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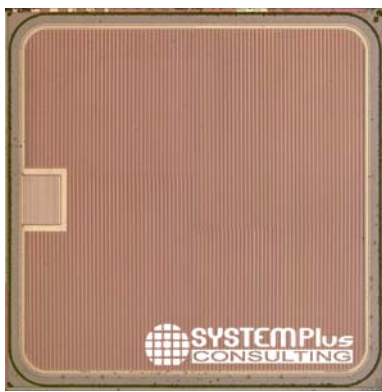
PACKAGING

SYSTEM

POWER

# STMicroelectronics 1200V SiC MOSFET STC30N120

*The 1<sup>st</sup> generation 1200V SiC MOSFET device from STMicroelectronics has good current density at a very competitive cost*



The STC30N120 is the first generation 1200V SiC MOSFET device from STMicroelectronics. The device has a planar structure and a design that allows good electrical performance, such as high current density. Moreover, the supply chain and manufacturing choices lead to a very competitive cost.

**Title:** STMicroelectronics 1200V SiC MOSFET STC30N120

**Pages:** 66

**Date:** January 2017

**Format:** PDF & Excel file

**Price:** Full report: EUR 3,290

The device is suitable for high power applications like motor drives, inverters, DC-DC converters and power supplies.

The STC30N120 integrates first generation high-voltage SiC power MOSFET dies in a dedicated discrete package.

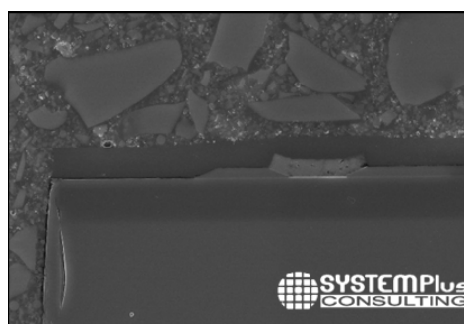
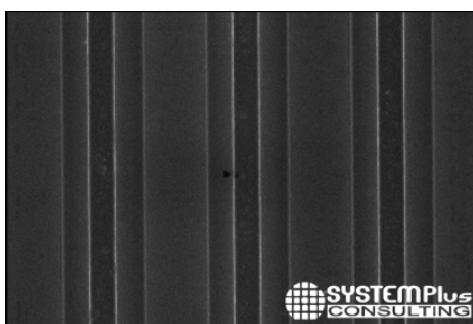
The device is assumed to operate at very high temperature, up to 200°C, and to have an on-resistance of 90mΩ, with generally standard SiC manufacturing technology.

The report goes into depth in its analysis of the packaging and the components, with images of the complex planar SiC structure.

It also includes production cost analysis and detailed comparison with Rohm and Wolfspeed's SiC MOSFETs and with 1200V silicon IGBTs. The comparison highlights differences in the electrical parameters, supply chain and production cost.

## COMPLETE TEARDOWN WITH:

- Detailed photos
- Precise measurements
- Materials analysis
- Manufacturing process flow
- Supply chain evaluation
- Manufacturing cost analysis
- Selling price estimation
- Comparison with Rohm and Cree SiC MOSFETs
- Comparison between 1200V Silicon IGBTs and SiC MOSFETs



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### AUTHORS:



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Elena is in charge of costing analyses for MEMS, IC and Power Semiconductors. She has a deep knowledge of Electronics R&D and Manufacturing environment. Elena holds a Master in Nanotechnologies and a PhD in Power Electronics.



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Nicolas is in charge of physical analysis. He has a deep knowledge in chemical and physical analyses. He previously worked in microelectronics R&D for CEA/LETI in Grenoble and for STMicroelectronics in Crolles.

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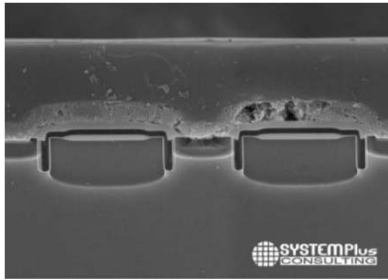
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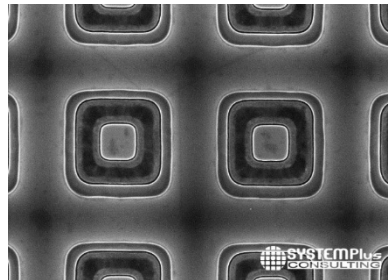
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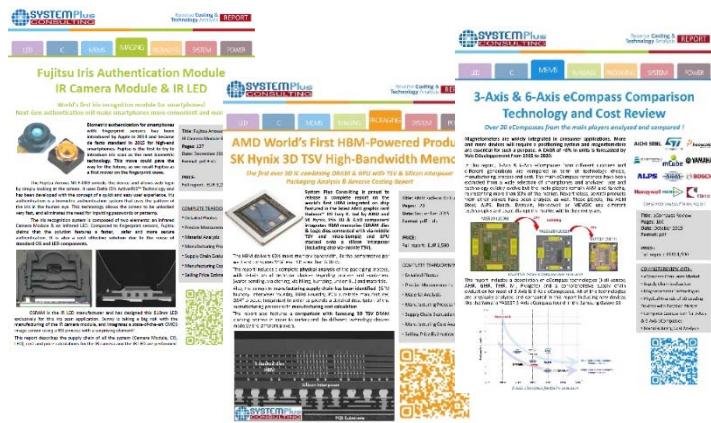
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