Ascatron secures 3.5 M€ funding for SiC product development

Establishes volume production of its innovative Silicon Carbide power diodes and MOSFETs

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Ascatron develops high performance Silicon Carbide (SiC) power semiconductors using its proprietary 3DSiC® technology. SiC radically reduces losses in electric power converters and lowers system costs, making it key technology for many applications such as industrial motor drives, electric vehicles and renewable energy. Ascatron focuses on the supply of bare SiC dies for power modules and discrete components. In addition to the general advantages of SiC, Ascatron's 3DSiC® technology enables up to 30% lower power dissipation, higher current density and improved reliability.

Ascatron recently completed the sale of its shares in a Joint Venture company in China, and by this secured 3.5 M€ funding to continue the independent development of its own products. The fabrication process for volume production of SiC power diodes and MOSFETs is established at an Automotive qualified SiC foundry.

"We use advanced epitaxial growth as part of the manufacturing process of our SiC devices to form buried doped structures as voltage blocking elements. These structures protect the sensitive die surface from high electric fields and allow device designs optimized for high power ratings", says Adolf Schöner, CTO of Ascatron. "The key performance advantages are 15-30% higher current density and reliable operation even at elevated temperatures".

The first 3DSiC® devices available for design-in projects with customers are 1200V and 1700V JBS diodes. The production process is expected to be qualified in Q4 2019. The design is modular and can be tailored to application specific requirements. MOSFETs will be ready for production in Q2 2020.

"The cost advantage of our 3DSiC® devices comes into play especially at higher voltage and current ratings", says Christian Vieider, CEO of Ascatron. "The near-term target for our SiC diodes are 1200V and 1700V power modules. Next step will be to scale-up our SiC device wafer capacity together with our production partners".

Ascatron produces its own SiC epitaxy material with state-of-the-art thickness and doping homogeneity also for thick layers. This enables a high manufacturing yield for devices with high voltage and high current ratings. Ascatron will continue to provide its industry proven SiC epitaxy services to customers.

About Ascatron

Ascatron vision is to provide the full power of SiC for maximum performance and sustainable use of electricity. The mission is to develop medium and high voltage power semiconductor products with minimal losses and reliable operation based on advanced SiC material technology. The business model is semi-fabless where Ascatron design the power device and keep in-house production of the key epitaxy material, while chip fabrication is outsourced. Ascatron development and material production is situated in Stockholm, Sweden. Ascatron has a background in producing advanced SiC epitaxy material for global customers since 2011. www.ascatron.com

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