CGD
CAMBRIDGE GaN DEVICES

[PRODUCT BRIEF]

CGD INTRODUCES ICeGaN® P2 SERIES

REDEFINED SYSTEM PERFORMANCE IN INDUSTRIAL APPLICATIONS

SITUATION

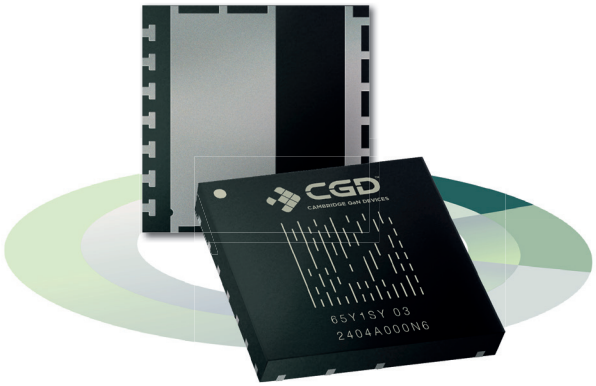
The widespread electrification of industrial activities and the rapid advances in AI in the digital economy are putting our era's environmental and energy challenges to the test.

CHALLENGE

With rising power usage demands and stricter energy standards, there is a critical need for new technologies and topologies that enhance efficiency, improve thermal performance, and increase power density in high-power applications.

SOLUTION

ICeGaN® is entering industrial applications, facilitating the adoption of new topologies that deliver high-power density with superior efficiency, surpassing what current technologies can achieve.



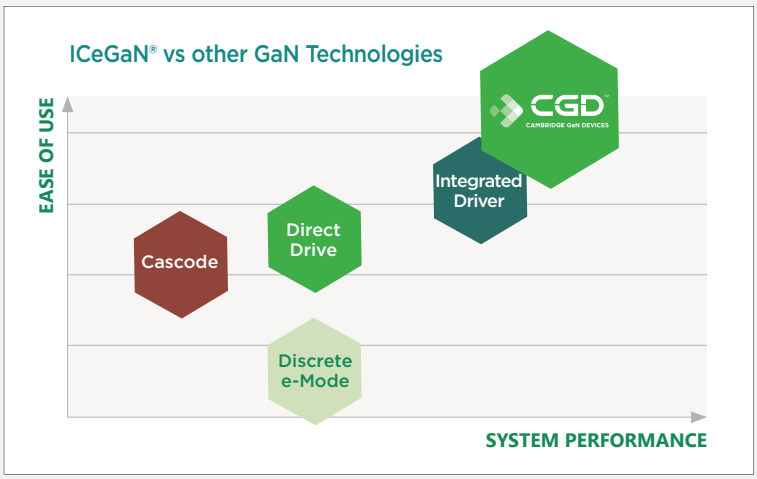
P2 Features and Benefits

Key features

- **ICeGaN® gate technology** with advanced clamping structure
- **Improved immunity** to dv/dt -related parasitic turn-on events, ensuring reliable operation
- **Optimised heat dissipation** for high efficiency and superior system performance in high-power applications
- **Straightforward parallelling,** simplifying design process for high-power applications and enhancing scalability

ICeGaN® Advantage in Industrial Applications

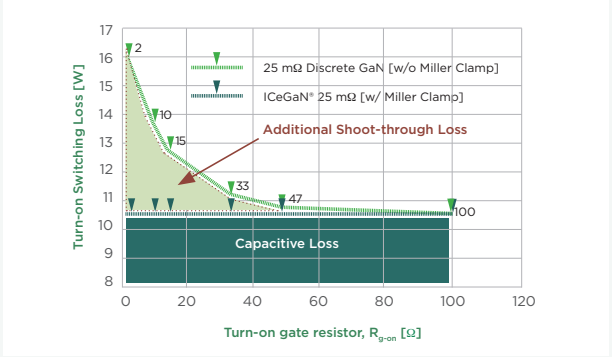
The ICeGaN® P2 series, featuring e-Mode GaN HEMT with CGD's unique ICeGaN® gate technology, leads the market in ease of use and system performance for industrial applications. With a 3 V threshold voltage, extended gate operation window, and true 0 V turn off, it can be driven with a broad range of gate drivers designed for MOSFETs and IGBTs, simplifying system integration. These P2 series GaN devices in innovative bottom-side cooled 10x10 mm² packages excel in thermal efficiency, enabling higher performances. Proven gate robustness and reduced losses from the integrated Miller Clamp further differentiate ICeGaN® technology from competitors.



APPLICATION FOCUS

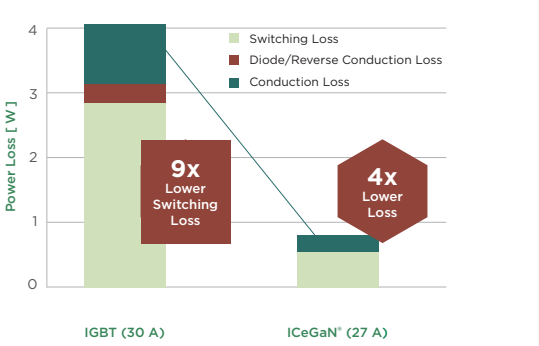
The ICeGaN® P2 series is engineered specifically for high-power applications, offering significant benefits for applications such as data centres and motor drives. Featuring an integrated Miller Clamp to eliminate shoot-through losses during fast switching and 0 V turn off to minimise reverse conduction losses, ICeGaN® outperforms discrete eMode GaN and other incumbent technologies. Simplified gate driver design and reduced system cost offering, combined with advanced high-performance packaging, make P2 series an excellent choice for optimising data centre operations and enhancing motor drive efficiency.

ICeGaN® Benefits in a Half-bridge (Data Centres)



The integrated Miller Clamp eliminates shoot-through events in half-bridge topologies even at high slew rates, allowing for faster switching speeds and reducing losses associated with shoot through.

ICeGaN® Advantage over IGBTs (Motor Drives)



GaN brings almost negligible switching losses, and ICeGaN®, with its Miller Clamp, provides zero reverse conduction losses, thus reducing the overall losses of the motor drives.

PRODUCT PORTFOLIO

PN	$R_{DS(on)}$ typ (mΩ)	Current Rating (A)	Package	Features	Preferred Gate Driver	Status
CGD65C025SP2	25	60	BHDFN-9-1	ICeGaN®	Any MOSFET and IGBT driver	Contact factory
CGD65C055SP2	55	27	BHDFN-9-1	ICeGaN®		In production



BH: Bottom heat-spreader

See product datasheet

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