IPC-2223E

2020 - January

Sectional Design Standard for Flexible/Rigid-Flexible Printed Boards

Supersedes IPC-2223D
September 2016

An international standard developed by IPC

Association Connecting Electronics Industries

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Standards Should:

- Show relationship to Design for Manufacturability (DFM) and Design for the Environment (DFE)
- Minimize time to market
- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

Standards Should Not:

- Inhibit innovation
- Increase time-to-market
- Keep people out
- Increase cycle time
- Tell you how to make something
- Contain anything that cannot be defended with data

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Developed by the Flexible Circuits Design Subcommittee (D-11) of the Flexible Circuits Committee (D-10) of IPC

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

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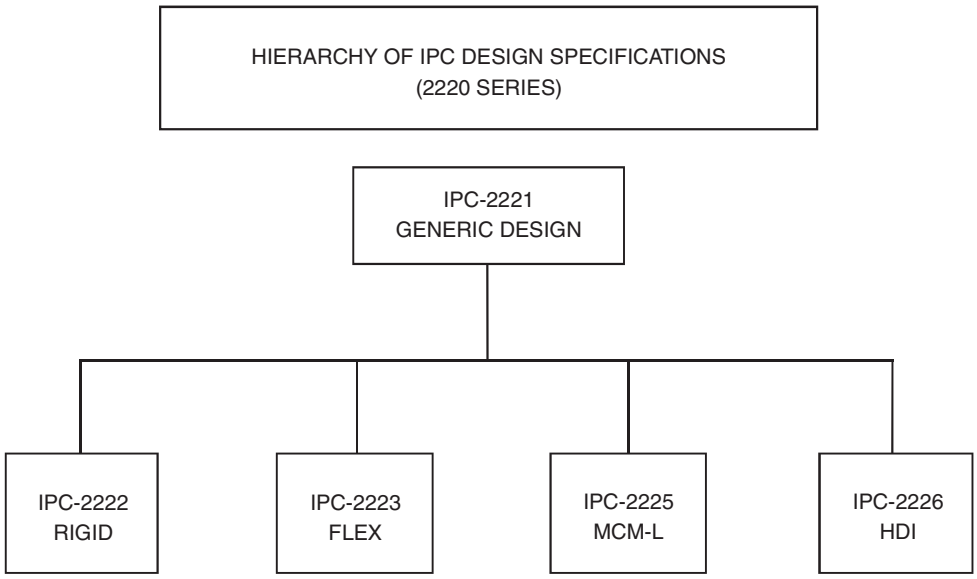

Foreword

This standard is intended to provide information on the detailed requirements for flexible printed wiring design. All aspects and details of the design requirements are addressed in this sectional.

The information contained herein is intended to supplement generic design requirements identified in IPC-2221. This sectional standard, used in conjunction with IPC-2221, supersedes IPC-2223.

Benefits of Flex

Due to the thin films used in flexible circuitry, flex can save weight and space and conform to three-dimensional configurations.

Printed circuits in flex can be fanned out to allow the use of different connectors and folded to change orientation.

A number of flexible dielectrics are available (e.g., polyimide, polyester, polyetherimide), some of which can offer thermal stability, while others can be used in low cost applications.

The thermal stability of polyimide flexible circuits allows the use of through hole and or surface mount components. Polyester circuits can offer lower cost circuits with limited component usage. Polyester is typically used for low soldering temperature applications.

The flexibility of these circuits can allow movement for ease in installation and/or maintenance during use.

A combination of flexible circuitry and rigid PCB technology can be combined for improved packaging in confined spaces through interconnect elimination/simplification.

Acknowledgment

Any document involving a complex technology draws material from a vast number of sources across many continents. While the principal members of the Flexible Circuits Design Subcommittee (D-11) of the Flexible Circuits Committee (D-10) 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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