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

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.