HIGH-PERFORMANCE CERAMICS

GUIDE PLATES FOR PROBE CARDS



Application:
Manufacturing of probe cards for the semiconductor industry

Material:
Silicon nitride Starceram N3000 P

Guide plates made of Kyocera's silicon nitride Starceram N3000 P have an important role in testing the functionality of microchips. The material offers an excellent combination of mechanical, thermal and electrical characteristics.

High flexural strength combined with outstanding thermal shock resistance facilitates highly precise laser processing. These outstanding features allow the production of very thin plates with extremely small wall thicknesses between thousands of small holes in the plate, through which the contact pins of the microchips are guided.

The comparable coefficient of thermal expansion to silicon wafers guarantees flawless interaction with first-class precision and high efficiency.

Depending on the requirements, standard dimensions up to a maximum size of 230x230mm are available in two surface finishes – a polished, smooth version with a roughness value Ra of < 0.4µm and a matt version with an Ra value of < 0.3µm.

Special machining methods for our guide plates enable us to achieve close tolerances for plate thickness and flatness. Thicknesses of down to 100µm can be achieved for polished plates.

Kyocera ensures the quality of its silicon nitride plates with extensive testing. A test card can be used to test millions of microchips.

- **Excellent flexural strength even at high temperatures**
- **Electrically insulating**
- **Extremely limited porosity**

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