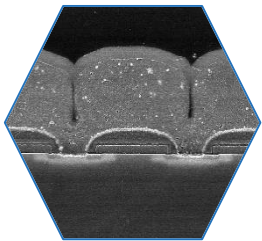
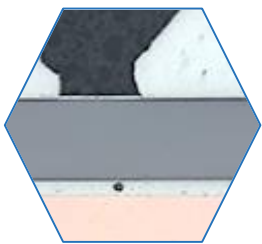
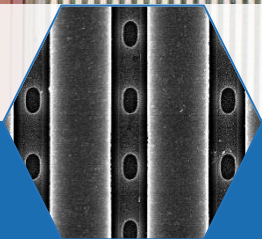


## GeneSiC 1200V Gen3 and 3300V Gen2 SiC MOSFETs

*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

**Pages:** 106

**Date:** August 2021

**Format:** PDF & Excel file

**Reference:** SPR21621

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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## 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

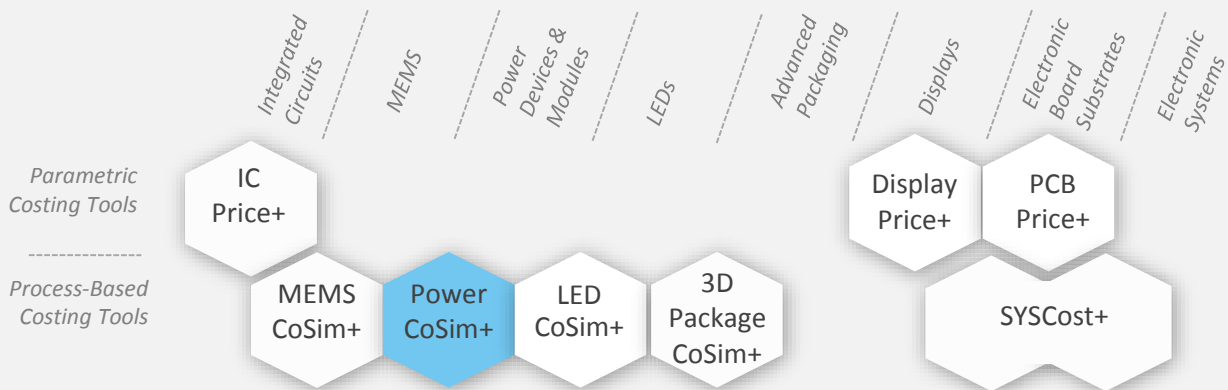
Comparison of the technology and cost of 11 SiC diodes from Infineon, Wolfspeed, Rohm, STMicroelectronics, ON Semiconductor, Microsemi, and UnitedSiC.  
July 2020



### 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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- **TEARDOWNS**
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# TERMS AND CONDITIONS OF SALES

## 1. INTRODUCTION

The present terms and conditions apply to the offers, sales and deliveries of services managed by System Plus Consulting except in the case of a particular written agreement.

Buyer must note that placing an order means an agreement without any restriction with these terms and conditions.

## 2. PRICES

Prices of the purchased services are those which are in force on the date the order is placed. Prices are in Euros and worked out without taxes. Consequently, the taxes and possible added costs agreed when the order is placed will be charged on these initial prices.

System Plus Consulting may change its prices whenever the company thinks it necessary. However, the company commits itself in invoicing at the prices in force on the date the order is placed.

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The quoted prices already include the rebates and discounts that System Plus Consulting could have granted according to the number of orders placed by the Buyer, or other specific conditions. No discount is granted in case of early payment.

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System Plus Consulting delivered services are to be paid within 30 days end of month by bank transfer except in the case of a particular written agreement.

If the payment does not reach System Plus Consulting on the deadline, the Buyer has to pay System Plus Consulting a penalty for late payment the amount of which is three times the legal interest rate. The legal interest rate is the current one on the delivery date. This penalty is worked out on the unpaid invoice amount, starting from the invoice deadline. This penalty is sent without previous notice.

When payment terms are over 30 days end of month, the Buyer has to pay a deposit which amount is 10% of the total invoice amount when placing his order.

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System Plus Consulting remains sole owner of the delivered services until total payment of the invoice.

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System Plus Consulting responsibility will not be involved in non execution or late delivery of one of its duties described in the current terms and conditions if these are the result of a force majeure case. Therefore, the force majeure includes all external event unpredictable and irresistible as defined by the article 1148 of the French Code Civil?

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Any dispute that may arise about the interpretation or execution of the current terms and conditions shall be resolved applying the French law.

If the dispute cannot be settled out-of-court, the competent Court will be the Tribunal de Commerce de Nantes.