SLOVENSKI STANDARD
SIST EN IEC 61188-6-4:2019

01-november-2019

Plošče tiskanih vezij in sestavi plošč tiskanih vezij - Zasnova in uporaba - 6-4. del: Razmestitev priključkov - Splošne zahteve za merske risbe elementov za površinsko montažo (SMD) glede na razmestitev njihovih priključkov

Printed boards and printed board assemblies - Design and use - Part 6-4: Land pattern design - Generic requirements for dimensional drawings of surface mounted components (SMD) from the viewpoint of land pattern design

Ta slovenski standard je istoveten z: **EN IEC 61188-6-4:2019**

ICS:

01.100.25	Risbe s področja elektrotehnike in elektronike	Electrical and electronics engineering drawings
31.180	Tiskana vezja (TIV) in tiskane plošče	Printed circuits and boards

SIST EN IEC 61188-6-4:2019 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61188-6-4

July 2019

ICS 31.180

English Version

Printed boards and printed board assemblies - Design and use - Part 6-4: Land pattern design - Generic requirements for dimensional drawings of surface mounted components (SMD) from the viewpoint of land pattern design (IEC 61188-6-4:2019)

Cartes imprimées et cartes imprimées équipées - Conception et utilisation - Partie 6-4: Conception de la zone de report - Exigences génériques pour les dessins dimensionnels de composants montés en surface (CMS) du point de vue de la conception de la zone de report (IEC 61188-6-4:2019)

Leiterplatten und Flachbaugruppen - Konstruktion und Anwendung - Teil 6-4: Allgemeine Anforderungen an SMD-Maßzeichnungen hinsichtlich der Konstruktion des Anschlussflächenbilds (IEC 61188-6-4:2019)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 91/1561/FDIS, future edition 1 of IEC 61188-6-4, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61188-6-4:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-03-06
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-06-06

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The text of the International Standard IEC 61188-6-4:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60191-1	NOTE	Harmonized as EN IEC 60191-1
IEC 60191-6	NOTE	Harmonized as EN 60191-6
IEC 60191-6-1	NOTE	Harmonized as EN 60191-6-1
IEC 61188-5-1	NOTE	Harmonized as EN 61188-5-1
IEC 61188-5-2	NOTE	Harmonized as EN 61188-5-2
IEC 61188-5-3	NOTE	Harmonized as EN 61188-5-3
IEC 61188-5-4	NOTE	Harmonized as EN 61188-5-4
IEC 61188-5-5	NOTE	Harmonized as EN 61188-5-5
IEC 61188-5-6	NOTE	Harmonized as EN 61188-5-6
IEC 61188-5-8	NOTE	Harmonized as EN 61188-5-8
IEC 61191-1	NOTE	Harmonized as EN IEC 61191-1
IEC 61191-2	NOTE	Harmonized as EN 61191-2

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.
NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.
NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60194	-	Terms and definitions for printed circuits	-	-
IEC 60194-2	-	Printed boards design, manufacture and assembly - Vocabulary - Part 2: Common usage in electronic technologies as well as printed board and electronic assembly technologies	-	-

IEC 61188-6-4

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NORME INTERNATIONALE

colour inside

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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International Standard IEC 61188-6-4 has been prepared by IEC technical committee 91: Electronics assembly technology.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
91/1561/FDIS	91/1572/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61188 series, published under the general title *Printed boards and printed board assemblies – Design and use*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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PRINTED BOARDS AND PRINTED BOARD ASSEMBLIES – DESIGN AND USE –

Part 6-4: Land pattern design – Generic requirements for dimensional drawings of surface mounted components (SMD) from the viewpoint of land pattern design

1 Scope

This part of IEC 61188 specifies generic requirements for dimensional drawings of SMD from the viewpoint of land pattern design.

The purpose of this document is to prevent land pattern design issues caused by lack of information and/or misuse of the information from SMD outline drawing as well as to improve the utilization of IEC 61188 series.

This document is applicable to the SMD of semiconductor devices and electrical components.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60194, *Printed board design, manufacture and assembly – Terms and definitions*

IEC 60194-2, *Printed board design, manufacture and assembly – Vocabulary – Part 2: Common usage in electronic technologies as well as printed board and electronic assembly technologies*

3 Terms, definitions and symbols

For the purposes of this document, the terms and definitions given in IEC 60194 and IEC 60194-2 apply, and the reference symbols are shown in Table 1.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

Table 1 – Reference symbols used in this document

Reference symbol	Definition
A	SMD height (from the mounting surface to the package upper surface)
A_1	Stand-off height (distance from the mounting surface to the package bottom)
A_2	Package height
A_3	Standard heel height for terminal
A_4	Terminal height
A_5	Terminal height (thickness)
A_6	SMD height (from the mounting surface to the package upper surface, maximum)
A_7	SMD height from the mounting surface to the package top (excluding moving part)
A_8	SMD height from the mounting surface to the package top (at the lock lever open state)
A_9	SMD height from the mounting surface to the upper surface of cap
$Øb_1$	Terminal diameter for ball
$Øb_2$	Ball diameter
C, C_1, C_2	Row spacing. Distance between land centers
CY_1	Courtyard width
CY_2	Courtyard length
D	Package width
D'	Solder balls area width (distance between the centres of the ball of both ends)
E	Package length
E'	Solder balls area length (distance between the centres of the ball of both ends)
E_2	Position of auxiliary terminals
E_3	Upper surface cap width
F_1, F_2	Clearance between signal and center (GND) terminal
F_3	Distance from package-end to terminal-end of signal terminal
F_4	Distance between signal terminals at the package corners
G, G_1, G_2	Distance between lands. Measured from inside edges
H_D	SMD total width
H_E	SMD total length
H_T	Height from the tray stage to the package top
i	Terminal inflection point
J_b	Protrusion length of land over the component terminal
J_H	Heel protrusion length
J_S	Side protrusion length
J_T	Toe protrusion length
k_1, k_2, k_4	Land pattern length
k_3	Distance between land patterns
K_5, K_6	Terminal notch length (toe)
K_7, K_8	Terminal notch height (heel)
L	Terminal flat part length (mounting surface side)
L_0, L_1	Length from the package end to a terminal tip
L_3	Position of auxiliary terminals
L_4	Auxiliary terminal pitch
L_5	Package length at the lock lever open state