IPC-2231A

2021 - August

DFX Guidelines

Supersedes IPC-2231
April 2019

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- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

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DFX Guidelines

Developed by the 1-14 DFX Subcommittee of the 1-10 Printed Board Design Committee of IPC

Supersedes:
IPC-2231 - April 2019

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

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Acknowledgment

Any document involving a complex technology draws material from a vast number of sources across many continents. While the principal members of the 1-14 DFX Subcommittee of the 1-10 Printed Board Design Committee are shown below, it is not possible to include all of those who assisted in the evolution of this standard. To each of them, the members of the IPC extend their gratitude.

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Design for Excellence (DFX) Guidelines

1 SCOPE

This document provides guidelines for establishing a best practice methodology for use in developing a formal DFX (Design for Manufacturing, Fabrication, Assembly, Testability, Cost, Reliability, Environment, Reuse) process for layout of printed board assemblies that utilize surface mount and through hole devices.

1.1 Purpose The document provides a DFX process framework to establish a discipline of design review necessary to perform a detailed analysis of manufacturability attributes commonly found in electronics hardware for fabrication and around which to model a printed board assembly.

1.2 Goals of This Document The goals of this document are to:

- Use a multi-discipline engineering assessment tactic on elements influencing DFX.
- Allow the user to establish standardized DFX checklist(s) for major design elements such as bare printed board fabrication, printed board assembly manufacturing, electrical testability, and elements influencing product reliability, reuse, and impact on environment.

1.3 Limitations of This Document Electronics hardware defined under this DFX review process is limited to features of influence on DFX for bare printed board and printed board assembly.

2 APPLICABLE DOCUMENTS

2.1 IPC[1]

J-STD-001 Requirements for Soldered Electrical and Electronic Assemblies

IPC-T-50 Terms and Definitions for Interconnecting and Packaging Electronic Circuits

IPC-CH-65 Guidelines for Cleaning of Printed Boards and Assemblies

IPC-D-279 Design Guidelines for Reliable Surface Mount Technology Printed Board Assemblies

IPC-D-325 Documentation Requirements for Printed Boards, Assemblies and Support Drawings

IPC-A-610 Acceptability of Electronic Assemblies

IPC-A-630 Acceptability Standard for Manufacture, Inspection, and Testing of Electronic Enclosures

IPC-SM-785 Guidelines for Accelerated Reliability Test of Surface Mount Solder Attachments

IPC-CC-830 Qualification and Performance of Electrical Insulating Compound for Printed Wiring Assemblies

IPC-2221 Generic Standard on Printed Board Design

IPC-2222 Sectional Design Standard for Rigid Organic Printed Boards

IPC-2223 Sectional Design Standard for Flexible Printed Boards

IPC-2224 Sectional Standard for Design of PWBs for PC Cards

IPC-2225 Sectional Design Standard for Organic Multichip Modules (MCM-L) and MCM-L Assemblies

IPC-2226 Sectional Design Standard for High Density Interconnect (HDI) Printed Boards

IPC-2581 Generic Requirements for Printed Board Assembly Products Manufacturing Description Data and Transfer Methodology

IPC-2615 Printed Board Dimensions and Tolerances

IPC-4761 Design Guide for Protection of Printed Board Via Structures

IPC-6012 Qualification and Performance Specification for Rigid Printed Boards

IPC-7351 Generic Requirements for Surface Mount Design and Land Pattern Standard

IPC-7525 Guidelines for Stencil Design

1 www.ipc.org