

New Flying Probe Tester for Probe Cards

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Background

With semiconductor becoming more sophisticated, technological advances of multi-channel and high-density substrates used on probe card is increasing significantly.

Following this trend, high probing accuracy on pad size less than 30um of logic probe card and fine pitch less than 100um of memory probe card are necessary respectively, meanwhile lessening test cycle time is being required as well.

Issues/Requirements

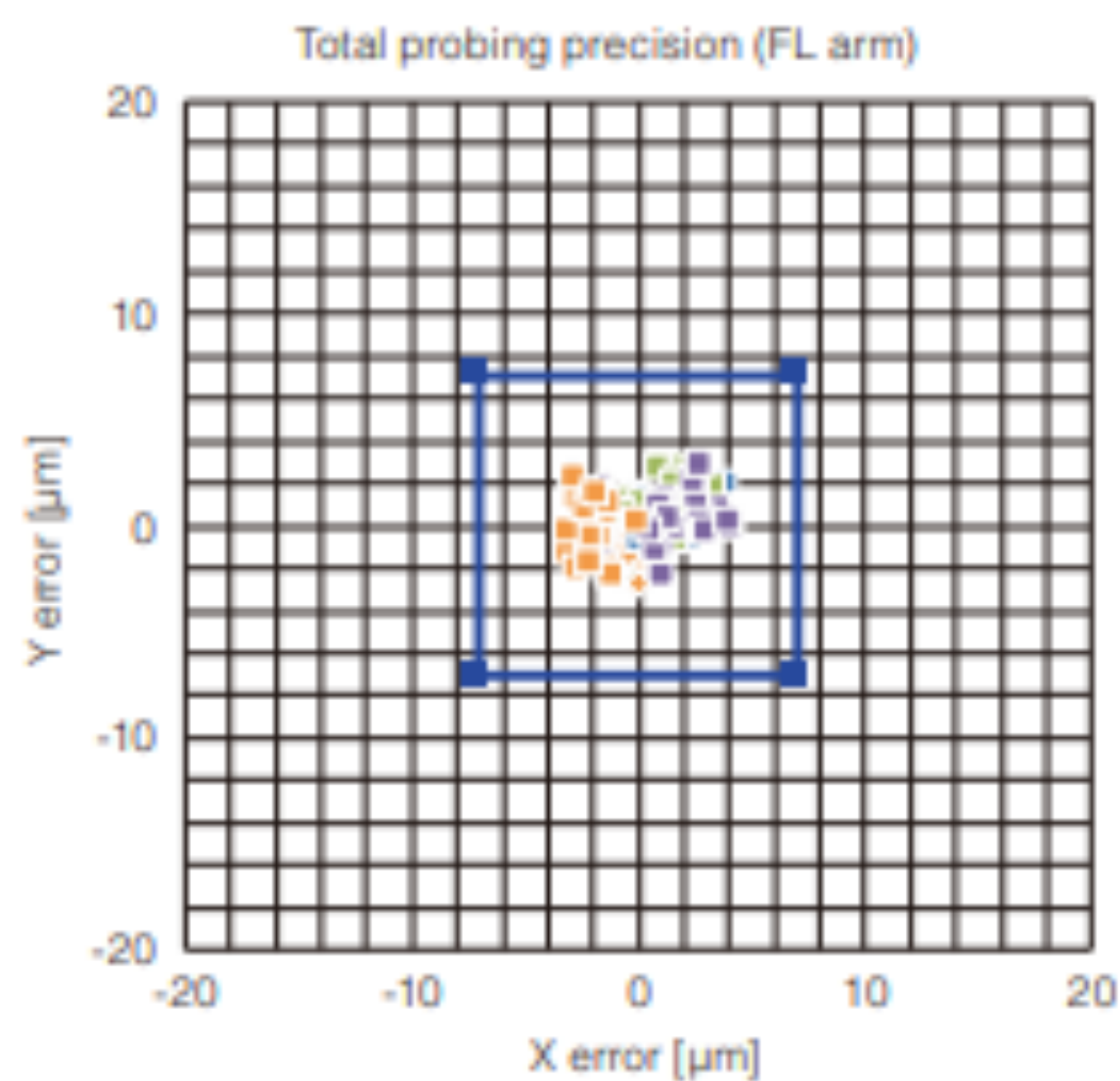
- Current 4-wire low-resistance test while securing reliable contacting by Kelvin probe is limited to pad size less than 50um of substrates used on logic probe cards.
- As to substrate used on memory probe card, test cycle time likely to be more than 24 hours in some extreme cases, therefore, lessening test cycle time as well as probing on fine pitch circuit trace are required.
- Insulation test supporting 100GΩ/10V is expected for analysis purpose.



Model FA1815-20

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High reliability due to high probing precision



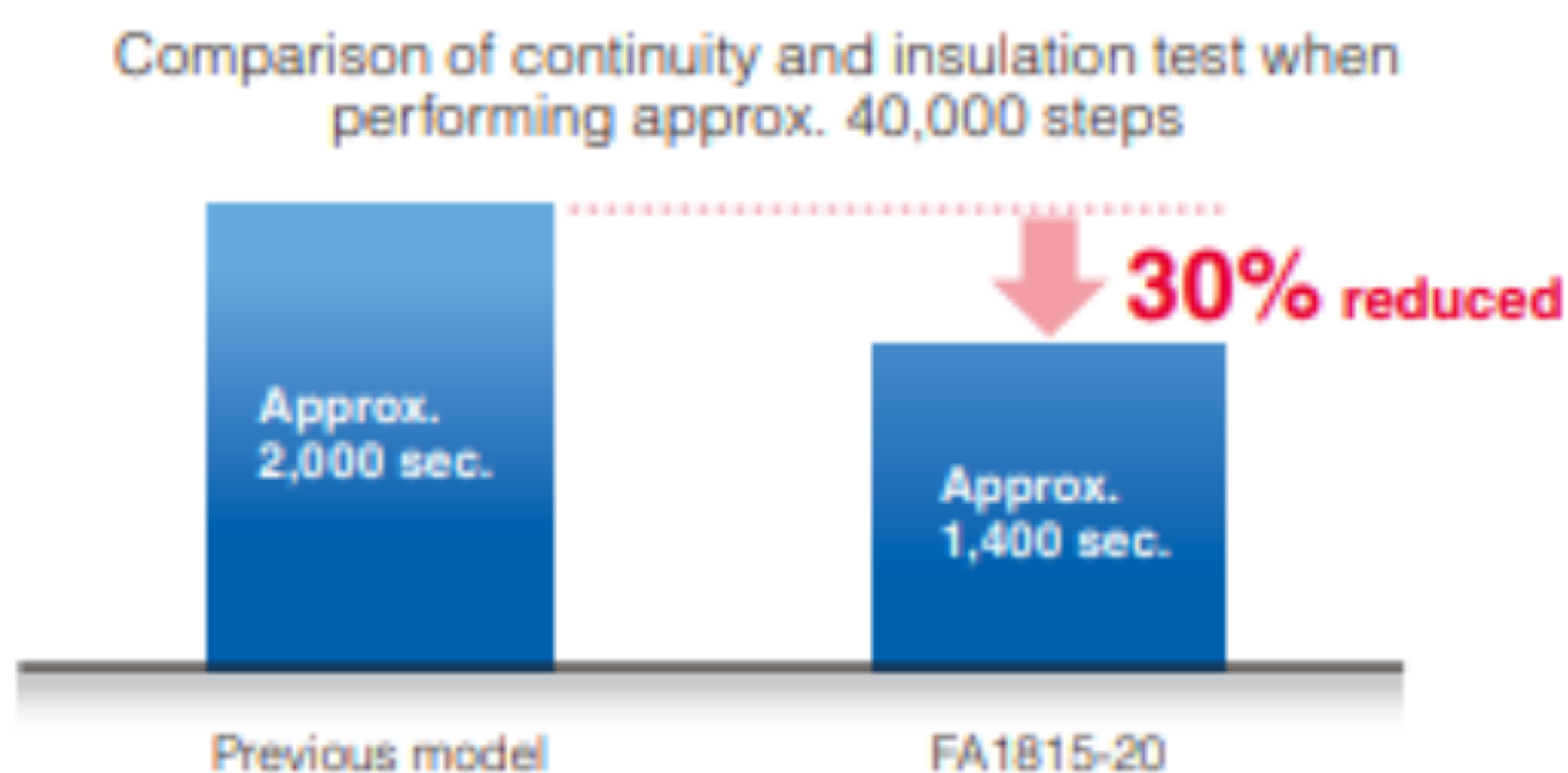
As boards become denser, the need for accurate contact at smaller pitches is increasing. The FA1815-20 achieves high probing accuracy through integrating software enhancements in feedback control with a hardware redesign focused on increased parts rigidity.

Minimum pitch: 47μm

Minimum pad size: 30μm

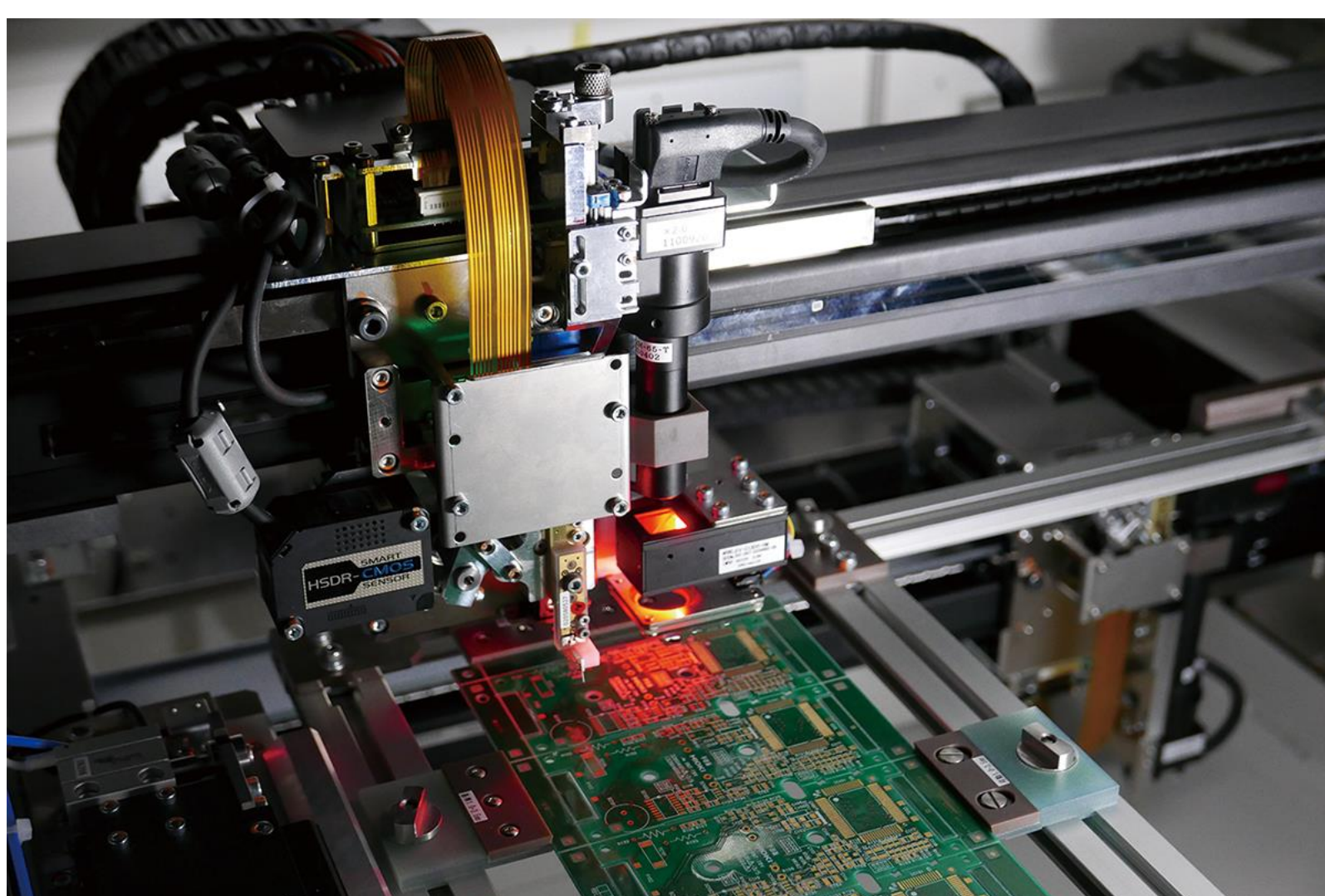
(Using CP1073-12 kelvin probe)

Improved takt time due to market-leading technology

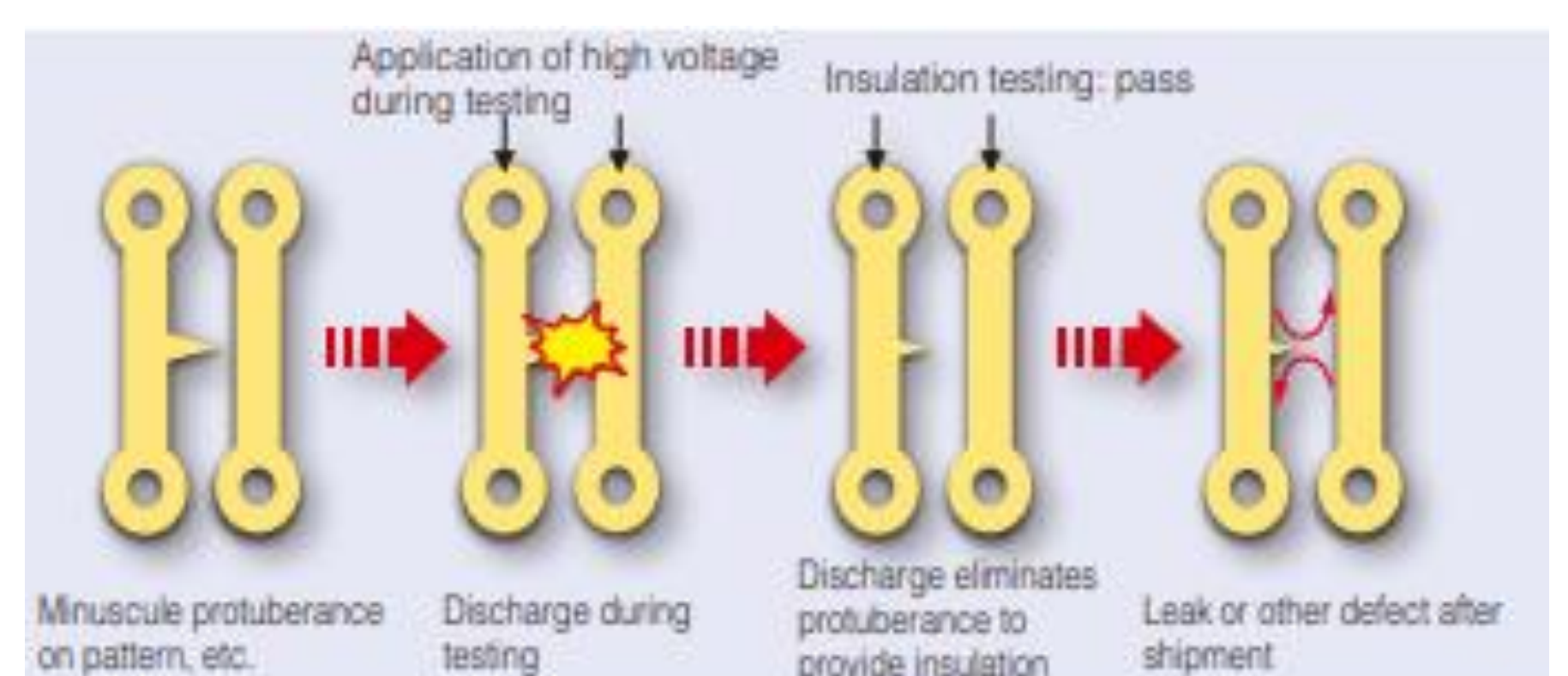
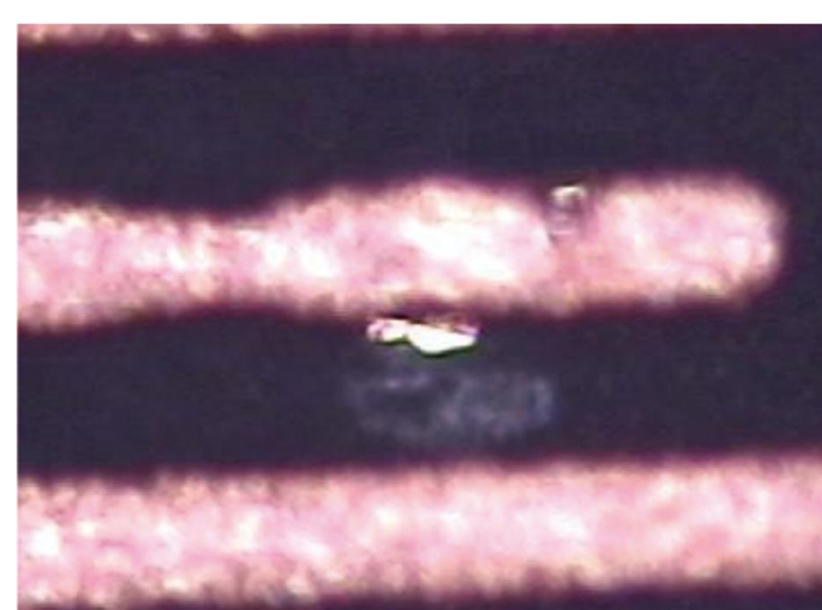
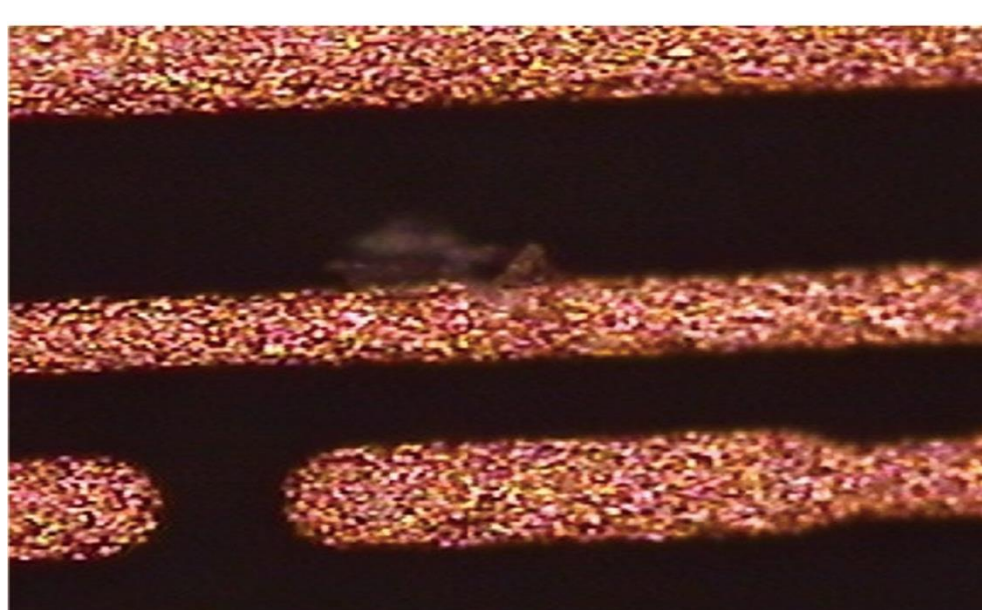


Inspection time has been reduced up to 30% compared to the previous model thanks to hardware design improvements of for probing precision and shooter inspection time and a new inspection order calculation algorithm.

Insulation testing up to 100 GΩ is enable with an applied 10V



Equipped with newly developed microcurrent detection technology, microcurrent as small as 100 pA (10V, 100GΩ) can be detected at higher speed and with higher accuracy than the previous model. High insulation resistance can be tested with minimal stress on dense probe-card substrates, essential for cutting-edge semiconductor wafer inspections.



Other applications

High accuracy probing system

Background

- Chiplets are attracting attention as semiconductor chips continue to miniaturize.
- To shorten the length of inter-chip wiring and to achieve lower power consumption and higher speed, miniaturization of RDLs is necessary.
- 4-terminal inspection is desired to evaluate the quality of fine bumps on RDLs.

Solution

Model: FA1823
Under Developing



4 – terminal inspection
Minimum pitch: 25um
Minimum bump size: 20um
(Using CP1073-12 kelvin probe)

Model: FA1813



4 – terminal inspection
Minimum pitch: 45um
Minimum bump size: 28um
(Using CP1073-12 kelvin probe)



Chip connection test for semiconductor back-end processes

Background

- The connection between the die and the substrate is tend to failure due to the bonding of dissimilar materials and physical stress.
- Since the cost of a dedicated jig and the time it takes to change the setup, we don't want to make a dedicated jig in the prototype.
- Since semiconductor testers are expensive, we want to evaluate and guarantee the process with a minimum cost. Especially initial development and prototype production (design samples and engineering samples).

Solution

Measure the resistance through the protection diode in the IC. High-precision measurement captures minute resistance abnormalities.



Model: FA1816

