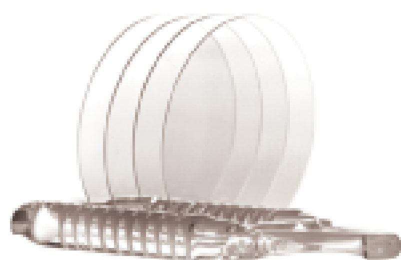
# シリコンカーバイドウエハー (SiC Wafer)

## SIC 物理的特性



Semi-insulating

N-type

### ▶ Product Specifications

Silicon Crbide single crystal substrates 4H N-type and 4H Semi-insulating

### ▶ Physical Properties

| polytype | 4H-SiC |
|---|---|
| Crystal Structure | Hexagonal |
| Bandgap | ~3.2eV |
| Thermal Conductivity | ~4.9W/cm · K |
| Electronic mobility | ~1140cm$^2$/V· s |
| Lattice Parameters | a~3.073Å c~10.053 Å |
| Mohs Hardness | ~9.15 |

### ▶ Applications

SiC homoepitaxy: High-Power Devices, High-Temperature Devices
GaN hetero-epitaxy: High luminance LED, High-Frequency Microwave Devices, Radar and Satellite Communications etc.
Graphene

SICC

OSTECH

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# 標準仕様

## ▶ Diameter

The linear dimension across the surface of a wafer. Measurement is performed manually with digital calipers on each individual wafer (See Figure 1).

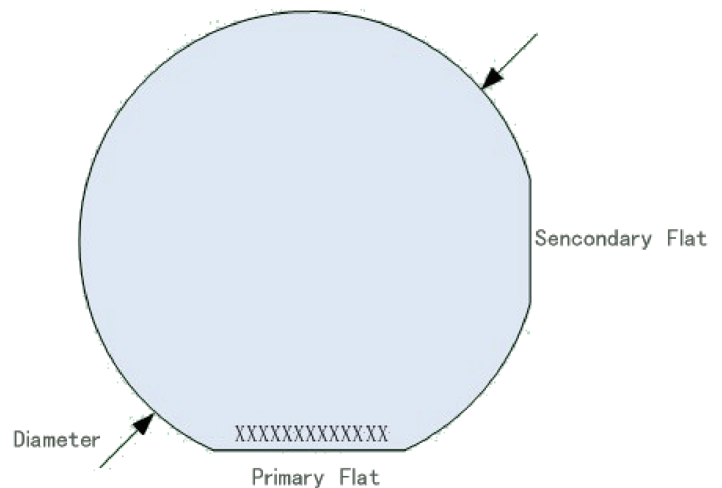


Figure 1. Diameter, Primary and Secondary Flat Locations, and Marking Orientation, Carbon Face Up for Silicon Face Polished Wafers.

## ▶ Thickness, Center Point

Measured with non-contact tools at the center of each individual wafer.

## ▶ Surface Orientation

Denotes the orientation of the surface of a wafer with respect to a crystallographic plane within the lattice structure. Measured with x-ray goniometer on

## ▶ Primary Flat

The primary flat is the {10-10} plane with the flat face parallel to the <11-20> direction.

## ▶ Primary Flat Orientation

The flat of the longest length on the wafer, oriented such that the chord is parallel with a specified low index crystal plane.

## ▶ Secondary Flat Orientation

A flat of shorter length than the primary orientation flat, whose position with respect to the primary orientation flat identifies the face of the wafer.

## ▶ Laser Marking

For silicon face polished material, the carbon face of each individual wafer is laser marked (See Figure 1).

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