

# Silicon

## for Research and Development



# Crystec

KRISTALLTECHNOLOGIE

**Growth Method:** Czochralski - technique, Floating Zone  
**Crystal Structure:** diamond, cubic  
**Density (25°C):** 2,33 g/cm<sup>3</sup>  
5,00 x 10<sup>22</sup> atoms/cm<sup>3</sup>  
**Lattice Constant:** 0,5431 nm

**Standard Orientation:** (100) ± 0,5°  
(111) ± 0,5°  
(110) ± 0,5°

**Standard Sizes/  
Standard Thickness:**

Ø 1 inch	≥ 375 µm
Ø 2 inch	275 µm
Ø 3 inch	375 µm
Ø 100 mm	525 µm
Ø 125 mm	625 µm
Ø 150 mm	675 µm

**Silicon** one- or both side epipolished  
**Silicon** with special orientation  
**Silicon** with special shape

**Silicon with other thickness**

Ø 2 inch	50 µm – 10 mm
Ø 3 inch	60 µm – 10 mm
Ø 100 mm	100 µm – 10 mm

### Physical Properties:

**Boron – doped, p – type**  
0,1...20 Ωcm, 20...60 Ωcm,  
> 100 Ωcm

**Boron – doped, p – type**  
0,005...0,020 Ωcm

**Phosphorus – doped, n – type**  
0,1...10 Ωcm, 10...50 Ωcm,  
> 100 Ωcm

**Arsenic – doped, n – type**  
0,008...0,020 Ωcm

**Antimony – doped, n – type**  
0,001...0,007 Ωcm

**Floating Material**  
undoped, p /n – type  
> 1000 Ωcm  
With spec. Resistance  
> 5000 Ωcm

**Thermal Oxidation**  
Ø 2 inch, Ø 3 inch and Ø 100 mm with:

50 nm, 300 nm, 600 nm, 1000 nm Oxide

**Nitridefilms**  
Ø 2 inch, Ø 3 inch and Ø 100 mm with:

10 nm Oxide, 50 nm...200 nm Si<sub>3</sub>N<sub>4</sub>

► Special orientations including off orientations, other sizes, thicknesses and both sides polished wafers on request.