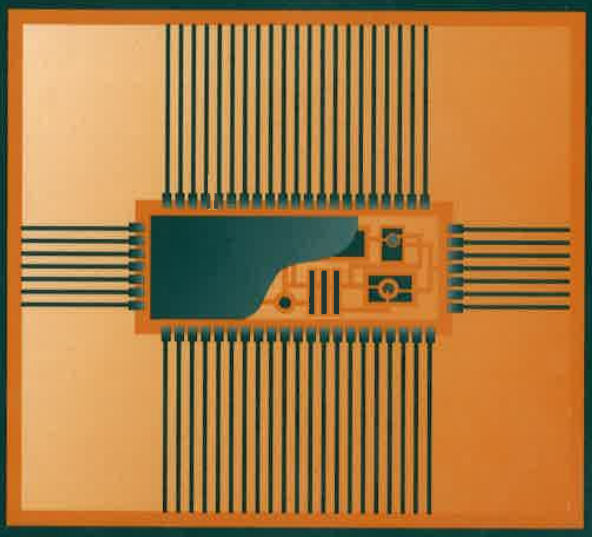
# PLASTIC-ENCAPSULATED MICROELECTRONICS



Materials, Processes, Quality, Reliability, and Applications

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temperature; i.e., the quantity of heat required to raise the temperature of 1 g of a substance by 1°C.

**STITCH BOND:** A bond in which a capillary tube is used for feeding the wire and forming the bond sequentially in a stitch pattern. The wire is not formed into a ball prior to bonding.

**STORAGE TEMPERATURE:** The temperature at which a device, without any power applied, is stored.

**STRESS:** Caused by thermal mismatch between the various materials of construction in the device. In a plastic-encapsulated device, part of the stress is also due to the curing of the epoxy polymer network which shrinks during the polymerization. Also often referred to as packaging stress, shrinkage stress, molding stress, or encapsulating stress.

**STRESS RELAXATION:** The time-dependent decrease in stress in a solid under given constraint conditions.

**SUBSTRATE:** A supporting platform for an active or passive electrical or electronic component.

**SURFACE-MOUNT TECHNOLOGY (SMT):** The general category of expertise for mounting surface mount components onto substrates.

**SURFACE RESISTIVITY:** The resistance to a current flow along the surface of a material.

**TAPE AUTOMATED BONDING (TAB):** The utilization of a metal tape material as a support and carrier of a microelectronic component in a gang bonding process.

**TEMPERATURE CYCLING:** An environmental test in which the specimen is subjected to several changes from one temperature to another over a period of time.

**TENSILE STRENGTH:** The pulling stress that has to be applied to a material to break it, usually measured in Pa.

**THERMAL CONDUCTIVITY:** The amount of heat per unit time per unit area that can be conducted through a unit thickness of a material.

**THERMAL EXPANSION:** The expansion of a material when subjected to temperature change (usually a temperature increase).

**THERMAL GRADIENT:** The plot of temperature change across the surface or the bulk thickness of a material being heated.

**THERMAL MISMATCH:** Difference of thermal coefficients of expansion of materials that are bonded together.