SLOVENSKI STANDARD
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Sectional Specification: Single and double-sided printed boards with plain holes

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Rahmenspezifikation: Leiterplatten mit Leiterbildern auf einer oder auf beiden Seiten ohne metallisierte Löcher

Spécification intermédiaire: Cartes imprimées simples et doubles faces à trous non métallisés

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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 23 100 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.

This 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 SINGLE AND DOUBLE SIDED PRINTED BOARDS WITH PLAIN HOLES. It should be read 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.

PREFACE

This Sectional Specification was prepared by CECC Working Group 23: Printed Circuits.

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 documents indicated below and was ratified by the President of the CECC for printing as a CECC Specification.

Schriftstücke	Date of Voting	Report on the Voting
CECC(Secretariat)1052/1052A	November 1981	CECC(Secretariat)1250
CECC(Secretariat)1547	August 1984	CECC(Secretariat)1621

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.

1. Introduction

IEC 326-4 is the IEC-Standard for single and double sided printed boards with plain holes. 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 single and double sided printed boards with plain holes 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 326-4	- Specification for single and double sided printed boards with plain holes
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 single and double sided printed boards with plain holes 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 single and double sided printed boards with plain holes and makes reference to the appropriate tests to verify these characteristics.

Table II contains the additional characteristics that may be important for certain single and double sided printed boards with plain holes 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.

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 single and double sided printed boards with plain holes are given in Table I.

Additional characteristics of single and double sided printed boards with plain holes are given in Table II.