

CASE STUDY



Siltronic, Germany

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PRODUCT

450 mm wafers

Micro- and nanoelectronic components are manufactured onto silicon semiconductor wafers, the diameter of which has increased from just a few millimeters to 300 mm. Manufacturers around the world are taking the next step toward increasing productivity – making 450 mm wafers, doubling the surface area available for components, significantly increasing yields and reducing manufacturing costs.

LMJ used for:

- Cutting of smaller diameters in a 450 mm Wafer
- Chamfer cutting



CHALLENGE

High flexibility

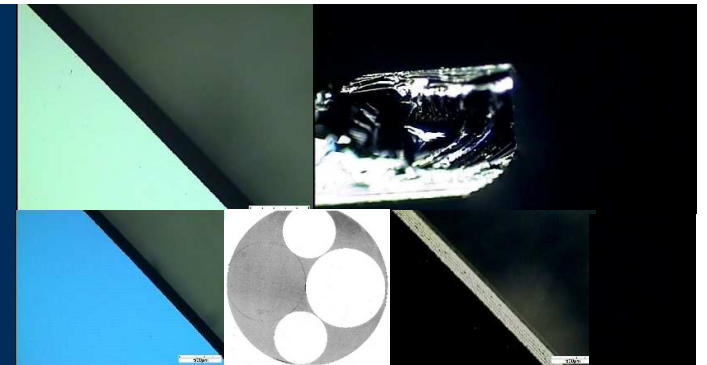
450 mm wafers have to be downsized to 300- and 200-mm wafers, without any impact onto the material

Main processing criteria:

- Vertical cut edges
- No reduction in strength
- No chipping
- No contamination
- Low roughness
- Possibility of edge chamfering

Machining technologies able to reach these criteria:

- Grinding
- Laser MicroJet (LMJ) - water jet guided laser technology



SOLUTION

No HAZ, production-proven, better ROI

LMJ advantages versus grinding:

- Faster, higher yield
- No mechanical stress
- High flexibility in the shape
- High stability

Installed machine type:

- 1 x LDS 450
- 100 W green laser



LDS 450

