adeia™

Product Brief

High Density Low Cost Stacked 3D NAND with Hybrid Bonding

Memory array and logic disaggregation 64, 96, 128 layers and beyond for 3D NAND

Data Centers

AI, Machine Learning & Deep Learning Hardware

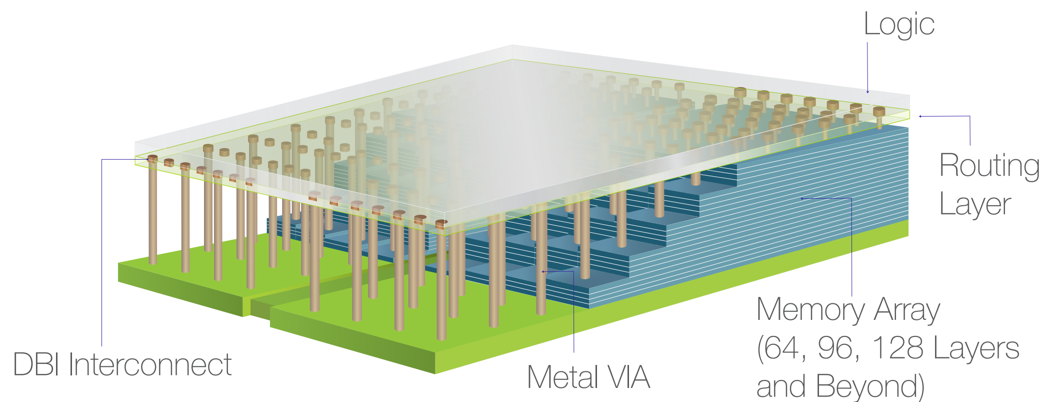
Automotive

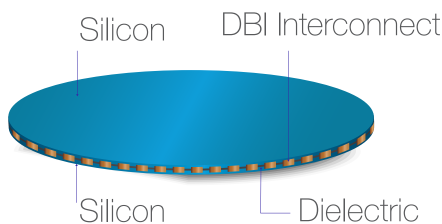
Gaming

Consumer Electronics

Industrial & Scientific

DBI® Enabling Next-Gen Stacked 3D NAND





DBI Hybrid Bonding with Metal Interconnect

DBI Hybrid Bonding Benefits

With DBI technology, 3D NAND and Logic wafers can be bonded with exceptionally fine pitch 3D interconnect.

- Low temperature bonding
- Memory array and logic disaggregation
  - Technology node optimization
  - Yield enhancement
  - Die size reduction
  - High speed interfaces
- Fine pitch 3D interconnect scalable down to 1µm
  - Enables high bandwidth
- Reduces product development cycle

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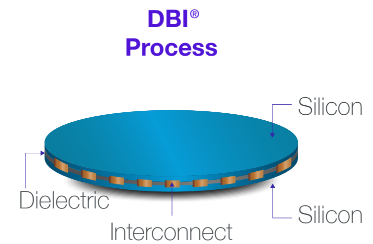
DBI® Technology

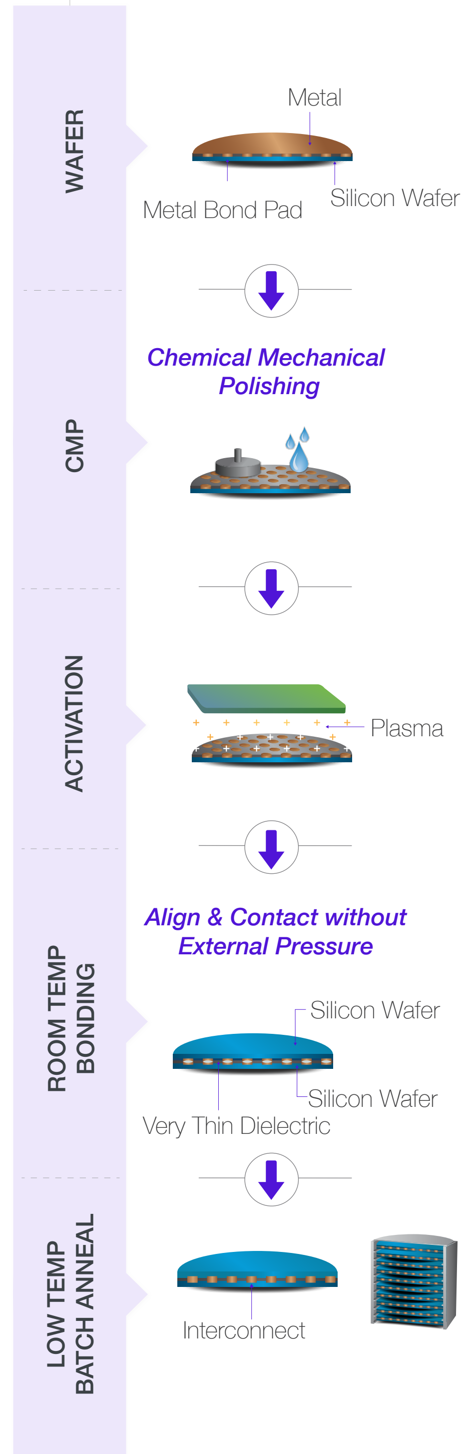
Direct Bond Interconnect (DBI) technology is a low temperature direct hybrid bonding solution that allows wafers or die to be bonded with exceptionally fine pitch 3D electrical interconnect. DBI can also minimize the need for Thru Silicon Vias (TSVs).

DBI technology is in high volume production today.

Features

3D Interconnect Metals	Cu, Ni
3D Interconnect Pitch	Scalable to <1μm pitch 1.6μm demonstrated 6μm in high volume production
Bond Interface Materials	Integrated metal interconnect with: SiO (TEOS, Thermal, Silane) | SiN (CVD or PECVD) | SiON (PECVD)
Substrates	Same as ZiBond
Bonding Temperature	Room Temperature
Anneal Temperature	150-300°C (application dependent)
Equipment	Industry standard wafer alignment and bonding equipment





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