IPC-T-51

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Terms and Definitions for the Design and Manufacture of Printed Electronics

Supersedes IPC-T-50 903A
January 2018

An international standard developed by IPC

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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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Terms and Definitions for the Design and Manufacture of Printed Electronics

Developed by D-64a Printed Electronics Terms and Definitions Task Group

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

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Special Recognition

IPC recognizes the IPC-T-51 A-Team, who went above and beyond over a period of several months to develop the content for this much needed revision.

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Terms and Definitions for the Design and Manufacture of Printed Electronics

1 SCOPE

This standard provides terms and definitions for the design and manufacture of printed electronics.

1.1 Purpose The purpose of this standard is to provide common terminology regarding printed electronics.

The reader is encouraged to also reference IPC-2291, IPC-2292, IPC-4591, IPC-4592, IPC-6901, IPC-6902, IPC-9204 and IPC-9257, which have additional industry-approved terms and definitions.

1.2 3D Printed Electronics Types It is the understanding of the IPC Printed Electronics Committee that electronics manufacturers have several definitions for 3D Printed Electronics. Because these descriptions are the result of years of time and investment by various market segments, the IPC Printed Electronics Committee will not define one term for 3D printed electronics.

To better help industry identify and describe the various processes for producing 3D printed electronics, the IPC Printed Electronics Committee has established three initial types for 3D printed electronics.

Type 1 – Using printed electronics processes on a planar substrate

Type 2 – Using printed electronics processes on a nonplanar substrate

Type 3 – Using printed electronics processes to fully build and functionalize a device in a 3D space

As additional 3D printed electronics types are described by industry, they will be added to the 3D Printed Electronics Types.

2 APPLICABLE DOCUMENTS

2.1 IPC[1]

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

IPC-2291 Design Guideline for Printed Electronics

IPC-2292 Design Standard for Printed Electronics on Flexible Substrates

IPC-4591 Requirements for Printed Electronics Functional Materials

IPC-4592 Requirements for Printed Electronics Functional Dielectric Materials

IPC-6901 Application Categories for Printed Electronics

IPC-6902 Qualification and Performance Specification for Printed Electronics on Flexible Substrates

IPC-9204 Guideline on Flexibility and Stretchability Testing for Printed Electronics

IPC-9257 Requirements for Electrical Testing of Flexible Printed Electronics

1 www.ipc.org