



JHPVTECH

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P-M10 Monocrystalline Wafer

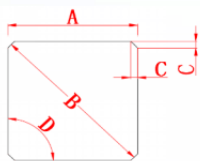
Comprehensive system certification

ISO 9001:2015

ISO 14001:2015

OHSAS 18001:2018

Schematic diagram of wafer size



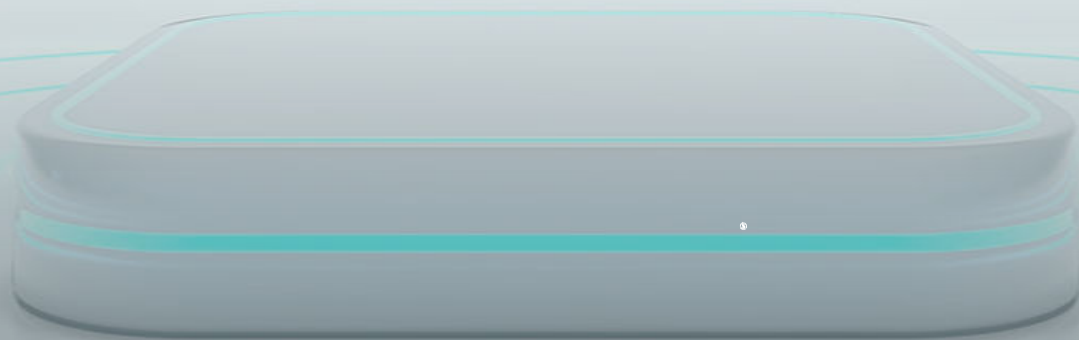
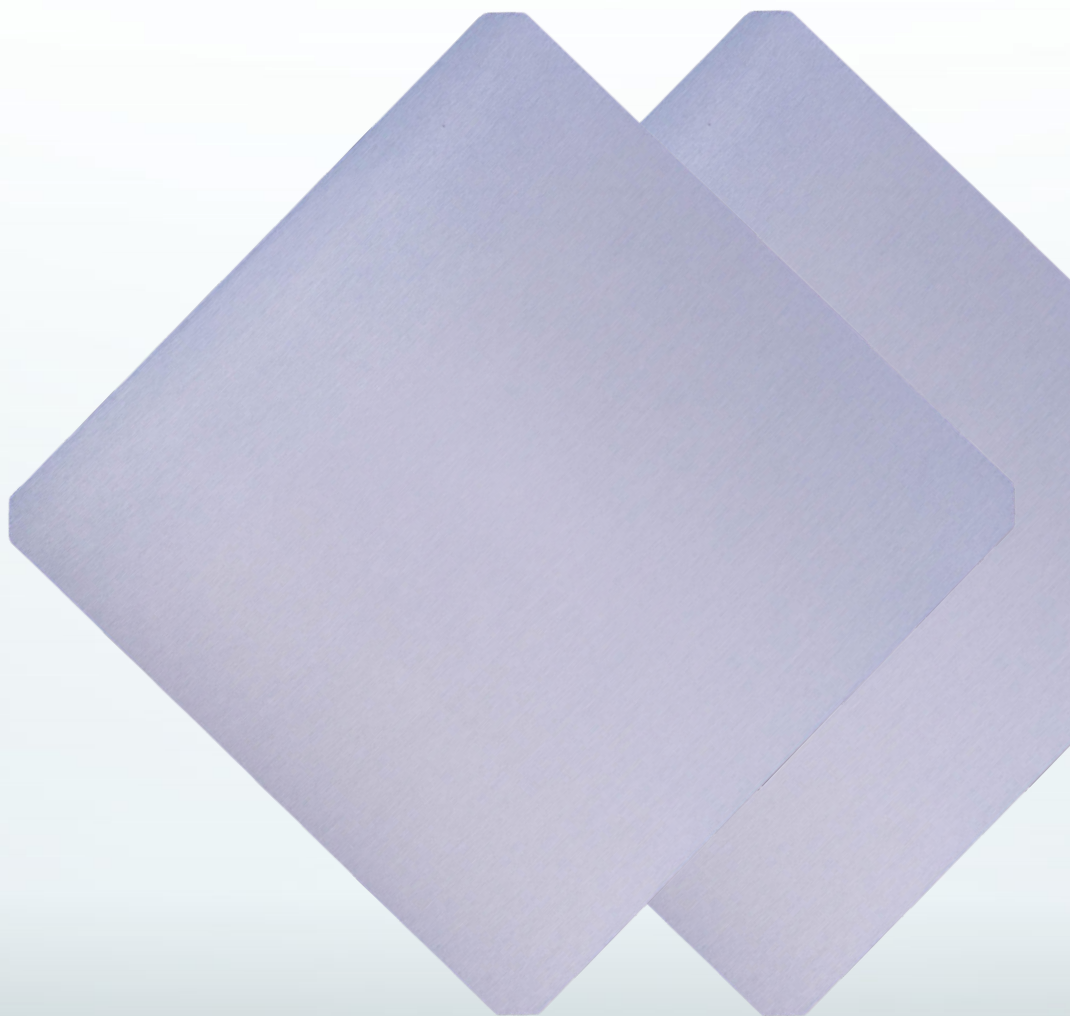
Size:M10

A:182.2±0.25mm

B:φ247±0.25mm

C:7.72±0.5mm

D:90±0.15°



Monocrystalline Wafer Specification

P-type M10

Key parameters

Conductivity type	P-type	P/N type tester(DLY-2 P/N)
Dopant	Ga.	--
Resistivity/ $\Omega\cdot\text{cm}$	0.4-1.1	Wafer inspection system
MCLT(Minority carrier lifetime)/ μs	≥ 70	Transient with injection level: $5\text{E}14\text{cm}^{-3}$ (Sinton BCT-400)
Oxygen concentration [Oi]/at/ cm^3	$\leq 7.5\times 10^{17}$	FTIR(ASTM F121-83)
Carbon Concentration [Cs]/at/ cm^3	$\leq 5.0\times 10^{16}$	FTIR(GB/T 1558-2009)

Material properties

Growth method	CZ	--
Crystallinity	Monocrystalline	--
Etch pit density (dislocation density)/pcs/ cm^2	≤ 500	Preferential Etch Techniques(ASTM F47-88)
Surface orientation/ $^\circ$	$\langle 100 \rangle \pm 3$	X-ray Diffraction Method (ASTM F26-1987)
Orientation of pseudo square sides/ $^\circ$	$\langle 010 \rangle, \langle 001 \rangle \pm 3$	X-ray Diffraction Method (ASTM F26-1987)

Geometric dimensions and surface properties

Wafer model	M10	--
Geometry	Pseudo square	--
Bevel edge shape	Round	--
Wafer Side length/mm	182.2 ± 0.25	Wafer inspection system
Wafer Diameter/mm	$\phi 247\pm 0.25$	Wafer inspection system
Arc length projection/mm	7.72 ± 0.5	Wafer inspection system
Angle between adjacent sides/ $^\circ$	90 ± 0.15	Wafer inspection system
Thickness/ μm	150 ± 10	Wafer inspection system
Batch mean/ μm	$\geq 150 \quad \geq 140$	Wafer inspection system
Total thickness variation/ μm	≤ 23	Wafer inspection system
Saw marks/ μm	≤ 13	Wafer inspection system
Bow/ μm	≤ 40	Wafer inspection system
Warp/ μm	≤ 40	Wafer inspection system
Cutting method		--
Surface quality	as cut and cleaned, no visible contamination, color difference (as determined by standard sample) (oil or grease, finger prints, spot stains, epoxy/glue residue are not allowed)	Wafer inspection system
Chip	depth $\leq 0.3\text{mm}$ & length $\leq 0.5\text{mm}$,Max 1/pcs, no V-chip	Naked eyes or wafer inspection system
Micro cracks / holes	Not allowed	Wafer inspection system