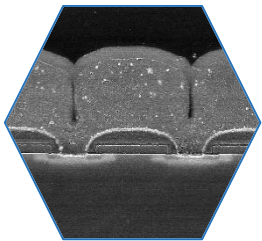
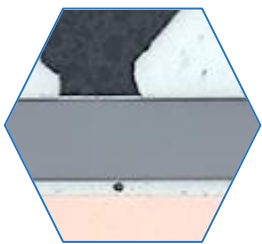
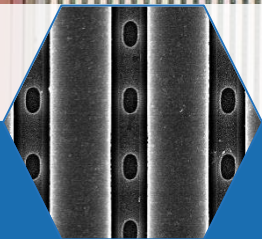


GeneSiC 1200V Gen3 and 3300V Gen2 SiC MOSFETs

Discover the cost and technology choices of the first commercially available discrete 3300V SiC MOSFET from GeneSiC.



Title: GeneSiC 1200V Gen3 and 3300V Gen2 SiC MOSFETs

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Silicon carbide (SiC) devices are gaining the confidence of many customers and penetrating various applications. This is confirmed by the promising market outlook for SiC devices, which according to Yole Développement will reach a compound annual growth rate (CAGR) of 31% for the period 2020 - 2026.

Since the commercialization of the first SiC device in 2001, the performance and added value of SiC devices has been gradually proven and their price has become increasingly acceptable to end-users.

Despite the value they add, SiC transistors still have some technical and commercial challenges to face. For example, the complexity of some process steps of SiC wafer processing and the supply constraints that impact wafer price still hinder SiC adoption on a large commercial scale – especially for high voltage classes.

GeneSiC Semiconductor is a world leader in silicon carbide technology. Holding leading patents on wide band gap power device technologies, GeneSiC is one of the first companies to propose 3300V discrete-packaged SiC MOSFET on the market, by benefiting from the dynamic supply chain of SiC. Their exhaustive product catalog of

discrete-packaged SiC MOSFETs entails components from 750V to 3300V.

In this context, System Plus Consulting presents a technology and cost analysis of two GeneSiC SiC MOSFET devices: G3R75MT12D (3rd generation, 1200V) and G2R1000MT33J (2nd generation, 3300V).

This report provides insights into the technology data, manufacturing cost, and selling price of both devices. Also included are wafer and die cost comparisons between 1200V SiC MOSFET devices from different players on the market.

COMPLETE TEARDOWN WITH

- Detailed optical and SEM photos
- Precise dimensional measurements
- Materials analysis
- Manufacturing process flow
- Supply chain evaluation
- Manufacturing cost and selling price analysis
- Technology comparisons between GeneSiC SiC MOSFETs Gen2 and Gen3
- Wafer and die cost comparisons between 1200V SiC MOSFET devices from different players on the market

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AUTHORS



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RELATED ANALYSES



SiC Transistor Comparison 2020

Compare the technology and cost of 29 SiC transistors from Wolfspeed, Rohm, STMicroelectronics, Infineon, Littelfuse, ON Semiconductor, Microsemi, and UnitedSiC.
November 2020



SiC Diode Comparison 2020

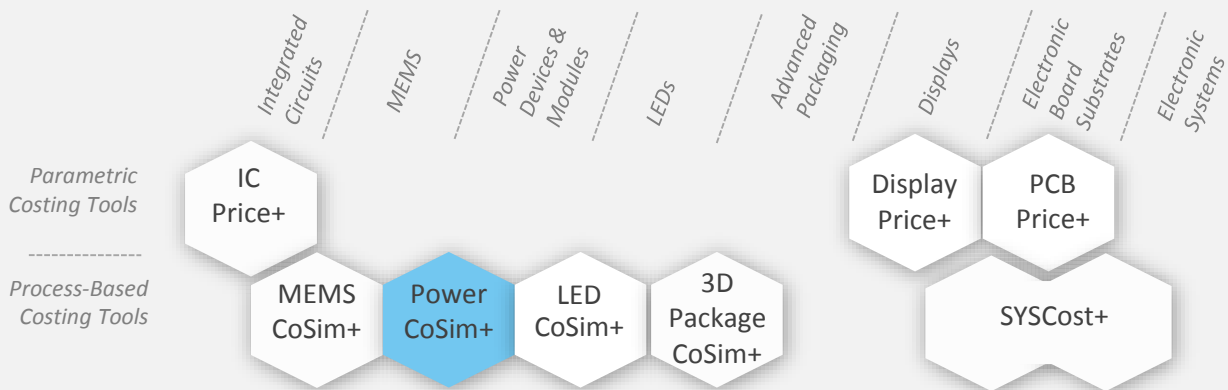
Comparison of the technology and cost of 11 SiC diodes from Infineon, Wolfspeed, Rohm, STMicroelectronics, ON Semiconductor, Microsemi, and UnitedSiC.
July 2020



Power SiC: Materials, Devices and Applications 2020

Despite the COVID outbreak, SiC-based design wins have multiplied for electric vehicle applications & will drive the SiC market beyond \$2.5B by 2025.
November 2020

COSTING TOOLS



Our analysis is performed with our costing tool Power CoSim+.

System Plus Consulting offers powerful costing tools to evaluate the production cost and selling price from single chip to complex structures.

Power CoSim+

Cost simulation tool to evaluate the cost of any Power Electronics process or device from single chip to complex structures.

ABOUT SYSTEM PLUS CONSULTING

WHAT IS A REVERSE COSTING®?

Reverse Costing® is the process of disassembling a device (or a system) in order to identify its technology and calculate its manufacturing cost, using in-house models and tools.



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