CASE STUDY

ABB
Power and productivity for a better world™

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Semiconductors case-01 Date: 25.08.2020

PRODUCT

Power Semiconductor Devices (IGBT-GTO)

High power components

Monolithic single die concepts

LMJ used for:
- Thick silicon wafer downsizing

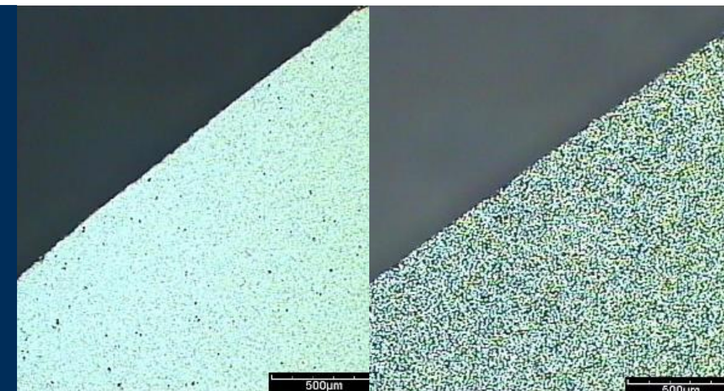
CHALLENGE

Gentle, precise, and fast processing for large inline production

Cutting 0.32-1.8mm thick wafers

Main processing criteria:
- Low/no cracks or chipping
- Low contamination
- High throughput requisite
- Low consumable costs
- Controlled edge quality

Machining technologies able to reach these criteria:
- Grinding
- Laser MicroJet (LMJ) - water jet guided laser Technology



SOLUTION

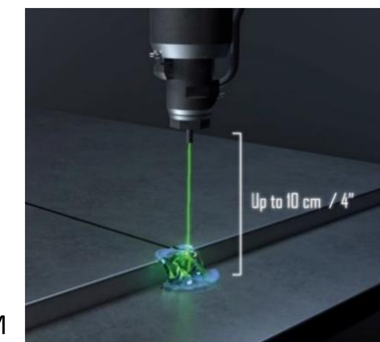
Fact, clean, flexible – Ready for production

LMJ advantages versus grinding:

- Much better edge quality
- Much less chipping and cracks: higher fracture strength
- Any shape possible (incl. flat or notch)

Installed machine type:
- 4 x LDS 300-M
- 100 W green laser

LDS 300-M



Sources: ABB websites, Synova