SEMIKRON
innovation + service

Stay Cool –
Heat Dissipation is Our Job

Thermal Interface Materials

Motor Drives | Wind Energy | Solar Energy | Power Quality | AC | DC Power Supplies | Utility Vehicles | Urban Transport Equipment

Pre-applied Thermal Interface Materials

Semikron offers a broad range of pre-applied thermal interface materials for a wide product range. Phase Change materials are available for selected baseplate modules which offers improved thermal performance and easy handling due to a dry contact surface.

Benefits

SEMIKRON was the first power module manufacture on the market who offered power modules with pre-applied thermal paste. This service offers additional benefits in regards to productivity, performance and reliability.

The outsourcing of this “dirty” process including the complete qualification saves labour costs, production space and reduces the required logistics. Modules with pre-applied thermal paste can be shipped directly to the assembly line without additional treatment. Furthermore, the bill of material for the complete inverter will be reduced. As a result, the time to market for the design will be shortened.

The modules with pre-applied thermal paste are printed in a clean environment on an automated and SPC controlled silk screen and stencil printing line. The applied thermal paste layer is uniform, homogenous and of optimised thickness. These quality characteristics ensure the lowest possible contact resistance for the highest reliability and life time. Depending on module type and customer requirements the modules can be applied with different kinds of thermal interface materials like silicone based and silicone free thermal grease as well as phase change material. The portfolio expansion towards phase change materials will support the market needs with regards to improved thermal performance and easy handling.

Applications

With more than eight years of experience and almost one million printed modules per year the printing process has been established successfully. Based on different application requirements and different environmental conditions, a silicone based or silicone free thermal grease can be applied. The thoroughly tested and long term proven materials ensure highest reliability.

Product range

Silicone based and silicone free thermal paste materials are available for a broad range of products. Phase change material will be offered for a selected range of baseplate modules first and then expanded gradually. Module types offered with pre-applied thermal interface material are MiniSKiiP, SKiM, SEMITOP and SEMiX Press-Fit. Power modules with pre-applied phase change material like SEMiX and Semitrans are added gradually.

Key features

- Optimised thickness for lowest thermal resistance
- Highest reliability and lifetime
- Easy and fast module assembly
- Silicone and silicone free thermal interface materials available
- Phase change materials on selected baseplate modules

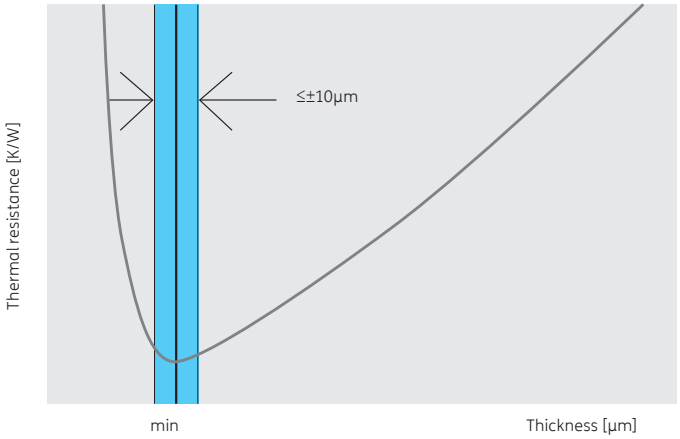
High Reliable Processes and Materials

Increased productivity due to reduced handling cost and logistics

- Low labour cost
- Reduced production space and logistics
- Modules shipped directly to assembly line
- No additional treatment required

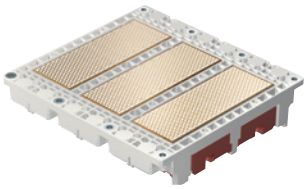
Lowest thermal resistance by high quality silk screen and stencil printing

- Thickness optimised to lowest thermal resistance
- Automated SPC controlled printing line
- Reproducible honey comb pattern
- Uniform and homogeneous thermal paste layer ensured
- Improved lifetime and high reliability

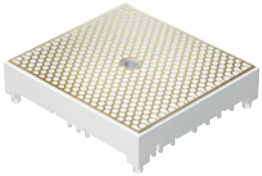


A broad product portfolio offers highest flexibility

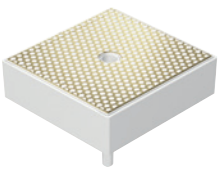
NEW



SKiM



SEMITOP



MiniSKiiP

SEMiX Press-Fit
with Phase Changer

Module Familiy	Silicone based grease	Silicone free grease	NEW Phase changer
SKiM	X	-	-
SEMITOP	X	-	-
MiniSKiiP	X	X	-
SEMiX Press-Fit	-	-	X
Coming 2015:			
SEMiX	-	-	Q III /2015
SEMITRANS	-	-	Q IV/2015

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Note: All information is based on our present knowledge and is to be used for information purposes only. The specifications of our components may not be considered as an assurance of component characteristics.

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