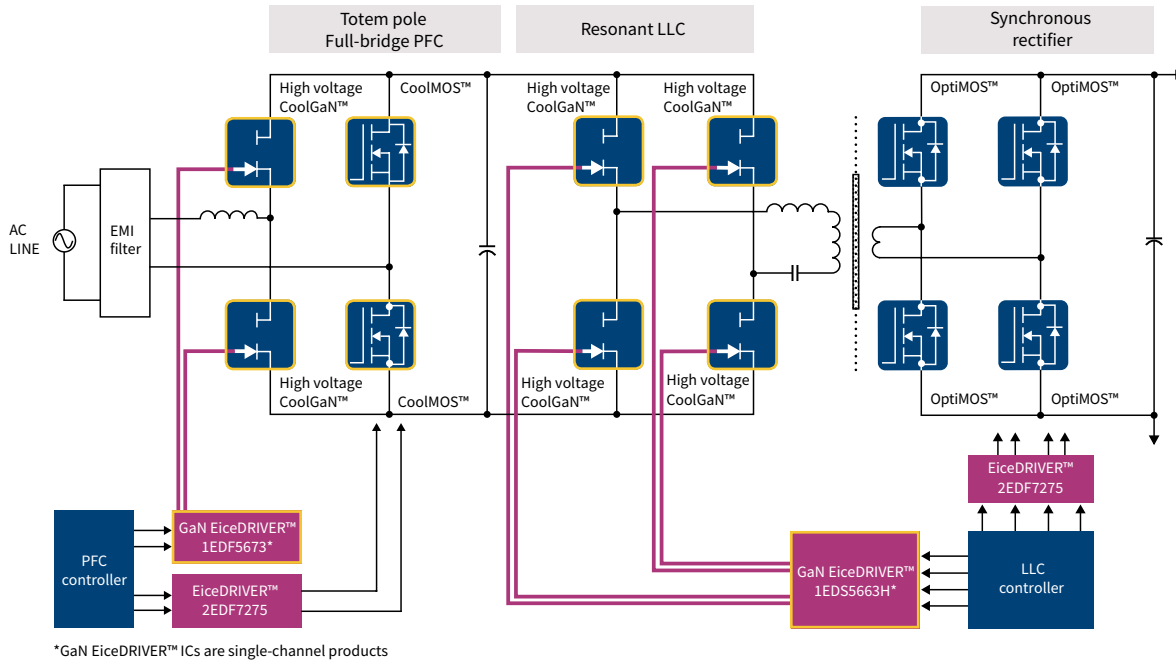
### System features

- > The most reliable GaN-based solution, delivering highest performance amongst all available GaN devices
- > Manufacturing expertise throughout the entire supply chain
- > Global application design support
- > Broad portfolio including switches and drivers

### System benefits

- > Perfect choice for high frequency and high power density applications
- > Industry-leading solution for target applications
- > GaN EiceDRIVER™ ICs for excellent robustness and efficiency
- > High quality volume supply that enables faster time-to-market
- > Reduced BOM costs and overall system cost

High efficiency GaN switched mode power supply (SMPS)



Product portfolio CoolGaNTM e-mode HEMTs

$R_{DS(on)}$ max. [mΩ]	DSO-20-85 Bottom-side cooling	DSO-20-87 Top-side cooling	HSOF-8-3 TO-leadless	DFN 8x8
35	IGO60R035D1**	IGOT60R035D1**	IGT60R035D1**	
70	IGO60R070D1	IGOT60R070D1	IGT60R070D1	IGLD60R070D1
190			IGT60R190D1S* IGT60R190D1**	IGLD60R190D1**
340				IGLD60R340D1**

\* Standard grade    \*\* Coming soon

Product portfolio GaN EiceDRIVER™

Package	13-pin LGA 5x5 mm	16-pin DSO 150 mil	16-pin DSO 300 mil
Product	1EDF5673K	1EDF5673F	1EDS5663H
Isolation (input to output)	$V_{IO} = 1.5 \text{ kV}_{DC}$	$V_{IO} = 1.5 \text{ kV}_{DC}$	$V_{IOTM} = 8 \text{ kVpk}$ (VDE0884-10)
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

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