Lasertec

PRESS RELEASE

Lasertec Corporation
2-10-1 Shin-yokohama, Kohoku-ku, Yokohama
(Code 6920 / Tokyo Stock Exchange, 1st Section)

Lasertec Launches New Bump Inspection and Measurement System WASAVI Series BIM300

Yokohama, Japan, November 13, 2014 – **Lasertec Corporation** today announced that it has launched BIM300, a new WASAVI series system that enables the inspection and measurement of bump shapes and wafer peripheries. Lasertec starts accepting orders from customers this month.

【Description】

In an effort to make higher performance semiconductor devices, the commercial production of 3DICs with through silicon vias or TSVs is being explored in parallel to efforts of further device scaling through miniaturization. In 3D device manufacturing process, it is necessary to maintain via reveal, bump dimensions and bump shapes on wafer surface as uniform as possible for stable bonding between layers. In order to increase production yield, it is important to be able to accurately measure the height, diameter and shape of each bump to help control these parameters. Although bumps have been used for some time, today's most advanced 3D devices use much smaller bumps than before, and it is necessary to measure bump dimensions in about 0.1µm accuracy.

In 3D device manufacturing, it is also necessary to grind each wafer much thinner than the conventional wafer to keep the distance between layers as short as possible. This will facilitate high integration to ensure low energy consumption and high speed. Grinding wafers thinner, however, increases the risk of cracked or broken chips in wafer's peripheries. It is therefore important to have the capability to inspect the peripheries of ground wafers for process control purposes.

Among the layering methods of chip-on-chip (COC), chip-on-wafer (COW) and wafer-on-wafer (WOW), the productivity becomes higher in this order because the size of bonding area becomes larger in this order. However, the requirement for the uniformity of via reveal, bump dimensions and bump shapes becomes more severe as the size of bonding area becomes larger - it is therefore the most severe for WOW, followed by COW, and the least severe for COC. Besides, the requirement to reduce cracked and broken chips is higher for WOW and COW.

WASAVI series BIM300 addresses these requirements and needs. It combines a high-precision XY stage with Lasertec's core technologies accumulated through many years of experience with industrial laser microscopes. BIM300 achieves high resolution observation on wafer surface and high precision measurement of via reveal and of bump dimension and shape.

BIM300 is a useful inspection and measurement tool that facilitates bump forming process optimization, wafer periphery inspection and wafer grinding process optimization. The measurement of through glass via (TGV) plating patterns is another application where BIM300 can be used effectively.

【Applications】

- Measurement and inspection of bump's height, width and shapes in TSV process
- Observation and inspection of the peripheries of ground wafers for bonding, grinding process optimization and management
- Observation and measurement of particles, grinding traces and others on wafer surface

【Specifications】

✧ Dimensions (approximate): 1,450mm (width) x 2,800mm (depth) x 2,100mm (height)
✧ Applicable wafer size: up to 300mm

About Lasertec:

Lasertec has been providing customers with inspection and metrology tools based on innovative and creative technologies in semiconductor, FPD and photovoltaic industries since 1962. Lasertec's global support infrastructure assures customers that Lasertec tools always contribute to R&D, pilot and/or mass production to make sure customers maximize the capital investment. For more information, go to: www.lasertec.co.jp.

Media Contact:
Hiroshi Asai, General Manager, Corporate Planning Office
Phone: +81-45-478-7127
http://www.lasertec.co.jp