

GLOSSARY OF TERMS AND DEFINITIONS

Annealing - Refers to a brass pin that has been softened by heat treatment which makes the pin easier to crimp, rivet (swage) or bend.

Carrier - An assembly consisting of an insulator with male pins onto which receptacles are loaded. This assembly is employed as a fixture during the soldering operation and is then removed leaving a PC board populated with individual receptacles. Female carriers that load male pins are also available for special applications.

Clip - See Contact.

Closed Entry - Refers to female contacts where the front rim prevents the insertion of an oversize pin that would otherwise damage the contact.

Compliancy - Contact's ability to accept multiple insertions and extractions of a wide range of pin shapes and sizes while retaining its original configuration.

Compliant Press Fit - Method of mounting an interconnect component to a PC board where a drilled and slotted receptacle or pin is pressed into a plated-through-hole without damaging the hole.

Constant Usage Temperature (CUT) - Constant Usage Temperature is a measure of the maximum temperature that a material may be exposed to for long periods of time, 1000 - 1500 hrs., before degradation of its electrical and mechanical properties occurs.

Contact (and Contact Clip) - Multi-finger spring insert of a receptacle which completes the electrical path between a male pin and a female receptacle. Also referred to as a clip.

Contact Rating - Current carrying capability of a contact measured in amperes with respect to temperature rise above ambient.

Contact Resistance - The electrical resistance at the point of connection determined by the contact geometry, area of contact, plating and normal force.

Coplanarity - Refers to the measurement of multiple points and their distance from a respective plane. This is particularly useful for surface mount parts to determine the maximum amount of difference in the height of the surfaces that need to be soldered.

Electroplating - The electrodepositing of a metal coating on a conductive object such as a pin, shell, or contact clip.

Electro-vibratory Plating - An electroplating system where the parts are processed in a vibrating basket which ensures uniform plating thickness and avoids damage to delicate parts.

End Stackable - The ability for connectors to be mounted end to end while maintaining grid or spacing.

Extraction Force (or Withdrawal Force) - The force required to remove a lead from a contact.

Epoxy - Woven glass cloth epoxy laminate. Classified as a thermoset, the woven fibers of these materials enable them to withstand high temperatures without being damaged. Cut from large sheets of material, the insulator is then machined on a high speed drill/router the same way as printed circuit boards are fabricated.

Electrostatic Discharge (ESD) - The momentary electric current that flows between two objects that may cause damage to electronic equipment.

Flash (Plating) - A very thin plating of metal, usually less than 10 micro inches, to uniformly cover the surface of the base metal.

Flatness - Sometimes used in place of coplanarity, flatness refers to the amount of variation of a plane or surface.

Floating Contact - In surface mount sockets, a receptacle designed to move up and down freely in an insulator to compensate for unevenly dispensed solder paste.

Free Machining Alloy - An alloy which is easy to machine, e.g. brass alloy 360.

Fretting - A form of corrosion caused by vibration.

Gas Tight Connection - An electrical connection of sufficient pressure to prevent the intrusion of a corrosive atmosphere into the contact area.

Heat Deflection Temperature (HDT) - An industry recognized test for comparing the short term effects of high temperature on plastics.

Heat Treating - The process of using specific heating and cooling cycles to alter the mechanical properties of an alloy. Generally, heat treating can harden or soften a metal depending on the material, the parameters used and the desired physical property.

Hex Press Fit - A method of press-fitting either a pin or receptacle, using a hexagonal cross section, into a plated through-hole without causing damage to the hole while still maintaining a gas tight seal.

High Speed Turning - See Precision-Machined.

Injection Molding - A method of molding plastics by first heating granular plastic to its molten state and injecting it into the mold cavity where the plastic solidifies and is then ejected from the cavity.

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Insertion Force - The force required to insert a male lead into a female socket.

Knurl - A vertical serration machined around the diameter of an interconnect pin providing a retention feature for press-fitting in a PC board or insulator and also preventing rotation of the pin.

LCP (Liquid Crystal Polymer) - Classified as a thermoplastic, LCP is a hard, rigid material which exhibits outstanding strength at high temperatures and exceptional strength and toughness in its thin walls. Applications: LCP is used as an insulator material for tight grid (.050", 2mm) connectors and extremely high temperature requirements.

Mating Pin - The pin used to interconnect two electronic devices by inserting it into the contact. Critical features are diameter, length, and shape (but not limited to.)

Machined - See Precision-Machined.

Migration - For a brass part plated with tin or gold, the migration of zinc from brass to the surface of the plating. This becomes zinc oxide and renders the part unsolderable. Zinc migration is prevented by using a copper or nickel underplate as a barrier.

Nylon 46 - Classified as thermoplastics. Nylon 46 offers superior heat resistance, good electrical properties and excellent toughness in its thin walls, which are desirable characteristics for connector insulators. Its superior strength in thin walls enables the press-fitting of pins in close proximity to each other without cracking or warping the material, making it ideal for molding 2mm and .050" grid insulators. Nylon 46 is suitable for high temperature applications including vapor phase, infra-red reflow and wave soldering operations.

Passive Device or Component - An electronic connector that consumes electrical energy, but does not produce electrical energy. Passive devices are not susceptible to significant ESD damage.

PCB - Printed Circuit Board.

PCT (Polycyclohexane Terephthalate) - Thermoplastic polyester is rated for higher temperatures. PCT is a standard material on DIP and SIP insulators for higher temperature operations. All PGA and surface mount products are molded from PCT and are suitable for infra-red, vapor phase and wave soldering.

Plating - A process in which metals (e.g. gold, tin-lead, nickel, silver) are electrically deposited onto a base metal in very thin and precise thicknesses.

Plated Through-Hole - A hole in a printed circuit board which has metallic walls connected to conductors on the surface or inside the board, in which the component lead is inserted and soldered.

Precision-Machined - Manufacturing process whereby a rapidly turning solid metal rod is cut to precise tolerances.

Receptacle - Female contact consisting of an outer shell & inner spring contact (clip) designed for multiple mating/unmating cycles with a male pin or component lead.

Screw-Machined - See Precision-Machined.

Secondary Machining - A process in which holes, slots, flats, squares or other special features may be machined onto a pin or receptacle after the basic shape of the part has been turned on a high speed lathe.

Shrink DIP Package - An IC which has a pin spacing of .070" on centers.

Skiving - The removal of a thin amount of plating when pins or contacts are press fit. For example, soft platings may yield some amount of skiving upon press fitting into an insulator or board. Skiving may also appear under a contact clip pressed into a receptacle shell.

Standoff - A protrusion at the bottom of the connector used to raise it off the PC board to aid in solder fillet formation, board inspection, flux removal and cleaning.

Swage Mount - A type of mounting commonly used with solder terminals and printed circuit pins where one end of the terminal is flared out (riveted) securing it to the PCB.

Thermal Coefficient of Expansion (TCE) - Expansion of material caused by an increase in temperature.

Thermoset - Type of plastic which is heat cured into a permanent shape and, due to chemical reaction, cannot be remelted.

Thermoplastics - Type of plastic which is molded under heat and pressure and can be remelted & reused many times.

Top Plate - Final surface plating over base metal and underplating.

Underplate - Plating between the base metal and the top plating.

Withdrawal Force (or Extraction Force) - The force required to remove a lead from a contact.

Wrapost (Terminal or Receptacle) - The length of square cross section of certain pins and receptacles which is used for making electrical connections via wire wrapping. Wire wrapping is a process in which wire is wrapped around the post to form a gas-tight connection without soldering.

