

STANDARD OPERATING PROCEDURE

Reconfigured FOUR DIMENSIONS' 4-point-probe (Model 101C)



INTRODUCTION:

The four point probe is used to measure sheet resistivity of a diffused layer in a silicon substrate, or a deposited conducting film (e.g. Al). The system includes a probe head with four probes in a line separated by a distance of 40 mils, a current source and a digital voltmeter.

The current source passes a current, I , through the outer two probes of the probe head, and the voltage drop, V , across the inner two probes is then measured by the DVM.

The sheet resistivity is proportional to the ratio V/I . There is a correction factor which depends on the geometry of the probes and the wafer. For our system, the correction factor is approximately 4.53, so the sheet resistivity will be $4.53(V/I)$ with units of ohms/square.

The system will automatically apply this correction factor for you and the reading will be the sheet resistivity.

PROCEDURE:

1. Check Equipment Reservations on line
2. Switch on the power by flipping the toggle to "ON"
3. Open the blackbox and place wafer onto the wafer stage, slowly pull the lever forward to land the probe on to sample surface.
4. Cover the blackbox
5. Select the correct range : Kohms, or Ohms, etc.
6. Select the proper conduction type
7. To get the sheet resistivity reading simply press the MEASURE push button and the value will appear on the digital screen.
8. After all the readings have been taken and the wafer is ready to be unloaded...

If you are having problems with the equipment contact Edward XU.