IPC-6012C-2010

Qualification and Performance Specification for Rigid Printed Boards

Developed by the Rigid Printed Board Performance Specifications Task Group (D-33a) of the Rigid Printed Board Committee (D-30) of IPC

Supersedes:
IPC-6012B with
Amendment 1 - July 2007
IPC-6012B - August 2004
IPC-6012A with
Amendment 1 - July 2000
IPC-6012A - October 1999
IPC-6012 - July 1996
IPC-RB-276 - March 1992

Users of this publication are encouraged to participate in the development of future revisions.

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Qualification and Performance Specification for Rigid Printed Boards

1 SCOPE

1.1 Statement of Scope This specification establishes and defines the qualification and performance requirements for the fabrication of rigid printed boards.

1.2 Purpose The purpose of this specification is to provide requirements for qualification and performance of rigid printed boards based on the following constructions and/or technologies:

- Single-sided, double-sided printed boards with or without plated-through holes (PTHs).
- Multilayer printed boards with PTHs with or without buried/blind vias.
- Multilayer printed boards containing build up High Density Interconnect (HDI) layers conforming to IPC-6016.
- Active embedded passive circuitry printed boards with distributive capacitive planes and/or capacitive or resistive components.
- Metal core printed boards with or without an external metal heat frame, which may be active or nonactive.

1.2.1 Supporting Documentation IPC-A-600, which contains figures, illustrations and photographs that can aid in the visualization of externally and internally observable acceptable/nonconforming conditions, may be used in conjunction with this specification for a more complete understanding of the recommendations and requirements.

1.3 Performance Classification and Type

1.3.1 Classification This specification establishes acceptance criteria for the performance classification of rigid printed boards based on customer and/or end-use requirements. Printed boards are classified by one of three general Performance Classes as defined in IPC-6011.

1.3.1.1 Requirement Deviations Requirements deviating from these heritage classifications **shall** be as agreed between user and supplier (AABUS).

1.3.1.2 Space and Military Avionics Deviations Space and Military Avionics performance classification deviations are defined and listed in Appendix A of this specification. These are commonly referred to as Class 3/A.

1.3.2 Printed Board Type Printed boards without PTHs (Type 1) and with PTHs (Types 2-6) are classified as follows:

Type 1—Single-Sided Printed Board
Type 2—Double-Sided Printed Board
Type 3—Multilayer Printed Board without blind or buried vias
Type 4—Multilayer Printed Board with blind and/or buried vias
Type 5—Multilayer metal core Printed Board without blind or buried vias
Type 6—Multilayer metal core Printed Board with blind and/or buried vias

1.3.3 Selection for Procurement Performance class **shall** be specified in the procurement documentation.

The procurement documentation **shall** provide sufficient information to fabricate the printed board and ensure that the user receives the desired product. Information that should be included in the procurement documentation is to be in accordance with IPC-D-325.