

# Single-side-polished synthetic quartz wafers

## VIOSIL-SQ, SX, LSX

Shin-Etsu's single-side-polished synthetic quartz wafers are products that lord presence sensor can detect in usual semiconductor apparatuses thanks to rough surface of the wafer's back side. Semiconductor manufacturing process usually requires reduction of metallic impurity and particle contamination, so Shin-Etsu supplies high purity and low particulate emission wafers by adjusting back side surface quality. Other properties, including flatness, are almost equivalent to the double-side-polished synthetic quartz wafers.

Shin-Etsu's synthetic quartz glass (VIOSIL) has three material grades, VIOSIL-SQ, -SX and -LSX, as different OH concentrations. VIOSIL-SQ concludes 300~1000 ppm OH, VIOSIL-SX concludes under 100 ppm OH, while VIOSIL-LSX concludes under 15 ppm OH. Generally, the lower OH concentration it has, the higher heat resistance.

Please choose a material according to application.

### Features

- Detectability of lord sensor : We can adjust roughness of back side surface depending on kinds of sensors.
- High purity : Concentration of metallic impurity: internal  $\leq 1\text{ppb}$ ; polished surface  $\leq 1 \times 10^{10}$  atoms/cm<sup>2</sup>
- Low particulate emission : Back-side-surface can be controlled for reduction of particulate emission.
- Low thermal Expansion : Synthetic Quartz offers high stability when exposed to temperature variations.
- High flatness : Example of performance of  $\phi 8$  inches wafer substrate: SORI  $\leq 20\mu\text{m}$ , TTV  $\leq 3\mu\text{m}$

SORI : The total of the distance from a least square plane of the highest point and the lowest point in the wafer surface

TTV : Total Thickness Variation

※Specification can be customized for each customers.



Figure 1 Image of Shin-Etsu's single-side-polished synthetic quartz wafer

## Flatness

Example of flatness map :  $\phi 8$  inches wafer.

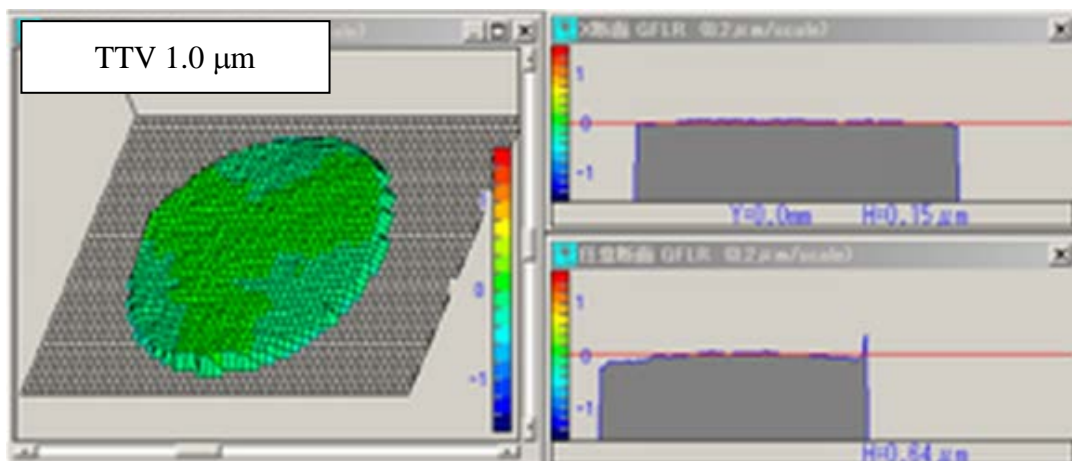


Figure 2 Flatness map of single-side-polished synthetic quartz wafer

Shin-Etsu can supply various size wafers ( $\phi 4$  inches,  $\phi 6$  inches,  $\phi 8$  inches).

Feel free to contact us with any requests.

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