Test Managers Are Driven To Reduce Rising Test Costs

A greater portion of the total chip manufacturing cost is now spent on test as devices become more complex and smaller. Test floor managers are tasked with driving down the cost of test and operating their test floors as efficiently as possible.

Improved Test Cell Efficiency and Increased Capabilities

The requirement for lower test cell costs, combined with new wafer test requirements for the latest device types, has prompted manufacturers to search for new ways to improve their test cell efficiency while expanding their application capabilities.

The 4090µ+ is a new extended performance version of the Electroglas 4090µ prober that enables high test cell utilization for thermal applications, simplifies probing operations, increases throughput, and expands application capabilities with soft touchdown features for advanced copper and low-k dielectric devices. These productivity and capability enhancements are also available as an upgrade to existing Electroglas 4080, 4090, and 4090µ probers.

Extended Performance for 200mm Productivity Breakthrough

Electroglas has undertaken a whole new approach to enhancing its flagship 200mm wafer prober system. The new system, the 4090µ+, enables customers to lower their test cell costs through significant performance improvements that result in increased test cell availability, higher throughput and simplified operation.

As the 4090µ+ improves performance, it also expands existing capabilities with superior accuracy for testing fine pitch devices. Additionally, the 4090µ+ provides a new feature, MicroTouch™, which decreases the impact force as the probe pins contact the bond pads to reduce pad damage to Cu, low-k and SOI wafers.
Fine pitch capability
Using the same proven platen motor technology, with frictionless air bearings, accuracy performance is increased by 25%. During manufacturing or an upgrade, a Prober Accuracy Measurement System (PAMS) is used to map and correct for cyclic and linear errors at multiple temperatures.

The 4090µ+ increases test cell availability by maintaining excellent alignment of probe pins to bond pads without operator adjustments. The temperature of the probing environment is constantly changing and the effects of this change can be seen on the probe-to-pad positioning within a wafer and across the lot. The system automatically senses thermal shifts of system components and probe pins adjusts the probes-to-pad contact as required. All of this is accomplished with the wafer on the chuck and without alignment tools or operator intervention.

During a temperature change over, testing with the 4090µ+ can begin immediately after the chuck reaches the set point, even while components within the prober are still expanding or contracting. This provides a significant increase in tester utilization and cost savings.

Operation of the 4090µ+ has been significantly simplified and automated, making it easier and faster for operators to use. The 4090µ+ allows operators to efficiently start probing and walk away while the prober automatically completes all necessary tasks to setup and align the probe card and wafers.

Each of these automation steps has been redesigned for robustness to increase the time between assists (MTBA). When combined with self-calibration features, this improved automation one-button probing slashes the operator and technician time needed to adjust probers and perform manual operations.

SYSTEM INFORMATION
The "Plus" Upgrade is available for 4080, 4090, and 4090µ probers. An upgraded 4080 does not fully equal a 4090µ+ but provides equivalent productivity enhancements.

Other Electroglas products and solutions, including Electroglas’ prober software products and the SORTmanager Test Floor Management Software family, can enhance or expand on the capabilities of Electroglas 4000 Series probers.

The Next, Easy Step
For more information on how the 4090µ+ can lower your test cell costs and probe your most advanced devices, contact your Electroglas sales representative at (800) 538-5124 or visit www.electroglas.com.

Probe mark images after probing, unloading, loading, and aligning a wafer five times. The excellent wafer-to-wafer accuracy of the 4090µ+ is demonstrated by the centered placement of all five probe marks on every pad and die of this wafer using a standard cantilever probe card.