TACTILE PRESSURE INDICATING SENSOR FILM

Application: Wafer Bonding

Fujifilm Prescale® is a unique, affordable and easy to use tool that reveals the distribution and magnitude of pressure in your wafer bonder.

FUJIFILM PRESCALE® IN A WAFER BOND

Place Fujifilm Prescale® tactile surface sensor here

BENEFITS

- Lower incidence of voids
- Minimize “spill out” into unwanted regions reducing short circuits.
- Reduce incidence of unbounded wafers
- More consistent hermetic seals with glass frit bonding
- Reduce wafer cracking

Fujifilm Prescale® is used to measure pressure on wafer bonding machines to reveal pressure inconsistencies across the wafer surface. By monitoring both pressure magnitude and distribution within your wafer bonding device with Fujifilm Prescale® wafer defects and can sharply reduced.

When placed in your wafer bonder, the film instantaneously and permanently changes color in direct proportion to the actual pressure applied. Philosophically similar to the indication given by Litmus paper. Precise pressure magnitude is then easily determined by comparing the resultant color intensity to a standardized color correlation chart. No training or instrumentation is required.

Fujifilm Prescale® dramatically reveals a complete pressure “map”

Pressure Statistics

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Sample Pseudocolor Rep.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>25.290</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>57.92</td>
</tr>
<tr>
<td>Area</td>
<td>0.14</td>
</tr>
<tr>
<td>Force</td>
<td>39.44</td>
</tr>
<tr>
<td>Minus</td>
<td>29.319</td>
</tr>
<tr>
<td>Maximum</td>
<td>43.200</td>
</tr>
</tbody>
</table>

Pressure Profile

Colorization applied with the Topaq® optical analysis system
Tactile Pressure Indicating Sensor Film

Accurate, Cost-effective, Easy to Employ Pressure Mapping Technology

Have you ever needed to evaluate pressure or force between two touching or mating surfaces? Previously, your only alternatives were strain gauges and load cells, that are both time consuming and difficult to interface. Now with the advent of our disposable one-time use pressure film, Fujifilm Prescale®, evaluating surface contact pressure distribution and magnitude is accurate, quick and highly economical.

7 Sensitivities To Accommodate A Wide Range Of Pressures

<table>
<thead>
<tr>
<th>FILM TYPE</th>
<th>PRESSURE RANGE</th>
<th>PRESSURE RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXTREME LOW</td>
<td>7.2 - 28 PSI</td>
<td>(0.5 - 2 kg/cm²)</td>
</tr>
<tr>
<td>ULTRA LOW</td>
<td>28 - 85 PSI</td>
<td>(2 - 6 kg/cm²)</td>
</tr>
<tr>
<td>SUPER LOW</td>
<td>70 - 350 PSI</td>
<td>(5 - 25 kg/cm²)</td>
</tr>
<tr>
<td>LOW</td>
<td>350 - 1,400 PSI</td>
<td>(25 - 100 kg/cm²)</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>1,400 - 7,100 PSI</td>
<td>(100 - 500 kg/cm²)</td>
</tr>
<tr>
<td>HIGH</td>
<td>7,100 - 18,500 PSI</td>
<td>(500 - 1,300 kg/cm²)</td>
</tr>
<tr>
<td>SUPER HIGH</td>
<td>18,500 - 43,200 PSI</td>
<td>(1,300 - 3,000 kg/cm²)</td>
</tr>
</tbody>
</table>

INDUSTRY APPLICATIONS

AEROSPACE
- Composite Layups, Material Testing, Bolted Joints

AUTOMOTIVE
- Gasketing, Impacts, Fuel Cell Stacking, Clutches, Brakes, Tire Tread

ELECTRONICS
- Heat Sinks, LCD Bonding, PCB Lamination, Wafer Bonding/Polishing

MEDICAL
- Clamping, Gait Analysis, Ergonomics, Orthotics and Prosthetics

PACKAGING
- Heat Sealing, Converting

PLASTICS
- Lamination Press, Die Extrusion Injection Molding, Stamping

PRINTING/PAPERMAKING
- Nip Impressions

PHYSICAL SPECIFICATIONS

- OPERATING TEMPERATURE: 41°F to 95°F (6°C - 35°C) (much higher for brief exposure)
- HUMIDITY RANGE: 20% to 90% RH
- GAUGE: 4, 8, or 20 mils
- SPATIAL RESOLUTION: 5 to 15 microns
- SUBSTRATE: Polyethylene Terephthalate (PET)
- ACCURACY: ±10% visual, ±2% utilizing optional optical measurement systems
- SHELF LIFE: 2 years

MSDS Available Upon Request.

Sensor Products Inc.
300 Madison Avenue
Madison, NJ 07940 USA
Phone: 1.973.884.1755
Fax: 1.973.884.1699
www.sensorprod.com

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