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*The Institute for  
Interconnecting  
and Packaging  
Electronic Circuits*

# IPC-D-351

## Printed Board Drawings in Digital Form

### **IPC-D-351**

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# Printed Board Drawings in Digital Form

## 1.0 SCOPE

The data contained in this specification is intended to supplement ANSI/IPC-D-350, specifically in the area of describing printed wiring board related drawings in digital form. It is intended that the basic record formats described in D-350 also apply to the record format described in this supplement. These formats may be used for transfer of drawings between printed wiring board designers, manufacturers and customers.

The intent of this specification is to convey additional requirements, guidelines and examples necessary to provide the data structures and concepts for drawing description in digital form.

This supplement pertains to four basic types of drawings:

- Printed board schematic diagram (see Figure 1-1)
- Printed board master drawing (see Figure 1-2)
- Printed board assembly drawing (see Figure 1-3)
- Miscellaneous part drawings (see Figure 1-4)

**1.1 Format Compatibility** The concepts detailed in this standard are supplemented by the descriptions defined in other companion IPC standards. It is the intent that the family of IPC-D-35X standards detail the various record formats.

Data redundancy is kept to a minimum by using various standards for appropriate data descriptions dependent upon the use of the data.

The following shows the correlation between the IPC standard and the record formats that are defined in each particular standard.

### IPC-D-35X

*Standards Record Description*

- IPC-D-350** Artwork Records
- IPC-D-350** Board Description Records
- IPC-D-351** Schematic Drawing Records
- IPC-D-351** Master Drawing Records
- IPC-D-351** Assembly Drawing Records
- IPC-D-351** Miscellaneous Part Drawing Records
- IPC-D-352** Electrical Description Records
- IPC-D-352** Bill of Material Records
- IPC-D-353** Testing Format Records
- IPC-D-354** Library Description Records

Users are encouraged to maintain data in a form that is self-sufficient, and is not impacted by changes in supple-

mentary data used in the design process. Thus, library description records may be repeated on archived data. All records shall be in the appropriate format defined in the IPC standard related to the particular record type.

## 2.0 APPLICABLE DOCUMENTS

The following documents, of the issue currently in effect, form a part of this standard to the extent specified herein.

### 2.1 IPC<sup>1</sup>

- IPC-T-50** Terms and Definitions
- IPC-D-300** Printed Board Dimensions and Tolerances
- IPC-D-310** Suggested Guidelines for Artwork Generation and Measurement Techniques for Printed Circuits
- IPC-D-325** Printed Board Documentation
- IPC-D-350** Printed Board Description in Digital Form
- IPC-D-354** Library Format Description for Printed Board Digital Data Bases

### 2.2 American National Standards Institute<sup>2</sup>

- ANSI X3/TR-1-77** American National Dictionary for Information Processing
- ANSI X3.12** Subroutine Record Format Standardization
- ANSI X3.22** Recorded Magnetic Tape for Information Interchange
- ANSI X3.26** Hollerith Punched Card Code
- ANSI X3.39** Recorded Magnetic Tape
- ANSI X3.54** Recorded Magnetic Tape
- ANSI Y14.5** Dimensioning and Tolerancing for Engineering Drawing
- ANSI Y32.1** Logic Diagram Standards
- ANSI Y32.16** Electrical and Electronic Reference Designations
- ANSI Z210.1** Metric Practice Guide (ASTM E380-72)

### 2.3 Department of Defense<sup>3</sup>

- W-T-0051** Tape, Electronic Data Processing, 1971
- DOD-STD-I00** Engineering Drawings

## 3.0 TERMS AND DEFINITIONS

Unless otherwise specified herein, terms and definitions shall be in accordance with IPC-T-50, ANSI X3.12 and the following:

1. Publications are available from the IPC, 2215 Sanders Rd., Northbrook, IL 60076-6135.

2. To obtain documents, write: American National Standards Institute, 1430 Broadway, New York, NY 10018.

3. To obtain documents, write: Naval Publications & Forms Center, 5801 Tabor Road, Philadelphia, PA 19120.