SEMIKRON SKiM306GD12E4
1200V 300A IGBT Solderless Module

SKIM 63, solderless, sinter technology power module developed for high reliability operation in a light module

The SKiM306GD12E4 is a 1200V 300A 6-pack configuration with 3 separated half bridges for high reliability operation.
Semikron uses silver sinter technology to increase the durability and pressure contact to obtain a solderless power module.

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The **SKiM306GD12E4** is based on IGBT4 technology from Infineon and CAL4-F diode. Semikron has designed the CAL4-F diode to be very efficient with the IGBT4. The diode has been designed to obtain a good resistance to environment in a non hermetic package and benefits from the expertise of Semikron in the irradiation to reduce the carrier lifetime.

The SKIM 63 module is a no baseplate design. The DBC substrates are directly assembled on the heatsink to enhance the power management and reduce the height of the module.

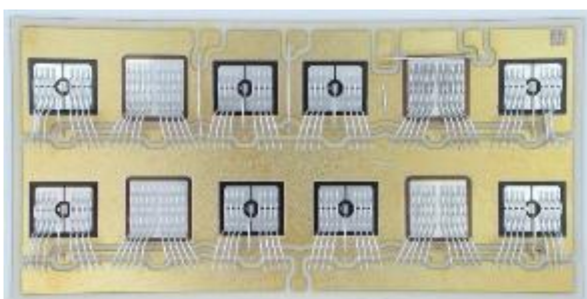
The sinter layer is very thin to decrease the thermal resistance and limit the cost of silver material. With a cost close to a classic SAC solder, the sintered joint increases the service life.

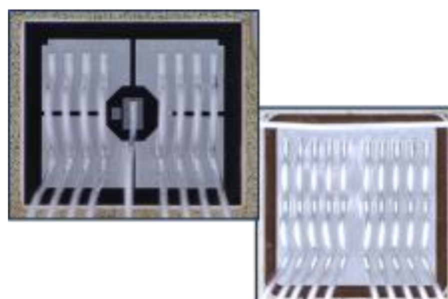
The report presents a deep technology analysis of the packaging and of the transistors and diodes structures.

It also includes production cost analysis and a specific economic comparison with Infineon FS100R12PT4 1200V 100A.

COMPLETE TEARDOWN WITH:

- Detailed photos and identification
- Analysis of silver sinter, pressure contacts
- Analysis of transistor and diode structure
- Manufacturing process flow
- In-depth economical analysis
- Manufacturing cost breakdown
- Selling price estimation
- Comparison of SKiM306GD12E4 vs. Infineon FS100R12PT4





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Sylvain is in charge of costing analyses for IC, Power and MEMS. He has more than 10 years of experience in the Power Device manufacturing costs analysis and has studied a wide range of technologies.

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Véronique is in charge of structure analysis of semi-conductors. She has a deep knowledge in chemical & physical technical analyses. She previously worked for 20 years in Atmel Nantes Laboratory.

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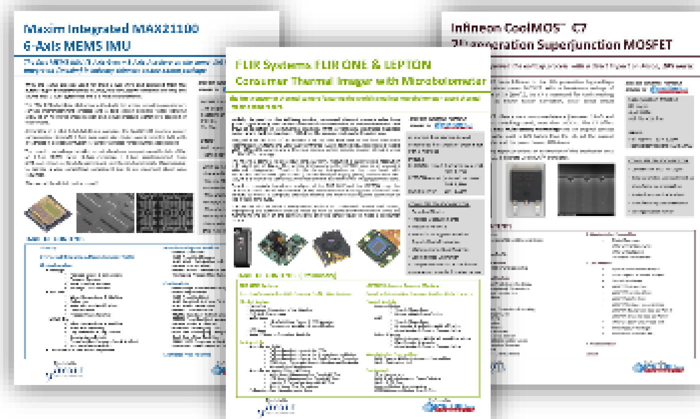

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