

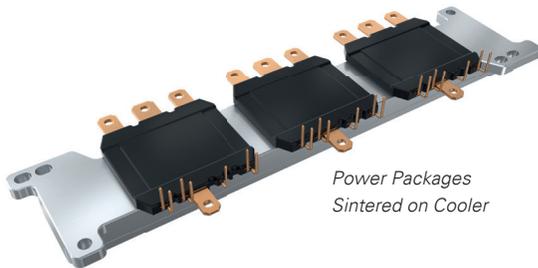
Sintering System SIN 100 Multi Drive

Flexible, fully automated modular system for high-volume package-to-cooler sintering

The SIN 100 Multi Drive system is a flexible platform designed to meet the production requirements of various package and cooler layouts. It can sinter up to four coolers simultaneously.



SIN 100 Multi Drive In-line System



*Power Packages
Sintered on Cooler*

The system has been developed to allow high yield manufacturing of technical demanding devices. To ensure reliable production of such modules, it is capable of handling heat- and pressure-sensitive mold compounds while compensating for cooler warpage and bow, precisely controlling the force and temperature applied to each individual sinter joint.

Within the vacuum chambers, substrate and package temperature, atmospheric pressure and gas composition can be precisely controlled throughout the entire heating, sintering, and cooling sequence. Copper oxidation can be effectively minimized. In particular, the use of formic acid or forming gas enables in-situ deoxidation of copper surfaces before and after sintering. Maintaining or creating oxide-free surfaces is crucial, as clean and reactive interfaces improve the sinterability of Ag and Cu materials and ensure a high-quality surface finish.

The SIN 100 Multi Drive combines modular flexibility with precise process control to deliver high-yield, reliable sintering of complex packages.

System features

- Individually controlled, dynamically adjustable pressing force
- Dynamic controlled and monitored pressure ramps
- Capable to sinter four coolers at once
- High flexibility due to fast exchangeable press tools
- Precise management of the process atmosphere (N₂, N₂/H₂, HCOOH)
- Suited for Ag and Cu materials and interfaces
- Atmospheric pressure range: 0.1-1,200mbar
- Temperature range: up to 350°C
- Integrated booster heating technology
- Flexible pin heating system
- Dynamic temperature control from upper to lower punch for minimized thermal distortion
- Hermetically sealed process chambers
- Programmable, controlled and monitored temperature profiles
- Constant process control and traceability
- Integrated interface to MES (e.g. SECS/GEM)
- Easy operation by touch screen panel
- Modular design with flexible expandability
- Internationally patented