CSOI Solutions

IceMOS Technology

Applications

Our customised SOI solutions are used in the following fields:

- Advanced pressure sensors
- Inertial MEMS
- Microfluidics
- Resonators
- Microphones

End Markets:

- Telecommunications
- Medical
- Automotive
- Consumer
- Instrumentation

IceMOS Technology is a leading supplier of 100–150mm Cavity Bonded SOI wafers for a large range of MEMS applications. By utilising years of deep silicon trench etch expertise and experience coupled with our advanced wafer bonding technology allow customer cavity expectations to be materialized into innovative products.

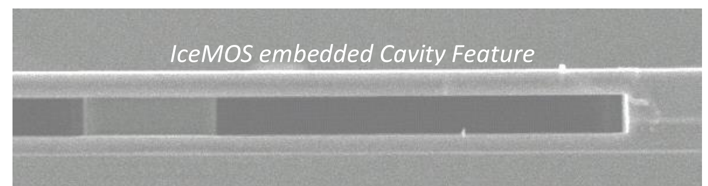
The IceMOS Cavity Bonded SOI is a pre-etched feature embedded under a silicon membrane. This provides an opportunity for the customer designers to develop more intelligent devices to meet the most demanding markets.

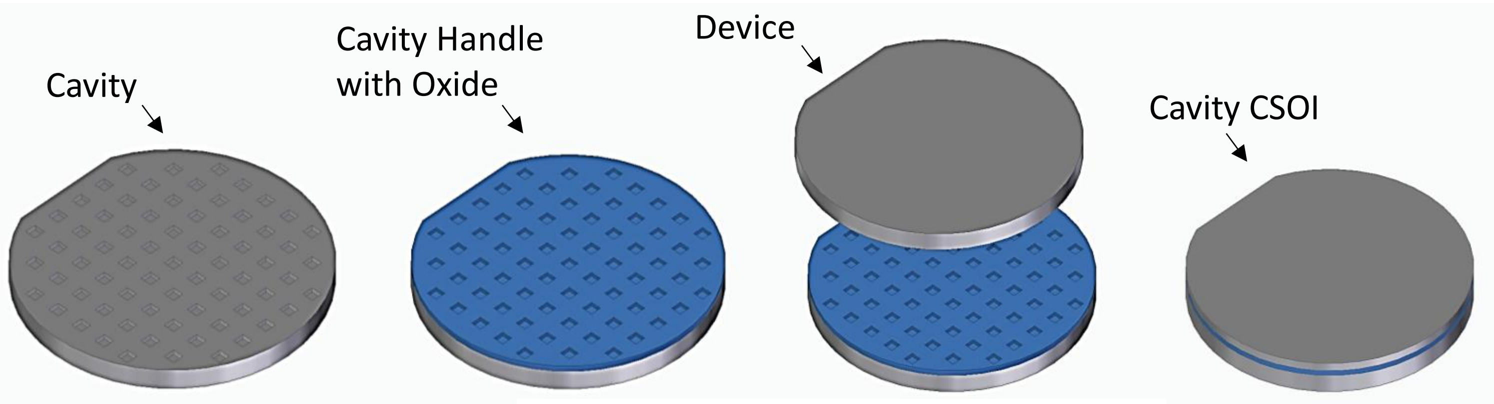
Our Cavity Bonded SOI solutions allow the customer to take advantage of –

- IceMOS' superior bonding technology and expertise.
- Reduce any stiction issues at release.
- Simplified manufacturing flows.
- Low Cost Cavity SOI/Si-Si Solutions.
- Flexibility in construction around customer needs/ downstream applications.

IceMOS can offer various methods of constructing the Cavity Bonded SOI Solutions to optimize customer cavity requirements. C-SAM and AVI inspection can be included as desired.

We also have the added advantage of incorporating advanced features into Cavity Bonded SOI solutions which potentially opens possibilities that might otherwise not have been considered.





C-SAM and AVI inspection available

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CSOI Solutions

CSOI Specification

Parameter	Specification Range
Wafer Diameter	100, 125, 150 mm
Handle Layer Specifications	
Handle Thickness	200–1100 µm
Handle Thickness Tolerance	±5 µm
Stack Thickness	280–1150 µm
Dopant Type	N or P
Doping	N type: Phos, Red Phos, Sb & As P type: Boron
Resistivity	≤0.001 – ≥10000 Ω-cm
Growth Method	CZ, MCZ or FZ
Crystal Orientation	<100>, <111> or <110>
Backside Finish	Lapped/Etched or Polished
Buried Oxide Specifications	
Thermally Oxidised Buried Oxide Thickness	0.2 – 4.0 µm grown on Handle, Device or both wafers
Device Layer Specifications	
Device Layer Thickness	≥1.5 µm
Tolerance	± 0.5 µm
Dopant Type	N or P
Doping	N type: Phos, Red Phos, Sb & As P type: Boron
Resistivity	≤0.001 – ≥10000 Ω-cm
Growth Method	CZ, MCZ or FZ
Crystal Orientation	<100>, <111> or <110>
Buried Layer Implant	N type or P type
Membrane Thickness/SOI Thickness	>2 µm
Membrane Tolerance	+/-0.5 µm
Cavity Span: Membrane Thickness	<50:1 µm (dependent on design)
Minimum Bonding Size Features	20 µm
Alignment Accuracy of Cavity to Alignment Marks	+/-3 µm
Cavity Depth	1-30 µm @ +/-10% 31-300 µm @ +/-20%
Cavity Location	Handle, Device or Buried Oxide

The above is a standard IceMOS specification; however, we are always happy to work with our customers to engineer specific solutions. If you would like to discuss an alternative specification, please contact our sales team: sales@icemostech.com

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