

## CZ/MCZ-Si Wafer Specification

### General

Crystal type	Monocrystalline
Growth method	CZ / MCZ
Type / Dopant	P-type / Boron/Gallium
Surface orientation	$\langle 100 \rangle \pm 2.5^\circ$
Sides orientation of pseudo-square	$\langle 001 \rangle$

### Electrical characteristics

Resistivity ( $\Omega \cdot \text{cm}$ )	0.5-3.0, 3.0- 6.0
Lifetime ( $\mu\text{s}$ )	> 10

### Chemical characteristics

Carbon content (atoms/ $\text{cm}^3$ )	$\leq 1.0 \times 10^{17}$
Oxygen content (atoms/ $\text{cm}^3$ )	$\leq 1.0 \times 10^{18} \leq 8 \times 10^{17}(\text{MCZ})$

### Dimensions

Wafer square side (mm)	125 x 125 $\pm$ 0.5	156x156 $\pm$ 0.5
Wafer diameter (mm)	150 $\pm$ 0.5	203/200/195 $\pm$ 0.5
Square sides angle	$90^\circ \pm 0.3^\circ$	
Wafer thickness ( $\mu\text{m}$ )	200 $\pm$ 20/180 $\pm$ 20	
Dislocations ( $\text{cm}^{-2}$ )	$\leq 3000$	
TTV (5 points) ( $\mu\text{m}$ )	$\leq 50$	
Bow/Warp ( $\mu\text{m}$ )	$\leq 50$	
Saw marks ( $\mu\text{m}$ )	$\leq 20$	
Edge defect	not allowed	
Micro-cracks	not allowed	

### Micellaneous

Wafer surface as cut, cleaned. No scratches, chips, cracks, or customer request

Contamination no dirt / oil stain, remains of soap / glue