



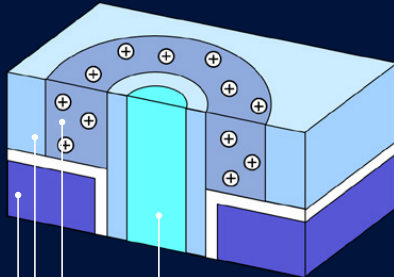
neo
semiconductor

Next Gen Memory
Technologies

3D X-DRAM™

Ultra High Capacity, Ultra High Density
World's First 3D NAND-Like DRAM Array

Floating Body Cell



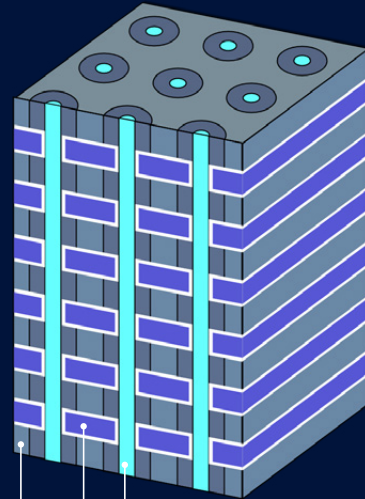
Bit Line: connects to read/write circuit.

→ **Floating Body:** stores electric charges to represent data.

→ **Source Line:** connects to ground.

→ **Word Line:** selects the cell for read/write operation.

3D NAND-like Array



→ **Vertical Bit Line**

→ **Word Line Layer**

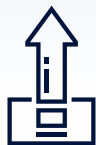
→ **Source Line Layer**

3D X-DRAM™ is an industry game-changer. It is based on floating body cell (FBC) technology, so data is stored as electric charges without capacitors. An innovative structure similar to 3D NAND flash makes 3D X-DRAM™ easier to manufacture and less expensive to scale than emerging 3D DRAM alternatives. 3D X-DRAM™ using multiple-level 3D arrays, so 8x higher capacities can be achieved using the same number of layers (230) used for 3D NAND.

Adopting 3D X-DRAM™ Technologie allows memory manufacturers to leverage their current technologies, nodes and processes to increase the density and capacity of main memory used in information technology (IT) systems and consumer products. This results in:



Higher performance
for cloud and business
systems (e.g., servers)



Smaller form factors
for consumer devices
(e.g., smartphones)



More capabilities for
edge computing devices
(e.g., routers)