

## INNOVATIVE DESIGN AND PACKAGING ARE BOOSTING THE SILICON 100V MOSFET INDUSTRY

**NANTES, France – October 10, 2017:** Disruptive technologies are driving the steady growth of the silicon power 100V MOSFET industry. The overall 41-100V MOSFETs market reached US\$1.3 billion in 2016 and is expected to be US\$1.8 billion in 2022<sup>1</sup>.

Under this dynamic context, [System Plus Consulting's](#) experts are following the technical advances and the evolution of the manufacturing costs of the 100V MOSFET devices, dedicated to industrial applications. The reverse costing & technology analysis company highlights the latest innovations and their impact on the manufacturing process flow, with two reports: [Industrial 100V MOSFET Technology Review](#) and [Industrial 100V MOSFET Cost Review](#).

*“Leading power electronics companies are more and more investing in advanced packaging technologies and new design solutions to propose innovative power MOSFETs with higher electronic performances,”* asserts **Dr. Elena Barbarini, Senior Cost Engineer at System Plus Consulting**. *“This approach is a continuous operation made by all power electronics players to answer to the market’s evolution”*.

What are the innovations in advanced packaging for 100V MOSFET devices? What are the latest designs? What is the impact on the manufacturing process flow? Infineon Technologies (including International Rectifier), ON Semiconductor (including Fairchild Semiconductor), Toshiba, Vishay and STMicroelectronics... System Plus Consulting proposes you a detailed reverse costing & technology analysis of 20 selected 100V MOSFET devices.



<sup>1</sup> Source : [Power MOSFET 2017: Market and Technology Trends report](#), Yole Développement, April 2017

---

## Silicon 100V MOSFET devices: what is inside?

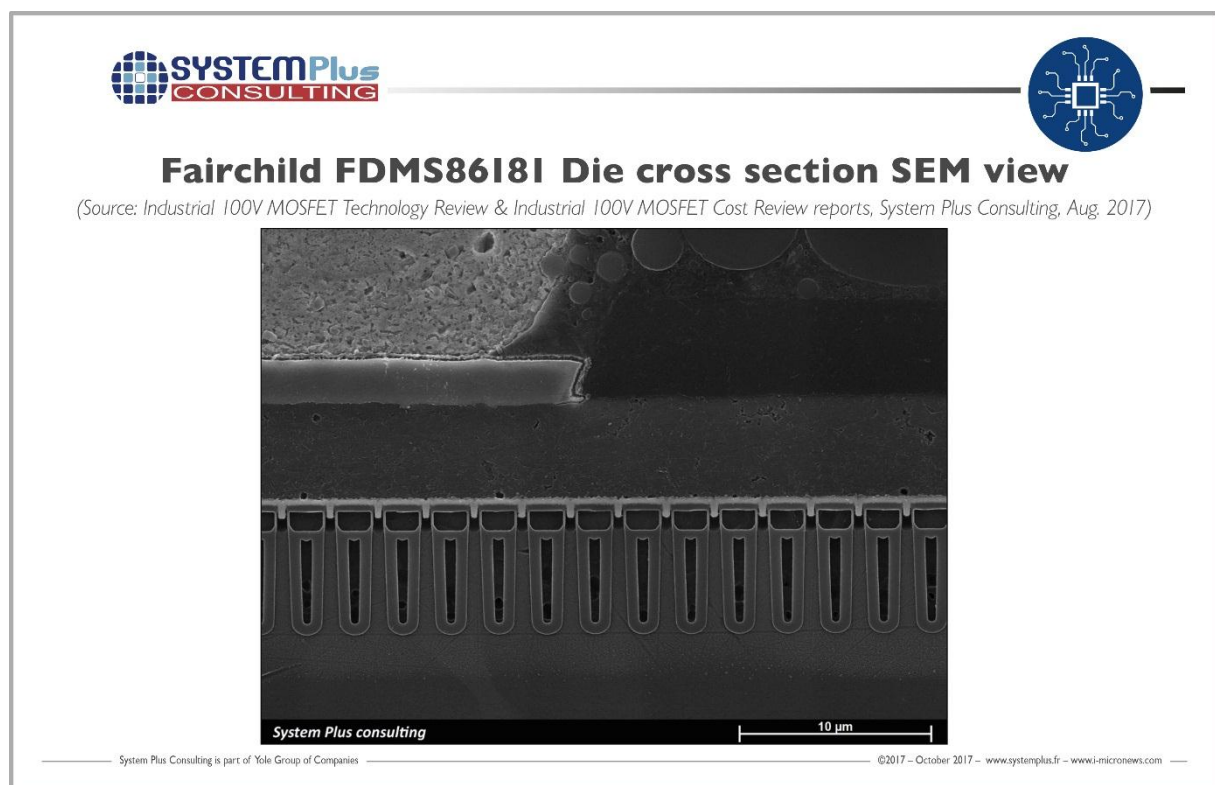
Both reports identify and analyze resemblances and differences between 20 devices selected by System Plus Consulting experts. Aim of this selection was to understand the technical evolution and the impact at the current level, with the same voltage range and similar packaging solutions.

Power electronics companies are strongly involved in the development of new packaging solutions. *“We analyze and compare products from the five main manufacturers”,* explains Dr. Barbarini from System Plus Consulting. *“Among them, Fairchild Semiconductor and International Rectifier have been recently acquired by ON Semiconductor and Infineon, respectively. These acquisitions will push the companies to choose, in the near future, between products in the portfolio, based on cost and performance.”*

With different names but with the same objectives, they are looking for better electric performances. Copper wires bondings, source connection approach with leadframes soldred directly on the chip ... packaging is key to answer to the market demand. Today 50% of the total power 100V MOSFET manufacturing cost is due to the packaging.

The design is also part of the technical evolution. Companies initially developed planar MOSFET design. Today complex designs such as source trench structure and shielded-gate have been improved with deeper trenches, new doping profile and epitaxy process. Within the silicon power MOSFET market, innovation is a continuous process, boosted by the competition with WBG<sup>2</sup> technologies, especially GaN devices. Indeed WBG solutions push the MOSFET players to innovate constantly.

Today, MOSFET players are looking for better electric performances. They are daily searching for the relevant balance between packaging and design innovations and cost. 100V MOSFET technology & cost review reports from System Plus Consulting offer a comprehensive description and analysis of this challenge.



---

<sup>2</sup> WBG : Wide Band Gap

---

To understand cost structure of power electronics devices, System Plus Consulting also proposes a power electronics training session on November 7 in London, United Kingdom.

The program is designed to provide updated information on technologies, production processes in electronics and to explain their impact on manufacturing cost and selling price. With a progressive approach toward electronic product complexity, experts will detail how to identify and handle cost sensitive parameters to make efficient strategic decisions. Discover the [agenda](#) and [register](#) today!

**About System Plus Consulting**

System Plus Consulting specializes in the cost analysis of electronics, from semiconductor devices to electronic systems. Created more than 20 years ago, System Plus Consulting has developed a complete range of services, costing tools and reports to deliver in-depth production cost studies and estimate the objective selling price of a product. System Plus Consulting engineers are experts in Integrated Circuits - Power Devices & Modules - MEMS & Sensors - Photonics – LED - Imaging – Display - Packaging - Electronic Boards & Systems.

Through hundreds of analyses performed each year, System Plus Consulting offers deep added-value reports to help its customers understand their production processes and determine production costs. Based on System Plus Consulting's results, manufacturers are able to compare their production costs to those of competitors.

System Plus Consulting is a sister company of Yole Développement. More info on [www.systemplus.fr](http://www.systemplus.fr).

**Press contact: Sandrine Leroy ([leroy@yole.fr](mailto:leroy@yole.fr))**

###