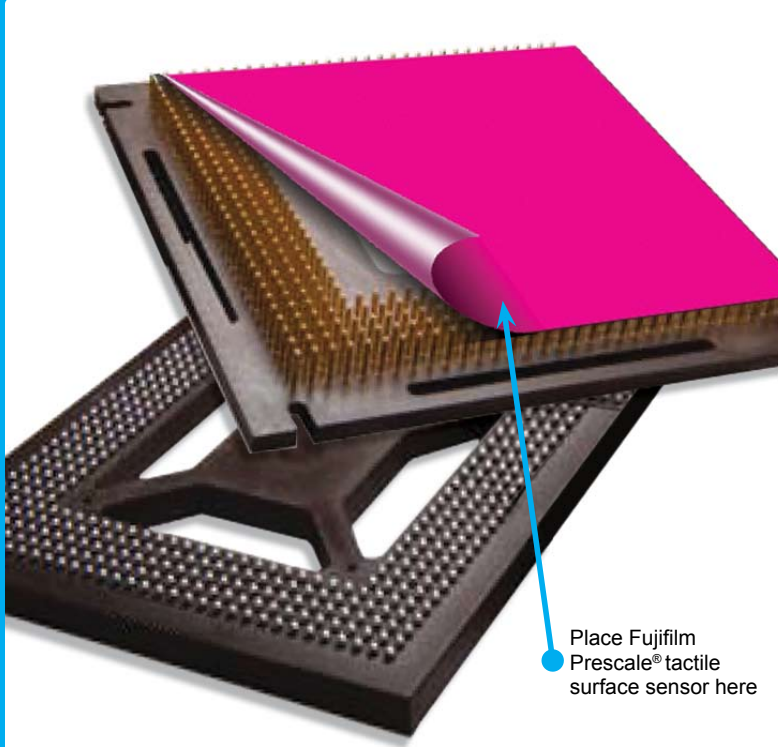


TACTILE PRESSURE INDICATING SENSOR FILM

Application: BGA

Fujifilm Prescale® is a unique, affordable and easy to use tool that reveals coplanarity across your BGA or QFN application.

FUJIFILM PRESCALE® FILM ON AN INTERCONNECT INTERFACE



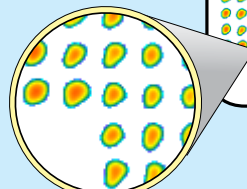
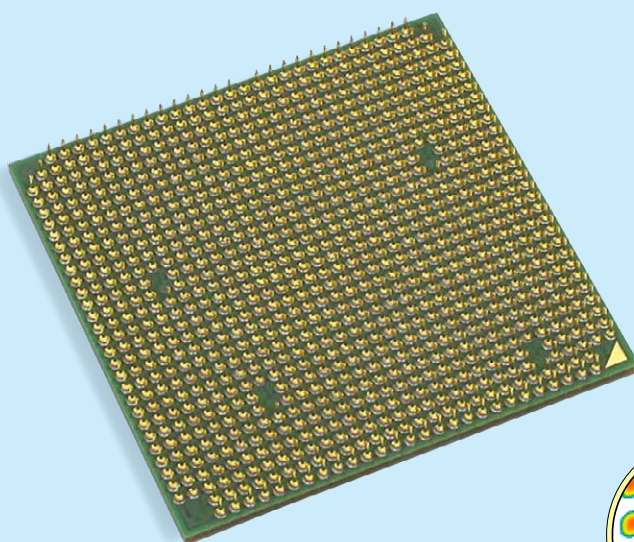
BENEFITS

- ▶ Quickly and inexpensively determine ball height uniformity and coplanarity across the contacting surface.
- ▶ Indicate warpage directionality (concave or convex) as well as severity of warping, using temperature controlled fixturing.
- ▶ Indicate uniformity of spring-loaded plunger-pin forces across the face of BGA sockets on PWB pads.
- ▶ Indicate uniformity of contact force distribution in mating surfaces in a wide variety of interconnect / test applications.

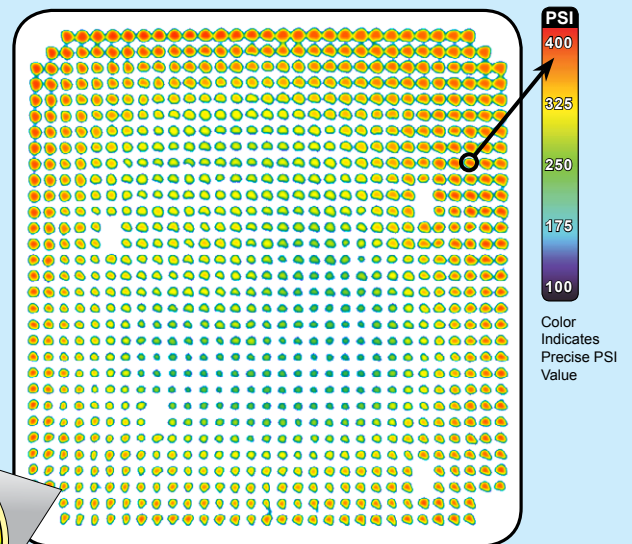
Fujifilm Prescale® sensor film reveals both **pressure distribution and magnitude** between contacting surfaces in a dramatic surface “map.”

When placed in your interconnect interface, the film instantaneously and permanently changes color in direct proportion with dimensional uniformity and out-of-plane conditions. Detecting missing, damaged, and out-of-position balls is easily determined by comparing the resultant color intensity to a standardized color correlation chart. No training or instrumentation is required.

Fujifilm Prescale® film captures and reveals a complete pressure uniformity “map”



Zoomed View



Color Indicates Precise PSI Value

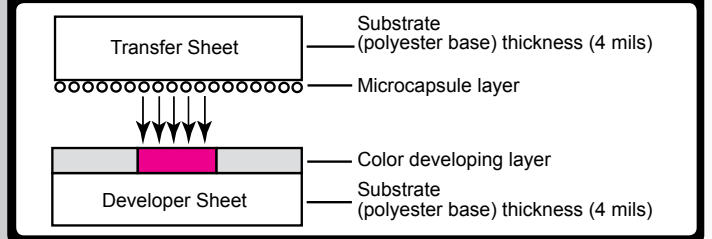
Colorization applied with the Topaq® optical analysis system

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.

CROSS SECTIONAL VIEW OF FUJIFILM PRESCALE® FILM



7 Sensitivities To Accommodate A Wide Range Of Pressures

FILM TYPE	PRESSURE RANGE	
EXTREME LOW	7.2 - 28 PSI	(0.5 - 2 kg/cm ²)
ULTRA LOW	28 - 85 PSI	(2 - 6 kg/cm ²)
SUPER LOW	70 - 350 PSI	(5 - 25 kg/cm ²)
LOW	350 - 1,400 PSI	(25 - 100 kg/cm ²)
MEDIUM	1,400 - 7,100 PSI	(100 - 500 kg/cm ²)
HIGH	7,100 - 18,500 PSI	(500 - 1,300 kg/cm ²)
SUPER HIGH	18,500 - 43,200 PSI	(1,300 - 3,000 kg/cm ²)

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

MSDS Available Upon Request.



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