

Products that Support Low Current Probing

Abstract

Probing at very low current levels require precise setup of equipment as well as having equipment that will perform at these levels. Micromanipulator products are available for low current/low noise probing for 6", 8" and 12" (150mm, 200mm and 300mm) wafer probers. Choose products that support low current probing and apply the following probing setup techniques to achieve successful low noise/low current probing results.

Controlling the environment is crucial in today's demanding probing applications. Low noise/low current tests must be performed in electrically shielded and light shielded environments. Additionally, low temperature tests must be performed in a frost-free environment.

Both the 9000 series and 8000 series Micromanipulator probers have been designed to provide *state of the art*

probing systems for today's semiconductor devices. Key to the success of parametric testing with current devices is the ability to accomplish low current measurements. Several options are available that enhance the system's capability to accomplish these demanding measurements. The following key features and options are those directly affecting the success of low current measurements:

Environments

Maintaining a controlled, light tight environment is critical to low current probing. Light Tight Enclosures provide a complete electrically shielded and light tight probing environment. Micromanipulator offers models for space efficiency (8800-SHIELD, 8800-ISE) as well as for enclosure of the entire station and accessories including laser cutters (7000-LTE, 8800-LTE and 9000-LTE). A large assortment of feed-through panels and even special vibration isolation mounting arrangements are available.

Integrated Dry Environments

The 9000 series probe stations have built in shielding so that a dry, frost-free environment is maintained. For the 8000 series station, the 8800-TEMPSEAL or ISE options maintain a dry, frost-free sample to -65 degrees C.

Integrated Shielded and Dark Environments

Micromanipulator's 8000 series probe stations are equipped with the 8800-SHIELD or 8800-ISE that provide best in class light shielding of the sample without the need for an outer enclosure. These may be used with probe cards and individual probes.

Results

Micromanipulator's products are designed to achieve results like the following:



These results are achieved through the use of the following products and features.

Central Point Grounding

Ground loops in the probing station directly affect the electrical noise levels manifested. Current flowing through the ground loops may produce electrical noise sufficient to make it impossible to resolve the characteristics of the actual device measurement.

Micromanipulator's prober design has incorporated a special grounding technique. Ground straps connect all major chassis elements to one central grounding block inside the station. A connector on the side provides the user access to this ground point.



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