

SiC、GaN Semiconductor × Sintering bonding

Sintering Business

Proposal for Sintering Equipment Contributing to High Density and Efficiency of Power Semiconductors.

Requirement

High Output / High Voltage / High Current High-Speed Operation / High Frequency Increased Thermal Capacity / High Efficiency

Solution

Efficient Thermal Conductivity / Improved Reliability

No Re-melting due to High Melting Point

	Sintering Agent	Solder
Melting Point of Bonding Layer (°C)	962	220
Bonding Process Temperature (°C)	250-300	240-260
Thermal Conductivity (W/m·°C)	>200	22-55
Need for Pressure	0	×

Sintering Bonding Process



	With Pressure: 10MPa	Without Pressure
Heating	300°C	300°C
Porosity	20%	41%

▲ This table shows the bonding density under pressure during sintering.

Dynamic Insert Technology

- Accurate Temperature, Time, and Pressure Control
- Real-time Display of Pressure and Temperature
- Simultaneous Pressurization of Dies with Different Heights and Shapes
- Sintering of Different Areas in One Cycle
 (e.g., Die→DBC / DBC→Heatsink)





Wide Sintering Area

Maximum Size 350×270mm (Industry's Largest)



Prototype & Trial Center Introduction

Available at Shinnwa MECHATRONICS SYSTEM CENTER (MEC)

- Support from Sintering Prototyping to Evaluation
- Consultation for Mass Production Equipment Design and Customization
- Trial with Brought-in Sintering Agents (Please consult in advance for feasibility)
- Pre- and Post-Sintering Equipment Available

Flow from Trial to Prototyping



Access & Contact Information





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