# CASE STUDY

## Mitusbishi Electric, Japan

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PRODUCT

### IGTB power chips (thin SiC wafers)

Power devices are a key component in power electronics products for traction, industrial equipment, building facilities, electric vehicles, renewable energies, home appliances.

The material characteristics of SiC have led to a dramatic reduction in power loss and significant energy savings for power electronics devices.

LMJ used for:

- Edge grinding
- Edge trimming

CHALLENGE

### Perfect cut on a brittle material

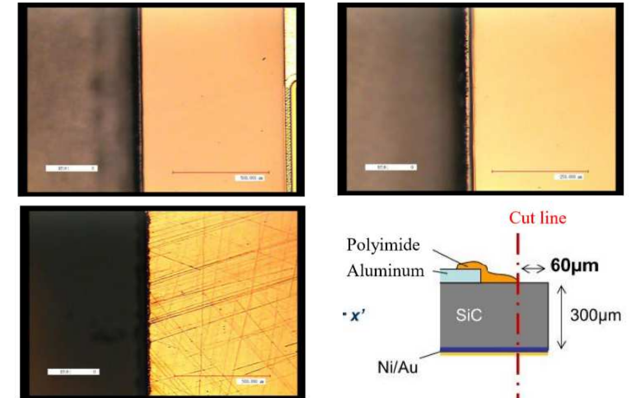
**Silicon Carbide** is a challenging material to cut because it is very hard and brittle

Main processing criteria:

- No chipping
- No burrs
- High fracture strength
- Narrow kerf width
- No contamination
- Free of HAZ
- Low roughness

Machining technologies able to reach these criteria:

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




SOLUTION

### No HAZ, no impact on strength, better yield

LMJ advantages:

- Improved yield
- No heat damages
- No reduction in fracture strength
- Easy integration

Installed machine type:

- 1 x LMJiP
- 100 W green laser

LMJiP

Sources: Mitsubishi websites, Synova