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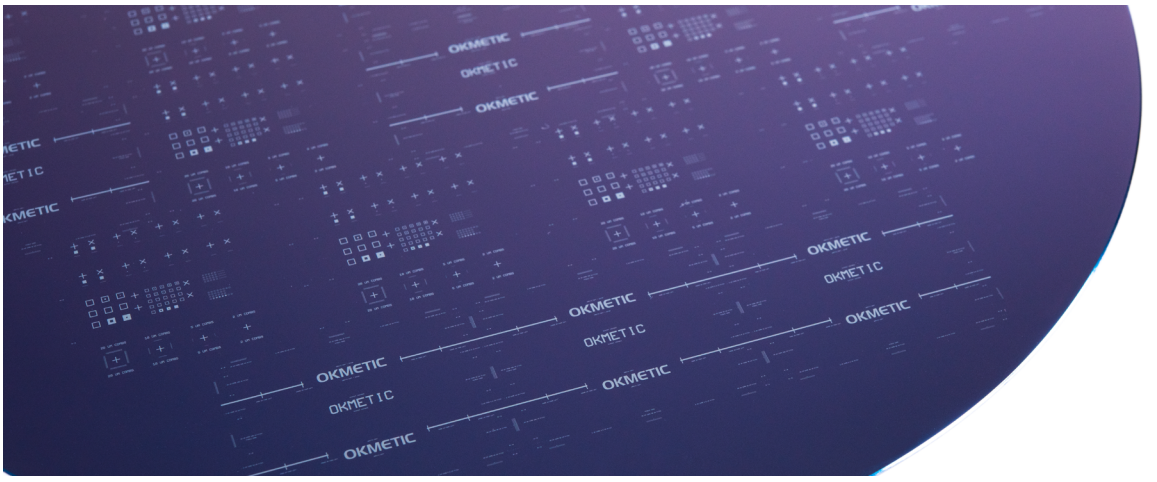

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CAVITY SOI WAFERS STREAMLINING MEMS DEVICE MANUFACTURE

Cavity SOI (C-SOI®) Wafers

- C-SOI® is a bonded SOI wafer with built-in sealed cavities, that can be considered as a partially built sensor or electronic device.
- 150-200 mm wafers with fully customizable device, handle and BOX layer. Device and handle wafer specifications can differ.
- BOX layer is an efficient etch-stop, electric insulator or sacrificial layer.
- Cavities per customer design on the handle wafer, the buried oxide or on the device layer.
- Options for poly vias (TSVs) or double C-SOI® structure.
- C-SOI® wafers in volume production since 2009.

Application Areas

Pressure and inertial sensors, ultrasonic transducers, IMUs, optical and microfluidic devices, resonators, silicon photonics and microspeakers, MEMS and IC integrations

Key Benefits:

Integrated Cavities for MEMS Structure:

Enables incorporation of movable parts like membranes and sensors directly within the wafer, allowing for complex designs.

Reduced Manufacturing Complexity and Cost Efficiency:

Minimizes additional manufacturing steps and the number of separate components, enhancing reliability and lowering production costs.

Superior Performance and Sensitivity:

Fine-tuned cavities improve overall device sensitivity and performance in high-precision devices.

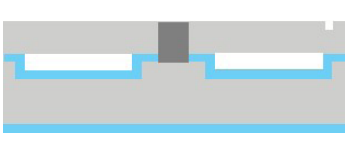
Improved Reliability and Signal Integrity:

Reduces the likelihood of mechanical failure and minimizes noise interference, ensuring consistent performance and accurate detection.

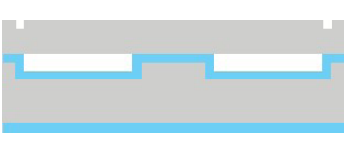
Compact Design with Higher Level of Integration:

Supports a reduced device footprint while allowing multiple functionalities on a single wafer.

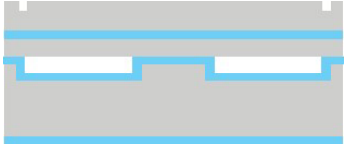
C-SOI® with patterned device layer



C-SOI® with poly via



EC-SOI



Double C-SOI®