Sensor Products introduces a novel Tactilus® heat-sink monitoring system which facilitates the design and research engineers to rapidly and accurately test and rectify the pressure distribution and surface contact within the heat sink and its source.

Tactilus® Sensor System

A slight distortion in the heat exchange phenomenon or lowering the surface area will have intense effect on the efficiency of cooling. The non-uniform pressure distribution leads to low heat conduction and overheating of the electronics.

By employing Tactilus® system the engineers will get a clear picture of the exact contact forces and pressure distribution information on the components of the circuit board. Since the screws between the heat sink and the CPU are torqued, Tactilus® could map and verify the fluctuating pressure distribution across the contact surfaces and projects it through the software. The heat sink connection can be experimented, manipulated and re-stored at the real-time, accelerating the trial and error methods and avoiding the use of additional assemblies. Tactilus® also furnishes the pressure information required for FEA simulation forecasts.

The flexible Tactilus® sensor is only about 0.015 inch or 0.38 mm in thickness which facilitates its positioning between the heat sink and the CPU without interrupting the assembly. The sensor pad is designed with 625 sensing points which are resistive in nature and are sequenced on a 25 × 25 grid with an entire sensing area of about 2 inch × 2 inch. The scanning speed is in the range of 1,000 Hz and the working pressure range is in the order of 0 to 100 psi or 0 to 7 kg/cm2.

The Tactilus® sensor gathers and processes the sensor information by means of a robust, user-friendly, Windows-oriented software program that generates pressure vs. time graphs and histograms, accomplishes two-dimensional, three-dimensional and 360° image depiction and target scaling, exhibits minimum, average and maximum pressure and executes force inclusions as well as creates reports in ASCII, Excel or Access formats.

The Tactilus® systems serve numerous diagnostic purposes on various heat sinks with constant repeatability. It is extremely resistant to electromagnetic sound fluctuations, temperature and humidity changes. The precision of the sensor is ± 10% with ± 2% repeatability, ± 5% hysteresis and ± 1.5% non-linearity.

The versatile Sensor System can be deployed for any application or measurement to monitor the real time distribution of surface pressure. This system maps and calculates pressure distribution at the surface interfaces of door seals, heat seals, tire tread footprints, fuel cells, flat panel displays printed circuit boards , wafer polishing, etc.

Sensor Products supplies custom design and ready-made systems for specific applications. Apart from that the Graphical User Interface (GUI) and the Dynamic Link Library (DLL) files are also added based on user's request.

Published Date: 20/9/2010