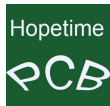


**GLOSSARY of Printed Circuit Design and Manufacturing**

No.	GLOSSARY	Meanings
1	SAC4	Self-Aligned Controlled Collapse Chip Connect. A variation of C4 flip-chip technology. . PFEIFFER L, WEST KW, WONG YH ,Journal of the Electrochemical Society (JES) Volume 134, Number 11, November 1987.
2	saturation	1. The operating condition of a transistor when an increase in base current produces no further increase in collector current. 2. A circuit condition whereby an increase in the driving or input signal no longer produces a change in the output. 3. The condition when a transistor is driven so hard that it becomes biased in the forward direction. In a switching application, the charge stored in the base region prevents the transistor from turning off quickly under saturation conditions. 4. Generally, that state in which a semiconductor device is conducting most heavily for a given applied voltage. In many devices it is also a state in which the normal amplification mechanisms have become "swamped" and inoperative
3	schematic	A diagram which shows, by means of graphic symbols, the electrical connections, components and functions of an electrical system. The components are represented by agreed-upon symbols, and the conductors connecting them by lines. If two lines cross each other, a large dot represents a junction, whereas no dot represents no connection.
4	short	Short circuit. 1. An abnormal connection of relatively low resistance between two points of a circuit. The result is excess (often damaging) current between these points. Such a connection is considered to have occurred in a printed wiring CAD database or artwork anytime conductors from different nets either touch or come closer than the minimum spacing allowed for the design rules being use.
5	signal	1. A net. 2. A net other than a power or ground net.
6	silicon wafer	a thin, iridescent, silvery disk of silicon which contains a set of integrated circuits, prior to their being cut free and packaged. A silicon wafer will diffract reflected light into rainbow patterns and, being a similar size, looks so much like a music CD that it could be mistaken for one (except that it has no label or hole in the middle). On closer inspection, one can see the individual (usually rectangular- or square-shaped) integrated circuits which form a uniform patchwork quite unlike the surface of a music CD. When cut or etched from the wafer these circuits are then called chips or dice .
7	silkscreen	(Also called "silkscreen legend") 1. The decals and reference designators in epoxy ink on a printed wiring board , so called because of the method of application—the ink is "squeegeed" through a silk screen, the same technique used in the printing of T-shirts.A silk mesh size commonly used is 6 mils. With this mesh size, the absolute minimum line width of any silkscreen legend artwork is 6 mils, which leaves a very faint line. 7 mils works better for a practical minimum line width.Newer silkscreening methods allow for silkscreen draws of 5 mils, which come out very clear. A good reference designator size to use is 35 mils high with a 5 mil draw.2. A Gerber file controlling the photoplotting of this legend.
8	single track	PCB design with only one route between adjacent DIP pins.
9	SMD	1. Surface Mount Device (SMT component). 2. Solder-Mask Defined
10	SMT	Surface Mount Technology.
11	soft	Pertaining to or consisting of software.
12	soft copy	An electronic form of a document; a data file in computer memory or stored on storage media. When one is looking at a soft copy he is viewing the document as displayed on a computer monitor.
13	software	Programs, data files, procedures, rules, and any associated documentation pertaining to the operation of a computer system or of a computer application.
14	solder balls	The round solder balls bonded to a transistor contact area and used to make connection to a conductor by face-down bonding techniques.
15	solder bumps	solder balls.



### GLOSSARY of Printed Circuit Design and Manufacturing

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16	solder mask	A technique wherein everything on a circuit board is coated with a plastic except 1) the contacts to be soldered, 2) the gold-plated terminals of any card-edge connectors and 3)fiducial marks.
17	space transformer	Abbreviated ST. A major component of certain high-density probe cards . It provides pitch reduction, high routing density and localized mid-frequency decoupling. A major developer of ATE systems which use
18	sputtering	A deposition process wherein a surface, or target, is immersed in an inert-gas plasma and is bombarded by ionized molecules that eject surface atoms. The process is based on the disintegration of the target material under ion bombardment. Atoms broken away from the target material by gas ions deposit on the part (substrate), forming a thin film
19	SQFP	Shrink Quad Flat Pack. See QFP
20	ST	Space Transformer
21	stable datum	a datum along which all other data align. From any confusion, order and sanity can emerge providing one merely selects a datum, assigns it importance or seniority and then begins to align other data against it. The stable datum for any PCB layout could be stated this way: The schematic is the "Bible." In other word, the schematic says the circuit is this way, and the PCB design must follow that pattern perfectly.
22	Streamlined Design	See Streamlined PCB Design
23	Streamlined PCB Design	Streamline— v. Cause to be quick and efficient. Streamlined design = accuracy plus speed. Streamlined PCB Design, or SLPD, is a set of policies that guide John Childers' design of printed circuit boards. The policies have been derived with the aim of simplifying and systematically eliminating errors from PCB design.
24	stuff	Slang Populate . Attach and solder components to (a printed wiring board )
25	sub-panel	A group of printed circuits (called modules) arrayed in a panel and handled by both the board house and the assembly house as though it were a single printed wiring board . The sub-panel is usually prepared at the board house by routing most of the material separating individual modules, leaving small tabs. The tabs are strong enough so that the sub-panel can be assembled as a unit, and weak enough so that final separation of assembled modules is easily done.
26	substrate	The supporting material on or in which the parts of an integrated circuit are attached or made. The substrate may be passive ( thin film , hybrid ) or active ( monolithic compatible).
27	surface mount	Surface mount technology. The technology of creating printed wiring wherein components are soldered to the board without using holes. The result is higher component density, allowing smaller PWB 's. Abbreviated SMT.
28	symbol	A simplified design representing a part in a schematic circuit diagram