SLOVENSKI STANDARD
SIST EN 61191-3:2001

01-marec-2001

Printed board assemblies - Part 3: Sectional specification - Requirements for through-hole mount soldered assemblies

Printed board assemblies -- Part 3: Sectional specification - Requirements for through-hole mount soldered assemblies

Elektronikaufbauten auf Leiterplatten -- Teil 3: Rahmenspezifikation - Anforderungen an gelötete Baugruppen in Durchsteckmontage

Ensembles de cartes imprimées -- Partie 3: Spécification intermédiaire - Exigences relatives à l'assemblage par brasage de trous traversants

Ta slovenski standard je istoveten z: **EN 61191-3:1998**

ICS:

31.180	Tiskana vezja (TIV) in tiskane ploġ e	Printed circuits and boards

SIST EN 61191-3:2001 **en**

EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 61191-3

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English version

Printed board assemblies
Part 3: Sectional specification
Requirements for through-hole mount soldered assemblies
(IEC 61191-3:1998)

Ensembles de cartes imprimées
Partie 3: Spécification intermédiaire
Exigences relatives à l'assemblage par brasage de trous traversants
(CEI 61191-3:1998)

Elektronikaufbauten auf Leiterplatten
Teil 3: Rahmenspezifikation
Anforderungen an gelötete Baugruppen in Durchsteckmontage
(IEC 61191-3:1998)

This European Standard was approved by CENELEC on 1998-10-01. CENELEC members are bound to comply with the 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 91/133/FDIS, future edition 1 of IEC 61191-3, prepared by IEC TC 91, Surface mounting technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61191-3 on 1998-10-01.

This EN 61191-3 is to be used in conjunction with EN 61191-1:1998.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1999-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2001-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61191-3:1998 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 61191-1	1998	Printed board assemblies Part 1: Generic specification - Requirements for soldered electrical and electronic assemblies using surface mount and related assembly technologies	EN 61191-1	1998

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INTERNATIONAL STANDARD

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Ensembles de cartes imprimées –

Partie 3:
Spécification intermédiaire –
Exigences relatives à l'assemblage par brasage de trous traversants

Printed board assemblies –

Part 3:
Sectional specification –
Requirements for through-hole mount soldered assemblies

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61191-3 has been prepared by IEC technical committee 91: Surface mounting technology.

The text of this standard is based on the following documents:

FDIS	Report on Voting
91/133/FDIS	91/144/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

IEC 61191 consists of the following parts, under the general title: *Printed board assemblies:*

Part 1: Generic specification – Requirements for soldered electrical and electronic assemblies using surface mount and related assembly technologies

Part 2: Sectional specification – Requirements for surface mount soldered assemblies

Part 3: Sectional specification – Requirements for through-hole mount soldered assemblies

Part 4: Sectional specification – Requirements for terminal soldered assemblies

Annex A forms an integral part of this standard.

This standard is to be read in conjunction with IEC 61191-1.

PRINTED BOARD ASSEMBLIES –

Part 3: Sectional specification – Requirements for through-hole mount soldered assemblies

1 General

1.1 Scope

This standard prescribes requirements for lead and hole solder assembly. The requirements pertain to those assemblies that are totally lead and hole, through-hole mounting technology (THT), or the THT portions of those assemblies that include other related technologies (i.e. surface mount, chip mounting, terminal mounting).

1.2 Classification

This specification recognizes that electrical and electronic assemblies are subject to classifications by intended end-item use. Three general end-product classes have been established to reflect differences in producibility, complexity, functional performance requirements, and verification (inspection/test) frequency. These are the following:

Level A: General electronic products

Level B: Dedicated service electronic products

Level C: High performance electronic products

The user of the assemblies is responsible for determining the level to which his product belongs. It should be recognized that there may be overlaps of equipment between levels. The contract must specify the level required and indicate any exceptions or additional requirements to the parameters, where appropriate.

2 Normative references

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of IEC 61191. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 61191 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 61191-1:1998, *Printed board assemblies – Part 1: Generic specification – Requirements for soldered electrical and electronic assemblies using surface mount and related assembly technologies*

3 Through-hole technology (THT)

Technology that permits electrical connection of components to a conductive pattern by the use of component holes.

4 Through-hole mounting of components

This clause covers the assembly of components with leads inserted into through-holes and soldered by machine and/or manual processes.

4.1 Placement accuracy

Placement accuracy for components inserted either manually or by machine methods shall be sufficient to insure that the component is properly positioned after soldering. If suitable process controls are not in place to ensure compliance with this requirement and the intent of annex A, the detailed requirements of annex A shall be applicable.

4.2 Through-hole component requirements

4.2.1 Lead preforming

Part and component leads shall be preformed to the final configuration, excluding the final clinch or retention bend, before assembly or installation.

4.2.2 Tempered leads

When it is necessary to cut tempered leads, the governing work instructions must specify cutting tools which do not impart detrimental shock to connections internal to the component.

4.2.3 Lead forming requirements

Leads shall be formed in such a manner that the lead-to-body seal is not damaged or degraded. Leads shall extend at least one lead diameter or thickness but not less than 0,8 mm from the body or weld before the start of the bend radius (see figure 1).

Exposed core metal is acceptable if reduction in the cross-sectional area does not exceed 5 % of the diameter of the lead. Occurrence of exposed core metal in the formed area of the lead shall be treated as a process indicator.