

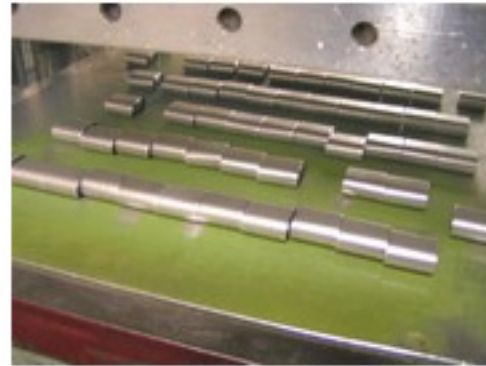


## Sensor film holds tighter product tolerances

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As an innovator of film capacitor technology, SB Electronics designs and manufactures products that are on the cutting edge of today's demanding electronics applications. To maintain continuous improvement of its manufacturing processes, David Bryan, manufacturing engineering manager for SB Electronics, recently specified Pressurex, a tactile surface pressure-indicating film from Sensor Products.

Many of SB Electronics' radial lead products are designed to take up the minimum amount of space on printed circuit boards. This is often done by flattening the round capacitor profile in a pressing operation between aluminum plates. A higher than expected yield hit led the quality department to contact engineering to troubleshoot and improve the process.



"After histograms indicated that some of our tighter tolerance parts ( $\pm 1\%$  capacitance) were going out of spec, and making some initial dimensional measurements, I needed to visually determine the tactile surface pressure," says Bryan.

Bryan inserted the film which he had ordered in Super Low pressure range of 70--350 PSI (5--25kg/cm<sup>2</sup>) between the press plates during a product run and saw the uneven distribution of pressure between the capacitors. As a result, he could prove the press plates weren't flat and were causing uneven pressure distribution.

Bryan continues to use standard tools such as gauges and calipers, but is asking that Pressurex be included as an on-going ISO quality control protocol. In the past, he had used the film to evaluate bolted flange designs for custom fittings in vacuum systems.

The film has many uses on a multi-layer printed circuit board assembly, including analysing contact uniformity, verifying flatness (planarity) between semiconductor wafers, and revealing problems such as overloading of connector contacts, standoffs and component solder joints. It is ideal for dozens of industrial applications, such as assessing surface contact inconsistencies in clamps, connectors, heat sinks and heat sealing elements.

Pressurex is available in seven different ranges that measure pressure from 2 - 43,000 PSI (0.14 - 3,000 kg/cm<sup>2</sup>) It allows for rapid and easy determination of compression magnitude and distribution. When placed between two contacting or mating surfaces, it instantly and permanently changes different shades of red, with the colour change directly proportional to the actual pressure applied. Precise pressure magnitude is easily determined by comparing the resultant colour intensity to a color correlation chart (conceptually similar to interpreting Litmus paper).

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