



SLOVENSKI STANDARD
SIST EN 123500:2001
01-marec-2001

Sectional Specification: Flexible printed boards with through connections

Sectional Specification: Flexible printed boards with through connections

Rahmenspezifikation: Flexible Leiterplatten mit Durchverbindungen

Spécification intermédiaire: Cartes imprimées souples avec connexions transversales

Ta slovenski standard je istoveten z: EN 123500:1992

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 123 500

May 1992

UDC:

Descriptors: Quality, electronic components, printed boards

English version

Sectional Specification:
Flexible printed boards with through connections

Spécification Intermédiaire:
Cartes imprimées souples avec
connexions transversales

Rahmenspezifikation:
Flexible Leiterplatten mit
Durchverbindungen

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This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 12 December 1991. The text of this standard consists of the text of CECC 23 500 Issue 1 1985 of the corresponding CECC Specification. CENELEC members are bound to comply with CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the General Secretariat of the CECC or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CECC General Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom. The membership of the CECC is identical, with the exception of the national electrotechnical committees of Greece, Iceland and Luxembourg.

CECC

CENELEC Electronic Components Committee

Comité des Composants Electroniques du CENELEC

CENELEC Komitee für Bauelemente der Elektronik

General Secretariat: Gartenstr. 179, D- 6000 Frankfurt/Main 70

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FOREWORD

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardization (CENELEC) who wish to take part in a harmonized System for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognized Mark, or Certificate, of Conformity. The components produced under the System are thereby accepted by all member countries without further testing.

The specification has been formally approved by the CECC, and has been prepared for those countries taking part in the System who wish to issue national harmonized SECTIONAL SPECIFICATIONS for FLEXIBLE PRINTED BOARDS WITH THROUGH CONNECTIONS. It should be read in conjunction with the current regulations for the CECC System.

At the date of printing of this document the member countries of the CECC are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom, and copies of it can be obtained from the addresses shown on the blue fly sheet.

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PREFACE

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This Sectional Specification was prepared by CECC Working Group 23: Printed Circuits. <https://standards.iteh.ai/catalog/standards/sist/a82acc18-34c4-4a8a-9bd1-8a6a7ac6516/sist-en-123500-2001>

It is based on publications of the International Electrotechnical Commission (IEC).

The text of this specification was circulated to the CECC for voting in the document indicated below and was ratified by the President of the CECC for printing as a CECC Specification.

<u>Document</u>	<u>Date of Voting</u>	<u>Report on the Voting</u>
CECC(Secretariat)1627	March 1985	CECC(Secretariat)1729

SECRETARIAT NOTE:

DUE TO THE URGENT INDUSTRIAL NEED FOR THIS SPECIFICATION, THE PRESIDENT OF THE CECC HAS RULED THAT IT BE PUBLISHED WITHOUT THE FULL EDITORIAL PROCEDURE BEING APPLIED. USERS OF THE SPECIFICATION ARE ASKED TO REPORT TO THE CECC GENERAL SECRETARIAT ANY ERRORS THEY FIND SO THAT AMENDING ACTION CAN BE INITIATED.

The text is published initially in English and German. The French version will follow as soon as it has been prepared.

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1. Introduction

IEC 326-8 is the IEC-Standard for flexible printed boards with through connections. The following document comprises this IEC-Standard and in accordance with the generic specification CECC 23 000 the information additionally necessary for printed boards intended to be handled within the CENELEC system for Electronic Components of Assessed Quality.

1.1 Scope and Object

This document is a Sectional Specification (SS) relating to flexible printed boards with through connections irrespective of their method of manufacture, when they are ready for mounting of the components. It defines the characteristics to be assessed and the test methods to be used for capability approval testing and for quality conformance inspection (lot-by-lot and periodic inspection).

1.2 Related documents

IEC 68	- Basic environmental testing procedures
IEC 194	- Terms and definitions for printed circuits
IEC 249	- Metal-clad base materials for printed circuits
IEC 321	- Guidance for the design and use of components intended for mounting on printed boards.
IEC 326-2	- Printed boards - test methods
IEC 326-3	- Design and use of printed boards
IEC 326-8	- Specification for flexible printed boards with through connections
CECC 00 010	- Printed boards - test methods
CECC 23 000	- Generic Specification Printed boards of assessed quality.

2. General

This Sectional Specification (SS) applies to flexible printed boards with through connections and is intended as a basis for the preparation of

- Capability Detail Specification (Cap DS) applying to specific materials, e.g. according to IEC 249-2, and to be used for capability approval procedures.
It may be necessary to have a Cap DS for each type of material. A Cap DS may be prepared by an international or a national body or by a manufacturer (see also CECC 00 111).
- Customer Detail Specification (CDS) for the custom built printed boards, according to 5 of CECC 23 000. The CDS will normally be written by the customer and allocated a number within his own system.

Further details are also given in CECC 23 000 and in CECC 00 107 Part III.

Table I contains the basic characteristics that will normally be important for flexible printed boards with through connections and makes reference to the appropriate tests to verify these characteristics.

Table II contains the additional characteristics that may be important for certain flexible printed boards with through connections and/or certain applications and makes reference to the appropriate tests to verify these characteristics. Where necessary, the relevant specification may quote characteristics and tests from this Table II.

Where additional details for a test have to be specified in the relevant specification, this is indicated by an asterisk in the relevant column. These details shall then be specified in accordance with CECC 00 010 (IEC 326-2).

Table III contains the capability test programme. A specified composite test pattern (CTP) is used as capability qualifying component.

Table IV contains the information for the quality conformance inspection.

The tables are not intended to prescribe a test sequence, the tests may be carried out in any sequence, unless otherwise specified.

3. Test specimens

3.1 Capability Approval

3.1.1 Basic Capability

The test shall be carried out on the composite test pattern given in 8.

3.1.2 Additional Capability

3.5.3 of CECC 23 000 shall apply. For multiple arrangements see also 8.

3.1.3 Maintenance of Capability Approval

3.8 of CECC 23 000 shall apply.

3.2 Quality conformance inspection

Unless otherwise specified production boards and/or specially designed test patterns may be used for carrying out tests for the lot-by-lot and the periodic inspection.

Where specially designed test patterns shall be used they may be included in the panel. They may be based on the appropriate pattern of the composite test pattern clause 8. Consultation between manufacturer and customer will usually be necessary.

4. Relevant specification

The term "Relevant Specification" means a product specification for an actual printed board, i.e. a CDS as well as a Cap DS applied to a specific material and technique, as applicable.

The relevant specification shall contain all information necessary to define the printed board clearly and completely. The recommendations given in IEC 326-3 shall preferably be followed.

Care should be taken to avoid unnecessary prescriptions. Permissible deviations shall be stated where necessary, nominal values without tolerances or simple maxima or minima shall be given where sufficient. Where tolerances are necessary for certain areas or parts of the printed board only, they shall be applied and restricted to those areas or parts.

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If there are several possibilities of presentation, of tolerance classes etc., the selections given in IEC 326-3 shall preferably be applied.

In case of discrepancy between the CDS and any other pertinent specification (e.g. BS, GS, or SS), the CDS shall prevail.

5. Characteristics of printed boards

Basic characteristics of flexible printed boards with through connections are given in Table I.

Additional characteristics of flexible printed boards with through connections are given in Table II.

TABLE I

Basic characteristics

Characteristics	Test No. IEC Publication 326-2	Additional test details to be specified in the relevant specification	Specimen of composite test pattern	Requirements	Remarks
<i>General examination</i> <i>Visual examination</i>					
Conformity and identification	1	•	Complete composite test pattern	Pattern, marking, identification and material finishes shall comply with the relevant specification. There shall be no apparent defects	
Appearance and workmanship	1a			The boards shall appear to have been processed in a careful and workman-like manner, in accordance with good current practice	
Plated-through holes				Plated-through holes shall be clean and free from inclusions of any sort that could affect component insertion and solderability. There shall be no voids and no apparent defects of the plating as evident by cracks or separation from the walls	
Board edges				The edges of the board and internal cut-outs shall be clean cut without tears or nicks	
Eyelets			A	Eyelets shall be firmly secured. Flanges of eyelets may be soldered to the pattern. There shall be no damage to conductors or substrate around the eyelet	
Bonding conductor to substrate				There shall be no separation of the conductors from the substrate by apparent blisters or wrinkles other than those permitted in the material specification	
Bonding coverlayer to substrate and pattern	1a		Complete composite test pattern	The bonding shall appear to be complete and uniform. Minor delaminations are permitted in the following positions: a) At random locations away from the conductors. Such delaminations shall have an area not exceeding 5 mm ² each, and shall be more than 0.5 mm from the edges b) Along the conductor edges. Such delaminations shall not infringe upon the design spacing between the conductors by more than 20% of the design width by visual estimation	Examples of delaminations are shown in Figure 5,

* See 2.

CECC 23 500 Issue 1