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Qualification and Performance Specification for Rigid Printed Boards

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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. These requirements apply to the finished product unless otherwise specified:

- Single-sided, double-sided printed boards with or without plated-through holes (PTHs).
- Multilayer printed boards with PTHs with or without buried/blind vias/microvias.
- Active/passive embedded 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 non-active.

1.2.1 Supporting Documentation

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 Requirement Deviations Space performance classification deviations are provided in the IPC-6012XS Addendum (where "X" is applicable revision published at time of procurement) and is applicable when the addendum is specified within the procurement documentation. Any amendments to the base IPC-6012 published after an Addendum do not extend to that Addendum.

1.3.1.3 Medical Requirement Deviations Medical performance classification deviations are provided in the IPC-6012XM Addendum (where "X" is applicable revision published at time of procurement) and is applicable when the addendum is specified within the procurement documentation. Any amendments to the base IPC-6012 published after an Addendum do not extend to that Addendum.

1.3.1.4 Automotive Requirement Deviations Automotive performance classification deviations are provided in the IPC-6012XA Addendum (where "X" is applicable revision published at time of procurement)) and is applicable when the addendum is specified within the procurement documentation. Any amendments to the base IPC-6012 published after an Addendum do not extend to that Addendum.

1.3.2 Printed Board Type Printed boards without PTHs (Type 1) and with PTHs (Types 2-6) are classified as follows and may include technology adders as described in Table 1-1.

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 (may include microvias)
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 (may include microvias)