



# IceMOS DSOI Solutions

Cooler than Cool

## Applications:

Our customised DSOI solutions are used in the following fields:

- SOI solutions for MEMS/MST
- Bio MEMS
- RF MEMS
- Optoelectronics/MOEMS

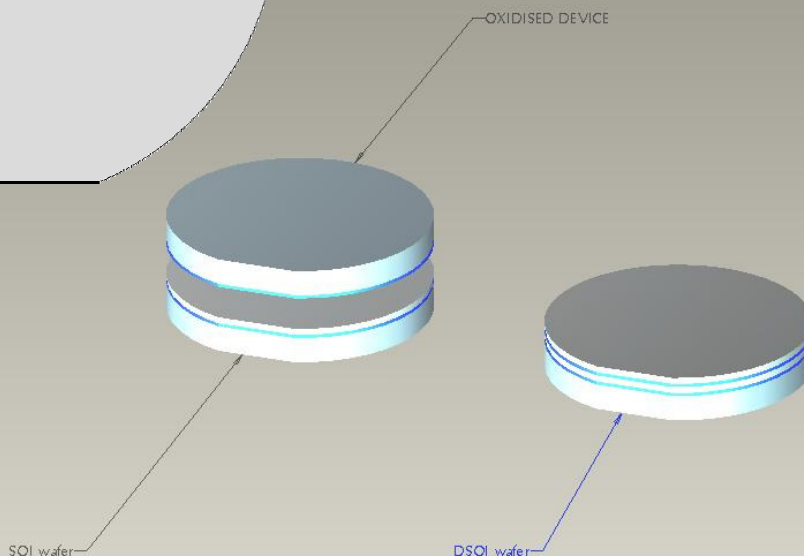
IceMOS Technology is a leading supplier of DSOI for a large range of IC and MEMS applications. With over 20 years experience in SOI manufacturing, we offer an impressive specification range, which is amongst the widest available in the market, ensuring that you receive the perfect DSOI solution for your application. We have extensive experience in SOI substrates and our applications engineering expertise can help you select the best combination of parameters to aid your processing when you get the DSOI wafers.

With a flexible approach, IceMOS allows the customer to grow from R&D production (offering small lots) to production. Our experienced MEMS process engineers have experience in optical, inertial, bio and other MEMS fields. IceMOS offer additional foundry processing for MEMS, trench, isolation, etc.

By making continuous improvements to our processes in a Lean Six Sigma environment, IceMOS Technology offer world class product quality, competitive cost structure plus rapid turnaround makes IceMOS Technology your ideal DSOI partner.

## End Markets:

- Telecommunications
- Medical
- Automotive
- Consumer
- Security



*Although this process shown is for a triple layer DSOI wafer, additional layers can also be added*



## DSOI Specification

| Parameter                                                                    | Specification Range                                                    |                        |
|------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------|
| Wafer Diameter                                                               | 100, 125, 150mm                                                        | 200mm                  |
| <b>Handle Layer Specifications</b>                                           |                                                                        |                        |
| Handle Thickness                                                             | 200–1000 $\mu\text{m}$                                                 | $\geq 400 \mu\text{m}$ |
| Handle Thickness Tolerance                                                   | $\pm 5 \mu\text{m}$                                                    |                        |
| Stack Thickness                                                              | $\geq 280 - \leq 1250 \mu\text{m}$                                     |                        |
| Dopant Type                                                                  | N or P                                                                 |                        |
| Doping                                                                       | N type: Phos, Red Phos, Sb & As<br>P type: Boron                       |                        |
| Resistivity                                                                  | $\leq 0.001 - \geq 10000 \Omega\text{-cm}$                             |                        |
| Growth Method                                                                | CZ, MCZ or FZ                                                          |                        |
| Crystal Orientation                                                          | $\langle 100 \rangle$ , $\langle 111 \rangle$ or $\langle 110 \rangle$ |                        |
| Backside Finish                                                              | Lapped/Etched or Polished                                              |                        |
| <b>Buried Oxide Specifications</b>                                           |                                                                        |                        |
| Thermally Oxidised Buried Oxide Thickness                                    | 0.2–5.0 $\mu\text{m}$ grown on Handle, Device or both wafers           |                        |
| <b>Device Layer Specifications (1<sup>st</sup> and 2<sup>nd</sup> Layer)</b> |                                                                        |                        |
| Device Layer Thickness                                                       | 1.5–300 $\mu\text{m}$                                                  | 5–300 $\mu\text{m}$    |
| Tolerance                                                                    | $\pm 0.5 \mu\text{m}$ and $\pm 1 \mu\text{m}$                          | $\pm 0.8 \mu\text{m}$  |
| Dopant Type                                                                  | N or P                                                                 |                        |
| Doping                                                                       | N type: Phos, Red Phos, Sb & As<br>P type: Boron                       |                        |
| Resistivity                                                                  | $\leq 0.001 - \geq 10000 \Omega\text{-cm}$                             |                        |
| Growth Method                                                                | CZ, MCZ or FZ                                                          |                        |
| Crystal Orientation                                                          | $\langle 100 \rangle$ , $\langle 111 \rangle$ or $\langle 110 \rangle$ |                        |
| Buried Layer Implant                                                         | N type or P type                                                       |                        |

The above is a standard IcelMOS 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](mailto:sales@icemostech.com)