

NH-3000D, NH-4000, SHB-200 ~High thermal conductive paste~

These silver pastes have higher thermal conductivity than solder.

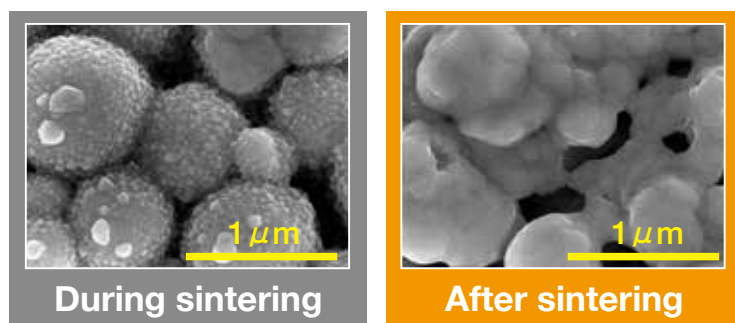
Features

- These pastes have high joining reliability.
 - Due to mixing of silver nanoparticles and silver powder, dense sintered junction layer shows high thermal conductivity.
 - New sinter paste SHB-200 is available for direct joining with Ni under pressurized process.
- It has been applied for a patent

Mechanism of high joining strength and high thermal conductivity

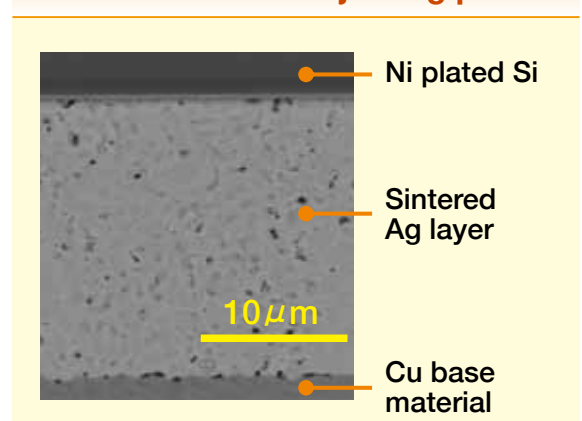
- Silver powder and silver nanoparticles sinter closely to show high joining strength, high thermal conductivity and low volume resistivity

SEM observation result of the particle surface



Silver nanoparticles promote fusion between silver powders to strengthen thermal and electronic moving pathways.

SEM observation result of cross-section of joining part



Specification (typical data)

Items		NH-3000D	NH-4000	SHB-200	additional notes
Curing condition		190°C×90min	150 °C×90min	250°C×30min *)	*)pressurized process is necessary
Joining strength	First	21N/mm ² *1)	20N/mm ² *1)	40N/mm ² *2)	Element type *1)2mm□Au plated Si. *2)5mm□Ni plated Si
	The rate of change after thermal cycle test	-10%	-10%	0%	After 1,000cyc. -55/+125°C, each 30 min.
Thermal conductivity		95W/m·K	65W/m·K	240W/m·K	laser flash method
Volume resistivity		12μΩ·cm	14μΩ·cm	5μΩ·cm	4-point probes method
Element size		2mm□以下	2mm□以下	5mm□以下	—
Minimum thickness		10μm	10μm	20μm	—
Available base material		Au, Ag	Au, Ag	Au, Ag,Cu, Ni	—

Above data are representative value, not a standard value.