INTERNATIONAL STANDARD

IEC 60194

Fourth edition
1999-04

Printed board design, manufacture and assembly –

Terms and definitions

Conception, fabrication et assemblage des cartes imprimées –

Termes et définitions

Withdrawn

iTeh Standards
(https://standards.iteh.ai)
Document Preview

IEC 60194:1999
https://standards.iteh.ai/catalog/standards/iec/fc2148cf-d0b0-4e95-873e-58f32fdb6618/iec-60194-1999

Reference number
IEC 60194:1999(E)

Numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series.

Consolidated publications

Consolidated versions of some IEC publications including amendments are available. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

Validity of this publication

The technical content of IEC publications is kept under constant review by the IEC, thus ensuring that the content reflects current technology.

Information relating to the date of the reconfirmation of the publication is available in the IEC catalogue.

Information on the subjects under consideration and work in progress undertaken by the technical committee which has prepared this publication, as well as the list of publications issued, is to be found at the following IEC sources:

- **IEC web site***
- **Catalogue of IEC publications**
  Published yearly with regular updates
  (On-line catalogue)*
- **IEC Bulletin**
  Available both at the IEC web site* and as a printed periodical

Terminology, graphical and letter symbols

For general terminology, readers are referred to IEC 60050: *International Electrotechnical Vocabulary* (IEV).

For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams.*

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 60194:1999
https://standards.iteh.ai/catalog/standards/iec/...-60194-1999

* See web site address on title page.

INTERNATIONAL STANDARD

IEC 60194

Fourth edition
1999-04

Printed board design, manufacture and assembly –

Terms and definitions

iTeh Standards
(https://standards.iteh.ai)
Document Preview

Conception, fabrication et assemblage des cartes imprimées –

Termes et définitions

IEC 60194:1999
https://standards.iteh.ai/catalog/standards/iec/b2148cf-d0b0-4e95-873e-58f32fdb6618/iec-60194-1999

Withdrawn

© IEC 1999 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site http://www.iec.ch

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE XE

For price, see current catalogue

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRINTED BOARD DESIGN, MANUFACTURE AND ASSEMBLY – TERMS AND DEFINITIONS

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

iTeh Standards (https://standards.iteh.ai) Document Preview IEC 60194:1999 https://standards.iteh.ai/catalog/standards/iec/f14bcf-d6b0-4695-8750-5b52fd8601b/iec-60194-1999 Withdrawn

International Standard IEC 60194 has been prepared by IEC technical committee 52: Printed circuits.

This fourth edition cancels and replaces the third edition published in 1988. This fourth edition constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
52/801/FDIS	52/806/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annexes A, B and C are for information only.

A bilingual version of this standard may be issued at a later date.

PRINTED BOARD DESIGN, MANUFACTURE AND ASSEMBLY –

TERMS AND DEFINITIONS

1 Scope

This International Standard defines the terminology used in the field of printed circuit boards and printed circuit board assembly products.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(541), *International Electrotechnical Vocabulary (IEV) – Chapter 541: Printed circuits*

iTeh Standards
(https://standards.iteh.ai)
Document Preview
Withdrawn

3 General

The terms have been classified according to the decimal classification code (DCC) and this DCC number appears to the right of the defined term. The DCC numbering is explained fully in annex A.

In order to avoid two ID numbers the usual practice of numbering every paragraph (every term and definition) in front of the paragraph has not been followed in this standard. The official IEC number is the number which follows the DCC and the period (21.xxxx). Annex B includes an index of terms listed numerically according to the DCC number. Annex C includes an index of terms listed alphabetically.

4 Terms and definitions

Abrasive trimming *54.1318*

Adjusting the value of a film component by notching it with a finely-adjusted stream of an abrasive material against the resistor surface.

Absorption coefficients *40.1727*

The degree to which various materials absorb heat or radiant energy when compared to each other.

Accelerated ageing *93.0001*

The means whereby the deterioration encountered in natural ageing is artificially reproduced and hastened.

Accelerator *53.0002*

See "Catalyst".

Acceptance quality level (AQL) *90.0003*

The maximum number of defectives likely to exist within a population (lot) that can be considered to be contractually tolerable; normally associated with statistically derived sampling plans.

Acceptance tests *92.0004*

Those tests deemed necessary to determine the acceptability of a product and as agreed to by both purchaser and vendor.

Access hole *60.1319*

A series of holes in successive layers of a multilayer board, each set having their centres on the same axis. These holes provide access to the surface of the land on one of the layers of the board.

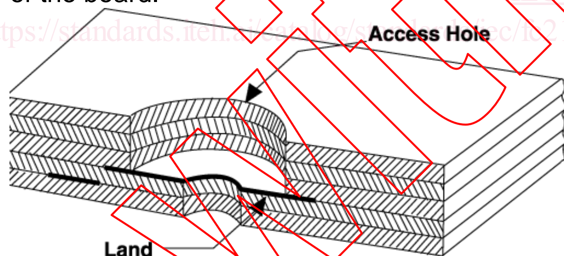


Figure A-1: Access Hole

Access holes *22.1619*

A series of holes in successive layers, each set having their centres on the same axis.

Access protocol *21.0005*

A method for establishing how nodes in a network communicate.

Accordion contact *36.0006*

A type of connector contact that consists of a flat spring formed into a "Z" shape in order to permit high deflection without overstress.

Accuracy *90.0007*

The deviation of the measured or observed value from the accepted reference.

Acid-core solder *46.0008*

Wire solder with a self-contained acid flux.

Acid flux *46.0009*

An aqueous solution of an acid and an inorganic, organic, or water-soluble flux. (See also "Inorganic flux", "Organic flux", and "Water-soluble flux".)

Acid number *54.0010*

The amount of potassium hydroxide in milligrams that is required to neutralize one gram of a substance.

Acid value *54.1217*

See "Acid number".

Actinic radiation *52.0011*

Light energy that reacts with a photosensitive material in order to produce an image.

Activated rosin flux *46.0012*

A mixture of rosin and small amounts of organic-halide or organic-acid activators. (See also "Synthetic activated flux".)

Activating *53.0013*

A treatment that renders non-conductive material receptive to electroless deposition.

Activating layer *53.0014*

A layer of material that renders a non-conductive material receptive to electroless deposition.

Activator *46.0015*

A substance that improves the ability of a flux to remove surface oxides from the surfaces being joined.

Active device *30.0016*

An electronic component whose basic character changes while operating on an applied signal. (This includes diodes, transistors, thyristors and integrated circuits that are used for the rectification, amplification, switching, etc. of analog or digital circuits in either monolithic or hybrid form.)

Active metal *36.0017*

A metal that is very high in electromotive force.

Active trimming *54.1321*

Adjusting the value of a film circuit element in order to obtain a specified functional output from the circuit while it is electrically activated. (See also "Functional trimming".)

Actual size *90.0018*

The measured size.

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 60194:1999
https://standards.iteh.ai/catalog/standards/iec/...

Additive process *53.1322*

A process for obtaining conductive patterns by the selective deposition of conductive material on clad or unclad base material. (See also "Semi-additive process" and "Fully-additive process".) *[IEV 541-04-03, modified]*

Add-on component *30.0019*

Discrete or integrated packaged or chip components that are attached to a film circuit in order to complete the circuit's function.

Adhesion failure *96.0020*

The rupture of an adhesive bond such that the separation appears to be at the adhesive-adherend interface.

Adhesion layer *74.0021*

The metal layer that adheres a barrier metal to a metal land on the surface of an integrated circuit.

Adhesion promotion *53.0022*

The chemical process of preparing a surface to enhance its ability to be bonded to another surface or to accept an over-plate.

Adhesive *46.1728*

A substance such as glue or cement used to fasten objects together. In surface mounting, an epoxy adhesive is used to adhere SMD's to the substrate.

Adhesive-coated catalyzed laminate *41.1320*

A base material with a thin polymer coating, that contains a plating catalyst, that is subsequently treated in order to obtain a microporous surface.

Adhesive-coated uncatalyzed laminate *41.1323*

A base material with a thin polymer coating, that does not contain a plating catalyst, that is subsequently treated in order to obtain a microporous surface.

Adsorbed contaminant *96.0023*

A contaminant attracted to the surface of a material that is held captive in the form of a gas, vapor or condensate.

Advanced statistical method *91.0024*

A statistical process analysis and control technique that is more sophisticated and less widely applicable than basic statistical methods.

Ageing *90.0025*

The change of a property, for example solderability, with time. (See also "Accelerated ageing".)

Air contamination *14.0026*

See "Air pollution".

Air pollution *14.0027*

Contamination of the atmosphere with substances that are toxic or otherwise harmful.

Algorithm *11.0849*

A set of procedures for the solution of a problem in a series of steps.

Alignment mark *22.0030*

A stylized pattern that is selectively positioned on a base material to assist in alignment.

Aliphatic solvents *76.0031*

"Straight chain" solvents, derived from petroleum, of low solvent power.

Alkaline cleaner *76.0032*

A material blended from alkali hydroxides and alkaline salts.

Alpha error *91.0033*

The size of a Type I error or the probability of rejecting a hypothesis that is true.

Alphanumerical *25.1729*

Pertaining to data that contain the letters of an alphabet, the decimal digits, and may contain control characters, special characters and the space character.

Alternating current (a.c.) *21.1793*

A current that varies with time, commonly applied to a power source that switches polarity many times per second, in the shape of a sinusoidal, square, or triangular wave.

Alternative hypothesis *93.1324*

The supposition that a significant difference exists between the desired results of two comparable populations. (See also "Null hypothesis" and "Statistical hypothesis".)

Alumina substrate *43.1730*

Aluminum oxide used as a ceramic substrate material.

Ambient *29.0034*

The surrounding environment coming into contact with the system or component in question.

Amorphous polymer *40.0035*

A polymer with a random and unstructured molecular configuration.

Amplitude, voltage *21.0036*

The magnitude of a voltage as measured with respect to a reference, such as a ground plane.

Analog circuit *21.0037*

An electrical circuit that provides a continuous relationship between its input and output.

Withdrawn
iTeh Standards (https://standards.iteh.ai) Document Preview
IEC 60194:1999

Analysis of variance (ANOVA) *91.0038*

The systematic method of statistically evaluating experimental results in order to separate the sources of variation.

Anchoring spur *22.1325*

An extension of a land on a flexible printed board that extends beneath the cover lay to assist in holding the land to the base material.

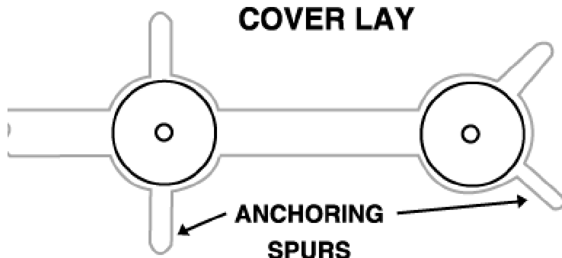


Figure A-2: Lands with anchoring spurs

Angled bond *74.0039*

The impression of the first and second bonds that are not in a straight line.

Annotation *22.0040*

The process of inserting text, notes, or other identification on a drawing, map or diagram constructed on a computer-aided system.

Annular ring *60.0041*

That portion of conductive material completely surrounding a hole.

Anodic cleaning *57.0042*

Electrolytic cleaning in which the work is the anode.

Apparent field-of-view angle *92.0043*

The angular subtend of the field-of-view in the image space of an optical system.

Aqueous flux *46.0044*

See "Water-soluble flux".

Aramid *44.0045*

See "Para-aramid".

Architecture *11.0046*

The structure of a computer's functional elements that makes it possess specific maximum and minimum capabilities.

Arc resistance *92.0047*

The resistance of a material to the effects of a high voltage, low current arc (under prescribe conditions) passing across the surface of the material. (The resistance is stated as a measure of total elapsed time at that voltage required to form a conductive path on the surface material carbonized by the arc.)

Area array tape automated bonding *74.0048*

Tape automated Bonding where some carrier tape terminations are made to lands within the perimeter of the die.

Array *22.0049*

A group of elements or circuits arranged in rows and columns on a base material.

Artificial intelligence *11.0050*

The capacity of a machine to perform functions that are normally associated with human intelligence, such as reasoning and learning.

Artwork *22.0051*

An accurately-scaled configuration that is used to produce the "Artwork master" or "Production master".

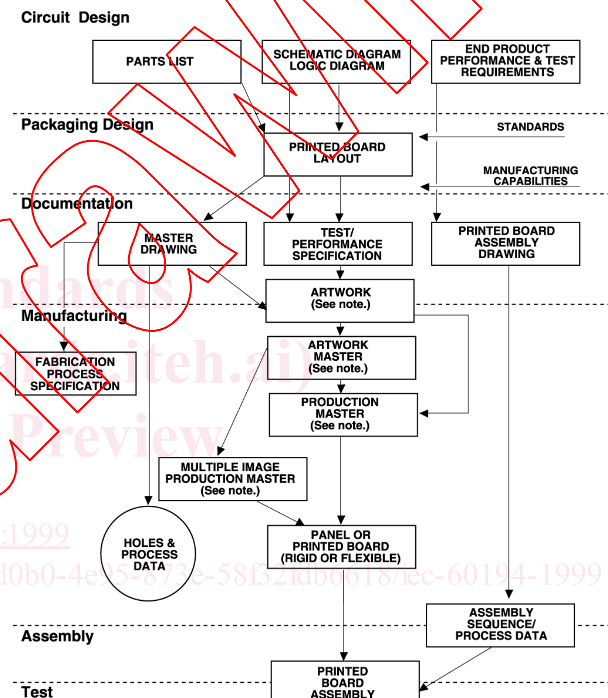


Figure A-3: Simplified flow chart of printed board design / fabrication sequence

Artwork master *24.1633*

An accurately scaled configuration used to produce the original production master; the scale is chosen to provide the necessary accuracy.

Artwork master *24.0052*

An accurately-scaled, usually 1:1, pattern that is used to produce the "Production master". *[IEV 541-04-03, modified]*

As-fired *45.0054*

Values of thick-film components or the smoothness of ceramic base materials after they have been processed in a firing furnace and prior to trimming or polishing.

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 60194:1999
https://standards.iteh.ai/catalog/standards/iec/fc2148cf-d0b0-4e95-873e-58f521db6618/iec-60194-1999
Withdrawn

Aspect ratio (Film) *74.0055*

The ratio of the length of a film component to its width.

Aspect ratio (Hole) *53.0056*

The ratio of the length or depth of a hole to its preplated diameter.

Assembled board *80.0057*

See "Assembly".

Assembly *80.1327*

A number of parts, subassemblies or combinations thereof joined together.
NOTE – This term can be used in conjunction with other terms listed herein, for example "Printed board assembly").

Assembly drawing *26.1328*

A document that depicts the physical relationship of two or more parts, a combination of parts and subordinate assemblies, or a group of assemblies required to form an assembly of a higher order.

Assembly language *11.0058*

A computer language made up of brief expressions that an assembler program can translate into a machine language.

Assignable cause *91.0059*

See "Special cause".

Asymmetric stripline *21.0060*

A stripline signal conductor that is embedded, but not centred, between two ground planes.

Attenuation *21.0061*

The reduction in the amplitude of a signal due to losses in the media through which it is transmitted.

Attributes data *94.0062*

Qualitative data that can be counted for recording and analysis purposes.

Automated component insertion *72.0063*

The act or operation of assembling discrete components to printed boards by means of electronically-controlled equipment.

Automatic component placement *22.0029*

Software that automatically optimizes the layout of components on a printed board.

Automatic conductor routing *22.0124*

Software that automatically determines the placement of interconnections on a printed board.

Automatic dimensioning *25.1329*

A computer-aided drafting function that automatically generates dimensions, leaders, arrowheads, etc. that make up a complete set of documented dimensions.

Automatic test equipment *92.0064*

Equipment that automatically analyzes functional or static parameters in order to evaluate performance.

Automatic test generation *92.0065*

Computer generation of a test program based solely on circuit topology with little or no manual programming effort.

AWG equivalent *92.0066*

The American Wire Gauge (AWG) round-conductor number that is used to designate a flat conductor with an equal cross-sectional area.

Axial lead *31.0067*

Lead wire extending from a component or module body along its longitudinal axis.

Azeotrope *49.0068*

See "Azeotropic mixture".

Azeotropic mixture (Azeotrope) *49.1330*

A liquid mixture of two or more substances that behaves like a single substance. The vapour produced by partial evaporation of the liquid has the same composition as the liquid.

Back annotation *21.0072*

The process of extracting appropriate information from a completed printed board design and inserting it on the boards schematic diagram.

Back-bared land *22.0071*

A land in flexible printed wiring that has a portion of the side normally bonded to the base dielectric material exposed by a clearance hole.

Back bonding *74.0073*

Attaching a die to a base material with its circuitry facing away from the base material.

Backdriving *92.0074*

An in-circuit testing technique that drives digital circuitry outputs to a given logic level, by supplying pulses of sufficient electrical current magnitude in parallel with the outputs, in order to overdrive the logic state conditions of the next digital device inputs.

Backfill *36.0075*

Filling a hybrid circuit package with a dry inert gas prior to hermetic sealing.

Withdrawn
iTeh Standards (https://standards.iteh.ai) Document Preview
IEC 60194:1999

Background (Artwork) *22.0076*

The non-functional area of a phototool.

Background variable *94.0077*

A parameter of no experimental interest that is not held at a constant value.

Backlighting *24.0078*

Viewing or photographing by placing an object between a light source and the eye or recording medium.

Back mounting *74.0079*

See "Back bonding".

Backpanel *85.0080*

See "Backplane".

Backplane *85.1331*

An interconnection device used to provide point-to-point electrical interconnections. (It is usually a printed board that has discrete wiring terminals on one side and connector receptacles on the other side.) (See also "Mother board".)

Back taper(s) *51.0081*

The constant decrease in diameter along the length of the body of a drill.

Backward crosstalk *21.1332*

Noise induced into a quiet line, as seen at the end of the quiet line that is closest to the signal source, because the quiet line has been placed next to an active line. (See also "Forward crosstalk".)

Bake out *56.0082*

Subjecting a product to an elevated temperature in order to remove moisture and unwanted gasses prior to final sealing.

Balanced transmission line *21.1333*

A transmission line that has distributed inductance, capacitance, resistance, and conductance elements that are equally distributed between its conductors.

Ball bond *74.0083*

The thermocompression termination of the ball-shaped end of an interconnecting wire to a land. (See also "Wedge bond".)

Bar code marking *70.1731*

An identification code consisting of a pattern of vertical bars whose width and spacing identifies the item marked.

Bare board *60.0084*

An unassembled (unpopulated) printed board.

Barrier metal *74.0085*

A metal used to seal the semiconductor-die lands.

Baseline dimensioning *26.0086*

The maximum variation between two features that is equal to the sum of the tolerances on the two dimensions from their origin to the features.

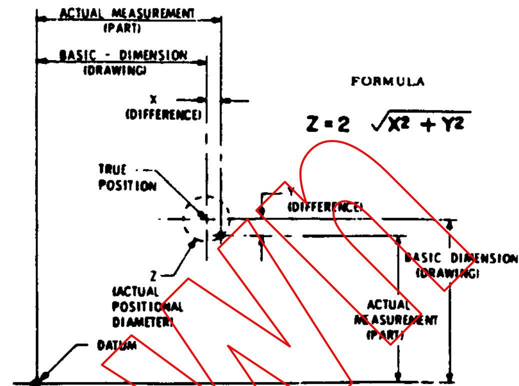


Figure B-1: Example of feature location using baseline dimensions

Base material *40.1334*

The insulating material upon which a conductive pattern may be formed. (The base material may be rigid or flexible, or both. It may be a dielectric or insulated metal sheet.) *[IEV 541-04-03, modified]*

Base material thickness *33.0087*

The thickness of the base material excluding metal foil or other material deposited on its surfaces.

Base material thickness *22.1604*

The thickness of the base material excluding conductive foil or material deposited on the surfaces.

Base metal *45.0088*

See "Basis metal".

Base solderability *92.0089*

The ease with which a metal or alloy can be wetted by solder under minimum realistic conditions.

Basic dimension *26.1335*

A numerical value used to describe the theoretical exact location of a feature or hole. (It is the basis from which permissible variations are established by tolerance on other dimensions in notes or by feature-control symbols.)

Basic specification (BS) *26.1778*

A document that describes the common elements for a set, family or group of products, materials, or services.

Withdrawn
iTeh Standards (https://standards.iteh.ai) Document Preview
IEC 60194:1999

Basic statistical method *91.1336*

The application of a theory of variation through the use of basic problem-solving techniques and statistical process control. (This includes control and capability analysis for both variables and attributes data.)

Basic wettability *70.0090*

The ease with which a specific metal or alloy can be wetted by solder.

Basis material *40.0091*

Material upon which coatings are deposited.

Basis metal *45.0092*

A metal upon which coatings are deposited.

Batch oven *56.0093*

A large temperature-controlled oven that is used to heat clean rolls of fabric.

Batch processing *11.0094*

Executing a computer-aided program without human input.

Batch size *17.0095*

See "Lot size".

Bathtub curve *93.0096*

A plot of failures versus time.

Baume *92.0097*

An arbitrary scale of specific gravities used in the gradation of hydrometers.

Beaming *44.0099*

The operation in which yarn from several section beams is combined on the final warp beam.

Beam lead *33.0100*

A component terminal in the form of a long metallic structural member that is not supported along its length.

Beam-lead device *33.0098*

An active or passive chip component with beam leads for interconnecting it to lands on a base material.

Bed-of-nails fixture *92.0101*

A test fixture consisting of a frame and a holder containing a field of spring-loaded pins that make electrical contact with a planar test object.

Bellows contact *36.1337*

A type connector contact that consists of a flat spring that has been folded to provide a very uniform spring rate over the full tolerance range of the mating part.

Benchmark, computer *11.0102*

A standard measure of the performance of computers relative to each other, including set-up time, program generation, and data processing capability.

Benchmark, testing *92.0103*

A standard measure of the performance of testers relative to each other, including set-up time, test program generation, and fixturing.

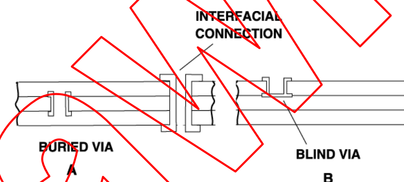
Beta error *91.0104*

The size of a Type II error or the probability of accepting a hypothesis that is false.

Bias (Fabric) *44.0105*

Filling yarn that is off-square with the warp ends of a fabric.

Bifurcated contact *36.1810*



A type of connector contact that usually consists of a flat spring that has been slotted length-wise in order to provide independent contact points with the mating part.

Figure B-2: Bifurcated solder terminal

Bifurcated solder terminal *37.0106*

A solder terminal with a slot or slit opening through which one or more wires are placed prior to soldering.

Binder *47.0107*

Material added to thick-film compositions and unfired base materials to give them additional strength for pre-fire handling. (See also "Glass binder".)

Binomial distribution *94.0108*

A discrete probability distribution that, with certain assumptions, describes the way that attributes (proportions) vary.

Biochemical oxygen demand *92.0109*

A standardized means for estimating the degree of contamination of water.

Biocide *76.0110*

A general name for any substance that kills or inhibits the growth of micro-organisms.

Birdcage *37.1338*

A defect in stranded wire whereby the strands in the stripped portion between the covering of an insulated wire and a soldered connection, or an end-tinned lead, have separated from the normal lay of the strands.

Withdrawn
iTeh Standards (https://standards.iteh.ai) Document Preview
IEC 60194:1999

Bismaleimide *41.0111*

A resin that has the generic chemical structure of an aromatic chemical group that is attached to two (or "Bis")maleimide groups.

Bismaleimide triazine *41.0112*

A resin that contains a mixture of bismaleimide and triazine resins.

Blank *41.1339*

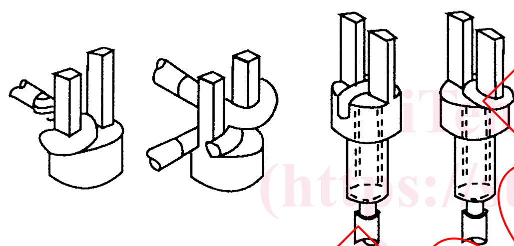
An unprocessed or partially processed piece of base material or metal-clad base material, that has been cut from a sheet or panel, that has the rough dimensions of a printed board. (See also "Panel".)

Bleeding *52.0113*

A condition in which a plated hole discharges process material or solution from crevices or voids or a condition in which a resist migrates beyond the image area.

Blends *41.0114*

Mixtures of resins.



Picture B-3: Blind and buried vias

Blind via *22.0115*

A via extending only to one surface of a printed board.

Blister *96.1340*

Delamination in the form of a localized swelling and separation between any of the layers of a lamination base material, or between base material and conductive foil or protective coating.

Blocking variables *94.0116*

A relatively homogeneous set of conditions within which different conditions of primary variables are compared.

Blow hole *53.0117*

A void caused by outgassing.

Board *60.0118*

See "Printed board" and "Multilayer printed board".

Board thickness *22.0119*

The overall thickness of the base material and all conductive materials deposited thereon.

Body land clearance *51.1341*

That portion of the land diameter of a drill that is decreased in order to provide clearance behind the margin.

Bond *74.0120*

An interconnection that performs a permanent electrical and/or mechanical function.

Bondability *74.1342*

Those surface characteristics and conditions of cleanliness of a bonding area that must exist in order to provide for the capability to achieve a successful termination.

Bond deformation *74.0123*

The plastic-flow change in the form of a lead caused by a bonding tool during a termination process.

Bond enhancement treatment *74.0125*

The improvement of the adhesion of a metal foil surface to an adjacent layer of material to which it is being attached.

Bond envelope *74.0126*

The range of termination parameters within which acceptable bonds may be formed.

Bonding, die *74.0127*

See "Die Bonding".

Bonding area *74.0128*

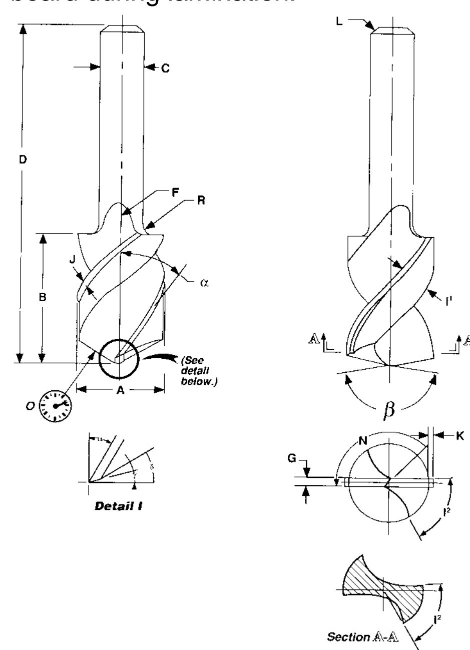
The area defined by the extent of a land or portion of a terminal to which a lead is to be bonded.

Bonding island *74.0129*

See "Bonding area".

Bonding layer *55.0130*

An adhesive layer used in bonding together other discrete layers of a multilayer printed board during lamination.



Picture B-4: Drill features

Withdrawn
iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 60194:1999

Bonding tool *74.0131*

The instrument used to position leads or discrete wires over a land and to impart sufficient energy to complete the termination.

Bonding wire *74.0132*

Fine gold or aluminum wire used for making electrical connections between lands, lead frames, and terminals.

Bond interface *74.0133*

The common area between a lead and a land to which it has been terminated.

Bond land *74.0134*

See "Bonding area".

Bond lift-off *74.0135*

The failure mode whereby a bonded lead separates from the surface to which it has been joined.

Bond schedule *74.0136*

The values of termination machine parameters.

Bond separation *74.0137*

The distance between the termination points of the first bond and the second bond.

Bond site *74.0138*

That portion of the bonding area where the actual termination takes place.

Bond strength *60.0139*

The force perpendicular to a board's surface required to separate two adjacent layers of the board, expressed as force per unit area.

Bond surface *74.0141*

See "Bonding area".

Bond-to-bond distance *74.0121*

The distance from the bonding site on a die to the corresponding bonding site on a lead frame, interconnecting base material, etc.

Bond-to-die distance *74.0122*

The distance from the heal of a beam lead to the die.

Border area *22.0142*

The region on a base material that is external to that of the end-product being fabricated within it.

Border data *22.0143*

Patterns that appear in the border area, such as tooling features, test patterns, and registration marks.

Boss *22.0144*

See "Land".

Boss (Connector) *37.0145*

A raised section on a connector that fits into a specific slot in the positive polarization or keying feature of a mating connector.

Bow (Fabric) *44.0146*

Filling yarn that lies in an arc across the width of a fabric.

Bow (Sheet, panel, or printed board) *60.1218*

The deviation from flatness of a board characterized by a roughly cylindrical or spherical curvature such that, if the product is rectangular, its four corners are in the same plane. (See also "Twist".)

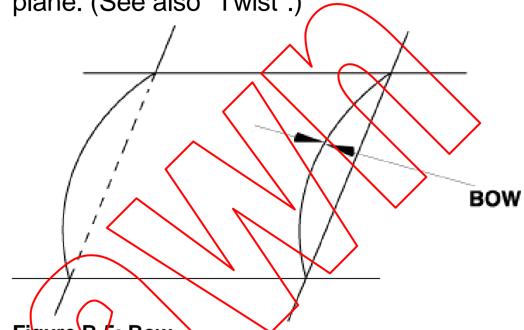


Figure B-5: Bow

Brainstorming *94.0147*

The generation of an all-inclusive list of potential causal factors that are possible contributors to process problems.

Breakout *60.0148*

See "Hole breakout".

Bridging, electrical *70.0149*

The unintentional formation of a conductive path between conductors. (See also "Solder bridging".)

Brightness *24.0150*

See "Luminance".

Broken pick *35.0151*

A filling yarn that is missing from a portion of the width of a fabric.

Brominated epoxy *41.0152*

An epoxy resin containing chemically-bound bromine.

B-stage *41.1343*

An intermediate stage in the reaction of a thermosetting resin in which the material softens when heated and swells, but does not entirely fuse or dissolve, when it is in contact with certain liquids. (See also "C-staged resin".)

B-staged material *41.0069*

See "Prepreg".

B-staged resin *41.0070*

A thermosetting resin that is in an intermediate state of cure. (See also "C-staged resin".)

Bubble effect *76.0153*

The entrapment of air, solvent or moisture bubbles in a protective coating.

Buffer material *76.0154*

A resilient material that is used to protect a crack-sensitive component from the stresses generated by a conformal coating.

Bugging height *74.0155*

The distance between a land and the lower surface of a beam lead caused by the deformation of the lead during bonding.

Bulge *60.0156*

A swelling of a printed board that is usually caused by internal delamination or separation of fibers.

Bulk conductance *92.0157*

Conductance between two points of a homogeneous material.

Bulls-eye *20.0158*

A stylized pattern that is located in the border area in order to aid in alignment.

Bump (Die) *74.0159*

A raised metal feature on a die land or tape carrier tape that facilitates inner-lead bonding.

Bumped die *74.0160*

A semiconductor die with raised metal features that facilitate inner-lead bonding.

Bumped tape *74.0161*

Carrier tape with raised metal features that facilitate inner-lead bonding.

Bumped wafer *74.0162*

A semiconductor wafer with raised metal feature on its die lands that facilitate inner-lead bonding.

Buried via *22.0163*

A via that does not extend to the surface of a printed board.

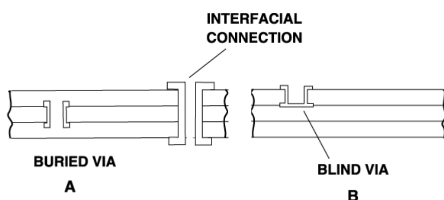


Figure B-3: Blind and buried vias

Burn-in *95.0164*

The process of electrically stressing a device at an elevated temperature, for a sufficient amount of time to cause the failure of marginal devices (infant mortality).

Burn-in, dynamic *95.0165*

Burn-in at high temperatures that simulates the effects of actual or simulated operating conditions.

Burn-in, static *95.0166*

Burn-in at high temperatures with unvarying voltage, either forward or reverse bias.

Burn-off *74.0167*

See "Flame-off".

Bus *21.0168*

One or more conductors used for transmitting data signals or power.

Bus bar *37.0169*

A conduit, such as a component or conductor on a printed board, that is used for distributing electrical energy. (See also "Plating bar".)

Butter coat *41.0170*

An increased amount of resin on the outer surface of a base material.

Butt lead *36.1732*

A surface mounted component lead form in which the lead contacts its respective land areas at between 45° and 90° to the plane of the substrate.

Camber *92.0172*

The planar deflection of a flat cable or flexible laminate from a straight line.

Capability detail specification (CapDS) *26.1780*

A document that establishes the specific requirements, noted in a detailed specification, in order to establish the level of capability that a manufacturer possesses when he has demonstrated that he has met those requirements.

Capability index (Cp) *91.0306*

See "Capability performance index".

Capability performance, lower (Cpkl) *91.1367*

A measure of the relationship between the performance of a process and the lower specification limit. (See also "Capability performance, upper".)

Capability performance, upper (Cpku) *91.1344*

A measure of the relationship between the performance of a process and the upper specification limit. (See also "Capability performance, lower".)

Capability performance index *79.1806*

The ratio of the measured performance of a process compared to specified limits.

Withdrawn
iTeh Standards (https://standards.iteh.ai) Document Preview
IEC 60194:1999
https://standards.iteh.ai/catalog/standards/iec/c8148cf-d0b0-4e95-873e-58f32fdb6618/iec-60194-1999