Spring integration
Wire bond-free, solder-free, thermal paste-free

Applications

SEMIKRON has successfully established its SKiN® packaging technology and is now combining it with spring-contact technology for even better results. These two systems are planned mainly in electric vehicle and wind turbine applications.

Benefits

SKiN® technology is a flexible foil used in place of wire bonds. In combination with sinter technology, the SKiN® technology can help double inverter power density to 3 A/cm^2, leading to a 35 % reduction in inverter volume. This high power density requires space-saving and uncomplicated means of connecting the power components with the driver unit. The driver terminals thus use spring contacts affixed to the surface of the flexible foil. SEMIKRON looks back on ten years of experience with spring-contact technology, with more than 500 million SEMIKRON spring contacts in field applications today. The new connection technology also does away with thermal paste, using a sintered layer instead of thermal paste and soldered base plate. Thermal paste is responsible for around 30 % of the overall thermal resistance in an electronic system, which is why it is a key factor in the electric and thermal dimensioning of a power electronics system. With SKiN® technology, the thermal paste layer between the PCB and heat sink is replaced by a silver sinter layer, improving thermal conductivity between chip and heat sink by 35 %.