



ASSOCIATION CONNECTING
ELECTRONICS INDUSTRIES

IPC-1902/IEC 60097

Grid Systems for Printed Circuits

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An IEC standard adopted by IPC

Grid Systems for Printed Circuits

1 SCOPE

This International Standard relates to grid systems for printed circuits to ensure compatibility between the printed circuits and parts to be mounted on them at the intersections of the grid.

2 NORMATIVE REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IPC-T-50 Terms and Definitions for Printed Circuits.

IEC 321: 1970 Guidance for the design and use of components intended for mounting on boards with printed wiring and printed circuits.

3 TERMINOLOGY

3.1 Grid An orthogonal network of two sets of parallel equidistant lines for positioning connections on a printed board (see IPC-T-50).

3.2 For definitions of other terms, see IPC-T-50.

4 USE OF GRID SYSTEMS FOR PRINTED BOARDS

By definition, the connections of the components to be mounted on a printed board are positioned at the intersections of the grid lines.

The center distances of these connections will be integer multiples of the grid spacings, for example:

- $n \times 0.05$ mm, $n \times 0.5$ mm (millimeter-based grid), or
- $n \times 0.635$ mm, $n \times 2.54$ mm (inch-based grid)

where n is an integral number 1, 2, 3, ...

For other features of printed boards, for example land patterns for test purposes or surface mounted devices, the same principle shall be used.

For information regarding component terminations, see IEC 321.

NOTE: It is recommended that persons who are responsible for the dimensional standardization of components should, whenever possible, avoid using metric dimensions close to dimensions based on inch measurements. When this is impossible, the metric component should be marked with the letter M for identification. See Appendix A.

5 PREFERRED GRID SYSTEM

5.1 For positioning connections on a printed board, a grid with a nominal spacing in the two directions of 0.5 mm shall be used.

5.2 Where a grid with a nominal spacing of 0.5 mm is not adequate, a grid with a nominal spacing in the two directions of 0.05 mm shall be used.

This grid shall not be further subdivided.

6 ALTERNATIVE GRID SYSTEM

It is recognized that the previous editions of this standard contained (but were not limited to) an inch-based grid. Where it is necessary to continue to use this grid (for example, to maintain compatibility with existing printed boards and components), the following shall apply (3.1.1 and 3.1.2 of IEC 97, third edition, 1970).

6.1 For positioning connections on a printed board, a grid with nominal spacings in the two directions of 2.54 mm shall be used.

6.2 Where a grid with smaller spacings is necessary, 0.635 mm shall be used.

This secondary grid shall not be further subdivided.

NOTE: The following millimeter-inch equivalents apply:

- 2.54 mm = 0.1 inch; - 0.635 mm = 0.025 inch.