Performance guide
Manual for single- and double-sided flexible printed wiring boards

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PERFORMANCE GUIDE MANUAL FOR SINGLE- AND DOUBLE-SIDED FLEXIBLE PRINTED WIRING BOARDS

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Performance Guide
Manual for Single- and Double-Sided Flexible Printed Wiring Boards

Developed by the Flexible Circuits Acceptability Subcommittee (D-14) of the Flexible Circuits Committee (D-10) of IPC and the Flexible Printed Circuits Committee of the Japan Printed Circuit Association (JPCA)

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

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Acknowledgment

Any Standard involving a complex technology draws material from a vast number of sources. While the principal members of the Flexible Circuits Acceptability Subcommittee (D-14) of the Flexible Circuits Committee (D-10) and the Flexible Circuits Committee of the Japan Printed Circuit Association (JPCA) 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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1 SCOPE
This standard covers the requirements and considerations for single- and double-sided flexible printed wiring boards (hereinafter called “flexible printed boards” or FPC).

In this document, a FPC means a single- or double-sided FPC, using a film of polyester or polyimide laminated with copper foil(s) on one or both sides (including types with no adhesive layer), and manufactured by the subtractive method (excluding the build-up methods for the manufacturing process).

2 REFERENCED DOCUMENTS
The referenced documents for this standard are as stated in 2.1 through 2.3.

2.1 Japan Printed Circuits Association

- JIS C 5017 (1994) Flexible Printed Wiring Boards - Single-Sided and Double-Sided
- JIS C 5603 (1993) Terms and Definitions for Printed Circuits
- JIS C 6472 (1995) Copper-Clad Laminates for Flexible Printed Wiring Boards (Polyester Film, Polyimide Film)
- JIS C 6512 (1992) Electrolytic Copper Foil for Printed Wiring Boards
- JIS C 6513 (1996) Rolled Copper Foil for Printed Wiring Boards
- JPCA-FC03 (1992) Specification for External Appearance of Flexible Printed Wiring Boards

2.2 International Electrotechnical Commission


2.3 IPC

- IPC-A-600 Acceptability of Printed Boards
- 2.4.13 Solder Float Resistance Flexible Printed Wiring Materials

2.4.13 Solder Float Resistance Flexible Printed Wiring Materials

3 DEFINITION OF TERMS
The definition of terms used in this document is in conformance with JIS C 5603, JIS C 5017, JIS C 5016, and JPCA-FC03.

4 TEST METHODS
The test methods for the properties specified in this document are, in principle, in conformance with JIS C 5016, provided:

1. Test methods requiring complicated referencing procedures are reproduced in this document.
2. Tests on through connection apply to double-sided FPCs only.
3. For stiffeners affixed to FPCs, external appearance is the only requirement specified in this document.

5 PERFORMANCE LEVELS
The FPCs are classified into three standard levels and one special level regarding their performance for each requirement. These are defined as follows:

- Level 1 – FPCs requiring “ordinary” performance levels
- Level 2 – FPCs requiring “high” performance levels
- Level 3 – FPCs requiring “special” performance levels
- Level 4 – FPCs requiring “exceptional” performance levels

These IEC documents are, however, being reviewed for substantial revision at the time of enactment of this document.

Note:

1. JPCA, Kairo Kaikan 2F, 12-2, Nishiogikita 3-Chome, Suginami-Ku, Tokyo, 167, Japan, +81-3-5310-2020, www.jpa.org
2. ANSI, 11 W. 42nd St., New York, NY 10036, 212-642-4980, www.ansi.org