Lloyd Doyle

VERSALEA

2D/3D BUMP INSPECTION SYSTEM

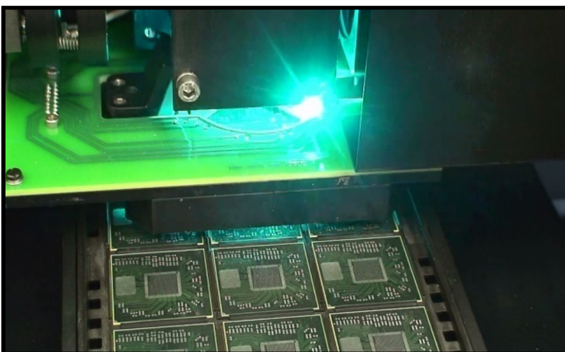
VERSALEA 2D/3D bump inspection system

VERSALEA is a brand new production tool designed to quickly and accurately scan and measure solder bumps on IC substrates and wafers. It is a green light interferometer based system which ensures it provides measurements of the highest order. It is suitable for scanning a variety of samples including 300mm silicon wafers.

VERSALEA uses white light interferometry and CCD sensors to gain digital images of the device under inspection. Massively parallel digital signal processing technology is then used to analyses the image data at speeds far beyond competing systems resulting in a system which can be used for 100% measurement of bumps at production volumes.

The 2D inspection sub-system primarily reports on bump position, bump diameter and gross defects such as short circuits, missing bumps and additional bumps.

The 3D inspection sub-system concerns itself with bump height metrology including 100% bump height measurement with a resolution of 0.05µ and repeatability at 3σ level of better than 1.0µ. *VERSALEA* will characterise the co-planarity of the bumps on the specimen so that any non co-planar bumps are identified before subsequent processes thus increasing product yields.



VERSALEA provides the most accurate metrology at the highest speed and can be configured for panel, JEDEC tray or wafer scanning

A detailed specification appears overleaf

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2D/3D BUMP INSPECTION SYSTEM

Specification

VERSALEA can be configured to scan IC substrates presented in JEDEC trays or wafers with additional handling options

System resolution for 3D application is 0.05µ

Pixel size for 2D application is 8.75µ

Repeatability at 3σ level is better than 1.0µ

Absolute accuracy is determined by He/Ne laser. Automatic self-calibration eliminates system errors

Field of view 15mm x 20mm per step

Scan time for 24 piece JEDEC tray with 3000 bumps per piece is approximately 50 seconds.

Scan time for 300mm wafer is from 2 minutes upwards

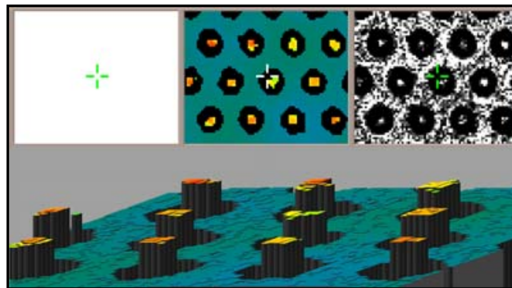
Faults reported:

- Bump height
- Bump diameter
- Coplanarity
- Position
- Mis-shaped bump
- Missing bump
- Warpage
- Foreign matter/debris

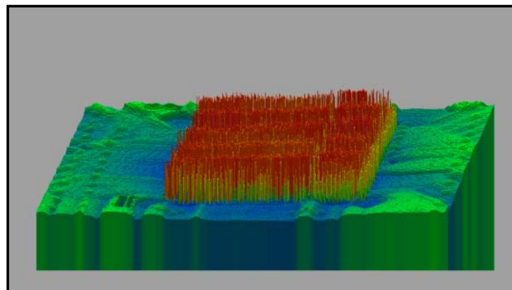
Can be used with coined or non-coined bumps

System will accept Gerber 274X for reference data

Output from system can be data file to drive downstream processes or graphical display to suit application.



Power supply	500W
Weight	750kg
Size (WxDxH)	1.8m x 1.3m x 1.25m



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