

GLOSSARY of Printed Circuit Design and Manufacturing

No.	GLOSSARY	Meanings
1	D code	<p>Draft code. 1. A datum in a Gerber file which acts as a command to a photoplotter . A D code in a Gerber file takes the form of a number prefixed by the letter D, e.g. "D20". However, in some aperture lists the D is dropped. In aperture lists of Cadstar, the column heading "Position" actually refers to D code, and the D prefix is dropped. 2. D codes have multiple purposes. The first is to control the state of the light being on or off. Valid codes for light state are D01, D02, and D03.</p> <p>D codes with values of 10 or greater represent the aperture's position on the list or wheel. It is very important to understand that there is no universal "D10" or "D30". Unlike the D01 , D02, and D03 counterparts which have a fixed meaning (draw , move, flash), D10 and higher values have aperture shapes and dimensions assigned to them by each individual user. Hence, one job's D10 could be a 10 mil Round, when another job's D10 could be a 45 mil Square.</p> <p>There are two distinct ways to number an aperture list. The traditional 24 aperture system started with D10 - D19, jumping suddenly to D70 - D71, then back to D20 - D29, ending with D72 -D73. This is still a common format for output for CAD packages, and is still mandatory for old 24 aperture Gerber vector Photoplotters .</p> <p>It is now common to start with D10, then increase numerically in steps of 1 (D10, D11, etc.) continuing up to D70 and beyond, rarely beyond 1000 individual apertures.</p>
2	database	A collection of interrelated data items stored together without unnecessary redundancy, to serve one or more applications.
3	decal	A graphic software representation of a component, so named because hand tape-up of printed circuit boards employed the use of pull-off and paste decals to represent components. Also called a part, footprint or package . On a manufactured board the body of a footprint is an epoxy-ink outline.
4	destructive testing	Sectioning a portion of printed circuit panel and examining the sections with a microscope. This is performed on coupons , not the funtional part of the PCB.
5	device	Any type of electrical component on a PC board. It will have functions and properties unique to its type. In a schematic (and the extracted BOM) , it will be labeled with a value or device number. There are two main classes of devices, passive and active .
6	DICY	Dicyandiamide, the most common cross-linking agent used in FR-4 . [Erik J. Bergum, "CAF Resistance of NON- DICY FR-4," PC FAB , 9/2002]
7	die	A chip . (Plural: dice)
8	dielectric constant	The ratio of the capacitance of a capacitor with the given dielectric to the capacitance of a capacitor having air for its dielectric but otherwise identical
9	differential signaling	A method of signal transmission through two wires which always have opposite states. The signal data is the polarity difference between the wires: Whenever either is high, the other is low. Neither wire is grounded
10	digital circuit	A circuit which operates like a switch (it is either "on" or "off"), and can make logical decisions. It is used in computers or similar decision making equipment.
11	diode	<p>1. A device, as a two-element electron tube or a semiconductor, through which current can pass freely in only one direction. [Random House]</p> <p>2. A semiconductor device with two terminals and a single junction, exhibiting varying conduction properties depending on the polarity of the applied voltage.</p>



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12	DIP	Abbreviation for Dual In-line Package. A type of housing for integrated circuits. The standard form is a molded plastic container of varying lengths and 0.3 inch wide (although there are other standard widths), with two rows of through-hole pins spaced 0.1 inch between centers of adjacent pins.
13	DNI	Do Not Install. Same use as DNP, which means "Do Not Populate "
14	DNP	Do Not Populate . This acronym is often used on schematics to show that a component shown in the circuit diagram is not actually placed and soldered on the finished printed circuit board during initial assembly. The footprint will be on the board, but no component will be there. This can allow an option for adding a componet of that size and shape later for experimentation and debuggin.
15	DOS	Disk Operating System. A program that controls the computer's transfer of data to and from a hard or floppy disk. Personal computers that are IBM-compatible run DOS rather than other early varieties of operating systems.
16	DOS-formatted	(Of magnetic data storage media, such as floppy disks.) Prepared for storage of data in such a way that DOS transfer can occur.
17	double-track	Slang for fine line design with two traces between DIP pins.
18	draw	1. v. To plot a line on film by moving the film while shining a light through an aperture. 2. n. A line plotted thus.
19	dry film solder mask	A solder mask film applied to a printed board with photographic methods. This method can manage the higher resolution required for fine line design and surface mount. It is more expensive than liquid photoimageable solder mask.
20	DUT	Device Under Test. A DUT board (probe card) is used in automated testing of integrated circuits. It is part of the interface between the chip and a test head, which in turn attaches to computerized test equipment. The specific test equipment used will determine the value of the controlled impedance required for the chip tester boards. Depending on which system it is designed for, one type of DUT board is used in testing individual integrated circuits in a silicon wafer before they are cut free and packaged, and another type is used for testing packaged IC 's.