

BelGaN starts sampling of its second Generation 650V eGaN platform, and demonstrates 1200V eHEMT GaN-on-Si technology

Brussel, Belgium Dec 4, 2023 ([IssueWire.com](https://www.issuewire.com)) - BelGaN, a leading GaN (Gallium Nitride) automotive semiconductor foundry in Europe, after launching its 1st Generation 650V eGaN technology into production 4 months ago, BelGaN now started Beta sampling of its 2nd Generation 650V eGaN platform to lead customers.

The 2nd Generation platform builds on the 1st Gen platform and improves static and dynamic performance parameters (R_{sp} and $R_{on} \cdot Q_g$), allowing to scale GaN chip size by over 25%, while also improving energy switching efficiency. Beta sampling comes with a full set of documentation including datasheets and PDK. Also, to support our customers in designing high-performance and good quality products and speed up time-to-market, the Beta release comes with a library of reference devices with R_{on} ranging between 50-1000m Ω that will be available for sampling both as bare die and in DFN 8x8 and 5x7 packages.

“The GaN market is accelerating in unprecedented speed with mobile consumer fast chargers rapidly switching from Silicon MOSFET to GaN power devices from 150W down to 25W adaptors”, said Dr. Alan Zhou, CEO of BelGaN, “We have engaged with over 30 global GaN customers, as GaN volume ramping up, customers are looking for cost reduction, our Gen-2 technology delivers a 25% reduction in chip size which is in-line with their expectations, in addition, customers are telling us they need 1200V GaN devices for automotive applications to potentially replacing SiC and IGBT in future Electrical Vehicles and industrial applications”.

As part of its forward-looking innovation program, BelGaN developed and demonstrated 1200V eHEMT GaN-on-Si technology (Alpha release). BelGaN's 1200V eHEMT technology is built on engineered thick 6" GaN-on-Si substrates fabricated by MOCVD, and results in hard breakdown > 1600V, a low R_{sp} of 4m Ω .cm², and has passed initial reliability testing.

Dr. Marnix Tack, CTO and VP of Business Development of BelGaN comments: “1200V is an upcoming technology node for GaN, driven by increasing battery voltage (400V -> 800V) in Electrical Vehicles. While Vertical-GaN architectures bring 650V-1200V technology capable of processing high power and aiming at favorably competing with SiC MOSFETs, our Lateral 1200V mode HEMT GaN-on-Si technology allows us to switch low-to-mid power at very high frequencies above 1MHz (increasing power density and reducing system BOM cost) and enables monolithic integration of additional functionalities (GaN IC).”

BelGaN is building the foundation for the “GaN Valley”, a growing and innovative ecosystem for GaN-based chips and power electronics with applications in Electrical Vehicle, Mobile, Industrial, Data Center, and renewable energy markets in Europe and beyond. This is well aligned with the European ambition for greater chip autonomy (European Chips Act) and a carbon-neutral society (Green Deal). Only a few months after its inception by BelGaN, the GaN Valley ecosystem already counts over 55 member companies and institutions along the value chain of the GaN industry in Europe.

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