



GEMINI[®] FB XT

Automated Production Wafer Bonding System



Introduction

Integrated platform for high precision alignment and fusion bonding

Vertical stacking of semiconductor devices has become an increasingly viable approach to enabling continuous improvements in device density and performance. Wafer-to-wafer bonding is an essential process step to enable 3D stacked devices. EVG's GEMINI FB XT integrated fusion bonding system extends current standards and combines higher productivity with improved alignment and overlay accuracy for applications such as memory stacking, 3D systems on chip (SoC), backside illuminated CMOS image sensor stacking, and die partitioning. The system features the new SmartView NT3 bond aligner, developed specifically for fusion and hybrid wafer bonding alignment requirements of < 50 nm.

Technical Data

Wafer diameter (substrate size)	200, 300 mm
Max. number of process modules	6 + SmartView [®] NT
Optional features	Debond module Thermocompression bond module

Features

- New SmartView[®] NT3 face-to-face bond aligner with sub 50 nm wafer-to-wafer alignment accuracy
- Up to six pre-processing modules like:
 - Clean module
 - LowTemp[™] plasma activation module
 - Alignment verification module
 - Debond module
- XT Frame concept for highest throughput with EFEM (Equipment Frontend Module)
- Optional features:
 - Debond module
 - Thermocompression bond module

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