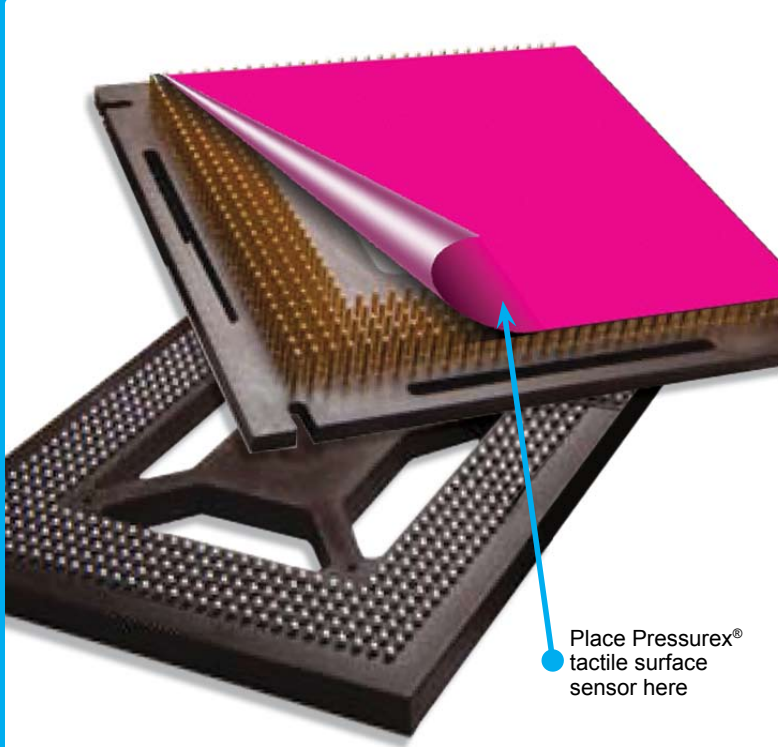


TACTILE PRESSURE INDICATING SENSOR FILM

Application: BGA

Pressure^x[®] is a unique, affordable and easy to use tool that reveals coplanarity across your BGA or QFN application.

PRESSUREX[®] FILM ON AN INTERCONNECT INTERFACE



Place Pressure^x[®] tactile surface sensor here

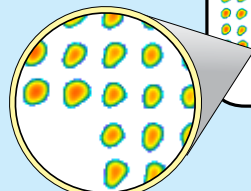
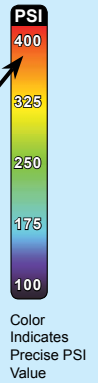
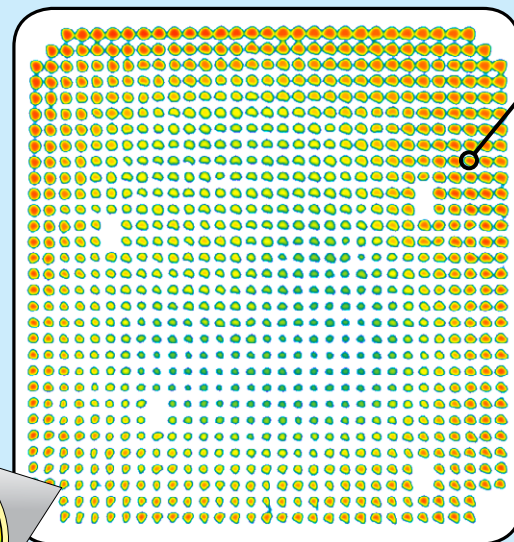
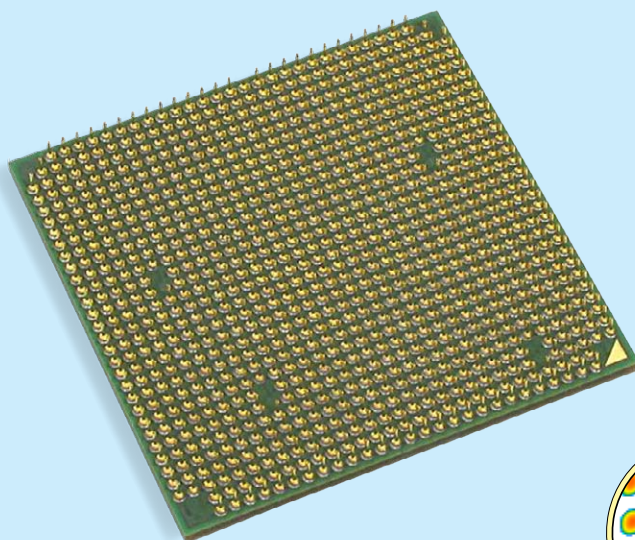
BENEFITS

- ▶ 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.

Pressure^x[®] 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.

Pressure^x[®] film captures and reveals a complete pressure uniformity “map”



Zoomed View

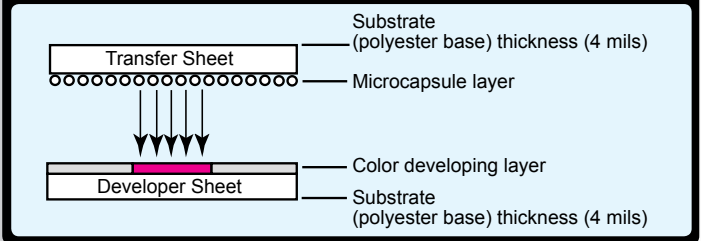
Colorization applied with the Topaq[®] optical analysis system

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 choices were strain gauges and load cells, that are time consuming and difficult to interface. Now with Pressurex®, our disposable one-time use pressure film, evaluating surface pressure distribution and magnitude is accurate, quick and highly economical.

CROSS SECTIONAL VIEW OF PRESSUREX® FILM



8 Sensitivities To Accommodate A Wide Range Of Pressures

PRESSURE FILM TYPE	PRESSURE RANGE	
Micro*	2 – 20 PSI	(0.14 – 1.4 kg/cm ²)
Zero (LLLLW)	7.2 – 28 PSI	(0.5 – 2 kg/cm ²)
Ultra Low (LLLW)	28 – 85 PSI	(2 – 6 kg/cm ²)
Super Low (LLW)	70 – 350 PSI	(5 – 25 kg/cm ²)
Low (LW)	350 – 1,400 PSI	(25 – 100 kg/cm ²)
Medium (MS)	1,400 – 7,100 PSI	(100 – 500 kg/cm ²)
High (HS)	7,100 – 18,500 PSI	(500 – 1,300 kg/cm ²)
Super High (HHS)	18,500 – 43,200 PSI	(1,300 – 3,000 kg/cm ²)

*Relative Pressure Distribution Only.

PHYSICAL SPECIFICATIONS

OPERATING TEMPERATURE	41°F to 95°F (5°C - 35°C) <i>(much higher for brief exposure)</i>	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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