Ircon® System Solutions – *Electronics*

Silicon Wafer Polishing

Customer
Semiconductor Mfgs.

SIC code
3674

Customer Needs
Prior to processing a silicon wafer it has to be polished. This process is very simple. The wafer is placed on a flat pad and rotated slowly. A wet slurry is run over the wafer and a 2nd pad rotates over the top of the wafer providing the polishing action. The wafer has to be kept cool so that it does not overheat and warp. With the wafers becoming as large as 300 mm (12"), it is extremely important to keep the wafer flat. The base cost of just the unpolished wafer requires that it be handled very carefully. The eventual value of a 300 mm (12") wafer could be over $65,000.

The temperature of the polishing is around 24°C (75°F). Because of the narrow temperature range and the accuracy required, the instrument to use is the Modline 4, 44 series with the range of 0-100ºC (32-212ºF). While the wafer appears to be very reflective there is always water on the surface. At 8-14 microns this layer of water has an emissivity of 0.99 making it easy to measure the temperature. Some of the large polishing machines may have several stations requiring one instrument for each station.

Features/Benefits to address

Product

- Modline 4, 44 with 8-14 micron range.

Application

- The silicon wafer must not be overheated or they will warp. The cost of the lost wafer is several hundreds of dollars.

Who to talk to?

1. Operator in charge of the polishing machine
2. Plant engineer
3. Process engineer.

What to take?

1. Modline 4 Demo

Application

Changing out the polishing heads on a wafer polishing machine at Mitsubishi

Names of customer
Target two customer groups. First off, look for OEM's that make and service wafer polishing machines. Sell spot pyrometers as a value added device to their existing products and as a retrofit upgrade for older machines.

Your second target customers are the end users who are actually producing wafers. They may produce the wafers for in-house use or they may sell them to chip manufacturers. See if they have problems with scrap and determine how they deal with it.

OEM's

http://www.prhoffman.com/

http://www.strasbaugh.com/

http://www.logitech-us.com/

http://www.mipox.com/

Semiconductor Wafer Companies

http://www.silicon-wafers.com/

http://www.virginiasemi.com/

http://www.siwafers.com/

http://www.pcasilicon.com/

http://www.siliconmaterials.com/

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