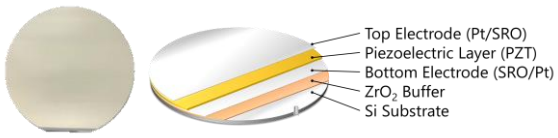
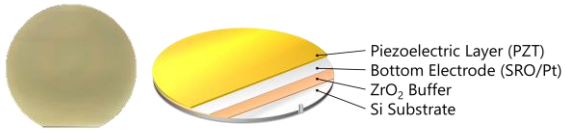
KRYSTAL Wafer
Standard Products

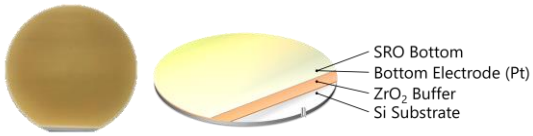
KRYSTAL® Wafer

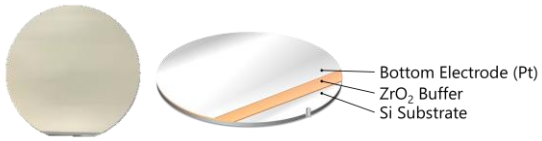
Superior wafers for piezoelectric MEMS, that can be single-crystallize PZT to be deposited by using our original ZrO2 Buffer.
Compared to general piezoelectric thin films, KRYSTAL® Wafer shows superior electrical and mechanical properties.

The specifications for the standard product are as follows:

PZT with Top Electrode Wafer (Actuator Type)	Layer Structure	8-inch Standard	6-inch Standard	4-inch Standard
	Top Pt	100nm (Target)	100nm (Target)	100nm (Target)
	Top SRO	10nm (Target)	10nm (Target)	10nm (Target)
	PZT	2000nm ±10%	2000nm ±10%	2000nm ±10%
	Bottom SRO	40nm ±10%	32.5nm ±10%	32.5nm ±10%
	Bottom Pt	150nm ±10%	104nm ±10%	104nm ±10%
	ZrO2	60nm ±10%	7nm ±15%	7nm ±15%
	Si (100 or 111)	725μm	625μm	525μm

PZT Wafer (Actuator Type)	Layer Structure	8-inch Standard	6-inch Standard	4-inch Standard
	–	–	–	–
	–	–	–	–
	PZT	2000nm ±10%	2000nm ±10%	2000nm ±10%
	Bottom SRO	40nm ±10%	32.5nm ±10%	32.5nm ±10%
	Bottom Pt	150nm ±10%	104nm ±10%	104nm ±10%
	ZrO2	60nm ±10%	7nm ±15%	7nm ±15%
	Si (100 or 111)	725μm	625μm	525μm

Bottom Electrode SRO/Pt Wafer	Layer Structure	8-inch Standard	6-inch Standard	4-inch Standard
	–	–	–	–
	–	–	–	–
	–	–	–	–
	Bottom SRO	40nm ±10%	32.5nm ±10%	32.5nm ±10%
	Bottom Pt	150nm ±10%	104nm ±10%	104nm ±10%
	ZrO2	60nm ±10%	7nm ±15%	7nm ±15%
	Si (100 or 111)	725μm	625μm	525μm

Bottom Electrode Pt Wafer	Layer Structure	8-inch Standard	6-inch Standard	4-inch Standard
	–	–	–	–
	–	–	–	–
	–	–	–	–
	–	–	–	–
	Bottom Pt	150nm ±10%	104nm ±10%	104nm ±10%
	ZrO2	60nm ±10%	7nm ±15%	7nm ±15%
	Si (100 or 111)	725μm	625μm	525μm

ZrO2 Buffer Wafer	Layer Structure	8-inch Standard	6-inch Standard	4-inch Standard
	–	–	–	–
	–	–	–	–
	–	–	–	–
	–	–	–	–
	–	–	–	–
	ZrO2	60nm ±10%	7nm ±15%	7nm ±15%
	Si (100 or 111)	725μm	625μm	525μm

If you have any further questions, please contact our sales representatives.

Contact: I-PEX Piezo Solutions Inc. Yokohama office (TEL: +81-45-472-7111)
Shin-Yokohama Square Bldg., 11F, 2-3-12, Shin-Yokohama, Kohoku-ku, Yokohama-city, Kanagawa, 222-0033, JAPAN

KRYSTAL Wafer
Description of Conditions

Date : 2026/Jan/20

Unless otherwise specified, the “Description of Conditions” shall be applied.

■Base Wafer for Deposition

If bare Si wafers prepared by IPS are used as deposition base wafers, the orientation flat of (110) specified by JEITA is used as a standard.

■Custom Deposition Services

In addition to standard deposition on Si wafers, we also provide custom deposition services,
Deposition of custom thicknesses, deposition on wafers supplied from customers, and deposition on SOI wafers.

※Important Notes Regarding Custom Deposition Services:

Contaminants, scratches, and organic residues on the substrate surface will affect film deposition quality. Therefore, please ensure the provided substrate is clean.

If any concerns are identified on the substrate surface during our incoming inspection, we may request cleaning at the customer’s expense prior to film deposition.

(Substrate cleaning generally requires RCA cleaning, or scrub cleaning + RCA cleaning depending on the substrate condition.)

During our substrate incoming inspection, substrate conditions are verified using UV light; however, detecting organic contamination can be difficult in some cases.

Therefore, please be advised that even if quality abnormalities suspected to be caused by organic contamination are detected during appearance inspections or crystallinity tests after film deposition, we will proceed with delivery after reporting these findings to the customers.

If depositing on new-specification SOI wafers are required, one additional SOI wafer must be prepared for initial condition setup, separate from the wafers to be delivered.

Depending on the specifications of the SOI wafer, multiple wafers may be required for condition setting.

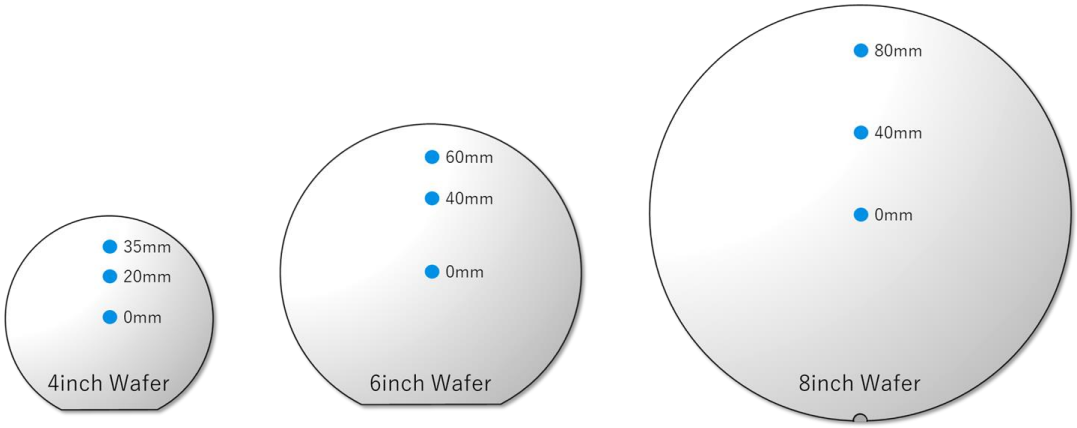
In such cases, we will review the deposition results from the first wafer and discuss the next steps with customers.

■Specifications and Inspection Methods

Items	Specifications	Inspection Method
Single-crystal Ratio (Orientation ratio)	96 % or more Single crystal ratio calculation formula : PZT(001)Int./(PZT(001)Int.+PZT(110)Int.)	Three points* are measured by XRD
Film thickness	As described in the separate Spec. Sheet.	Three points* are measured by XRF
Appearance	No particles of 100 μm or larger	Appearance inspection by visual & microscope

*Example of three points mesurement on the wafers
Described by R dimension from the center of the wafer

XRD: X-ray Diffractometer
XRF: X-ray Fluorescence Analyzer



■Handling of wafers

In the standard wafer handling method in the IPS manufacturing process, the backside of the wafer is picked up and handled with vacuum tweezers during wafer transfer.

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