SLOVENSKI STANDARD
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Mechanical standardization of semiconductor devices - Part 4: Coding system and classification into forms of package outlines for semiconductor device packages

Mechanische Normung von Halbleiterbauelementen - Teil 4: Codierungssystem für Gehäuse und Eingruppierung der Gehäuse nach der Gehäuseform für Halbleiterbauelemente

Normalisation mécanique des dispositifs à semiconducteurs - Partie 4: Système de codification et classification en formes des boîtiers pour dispositifs à semiconducteurs

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31.240	Mehanske konstrukcije za elektronsko opremo	Mechanical structures for electronic equipment

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EUROPÄISCHE NORM

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English version

Mechanical standardization of semiconductor devices - Part 4: Coding system and classification into forms of package outlines for semiconductor device packages

(IEC 60191-4:2013)

Normalisation mécanique des dispositifs à semiconducteurs -
Partie 4: Système de codification et classification en formes des boîtiers pour dispositifs à semiconducteurs
(CEI 60191-4:2013)

Mechanische Normung von Halbleiterbauelementen -
Teil 4: Codierungssystem für Gehäuse und Eingruppierung der Gehäuse nach der Gehäuseform für Halbleiterbauelemente
(IEC 60191-4:2013)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 47D/837/FDIS, future edition 3 of IEC 60191-4, prepared by SC 47D, Semiconductor devices packaging, of IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60191-4:2014.

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)	2014-09-21
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2016-11-14

This European Standard supersedes EN 60191-4:1999 and its Amendments A1:2002 and A2:2002.

EN 60191-4:2014 includes the following significant changes with respect to EN 60191-4:1999:

a) Material code "S" is added to indicate a silicon based package.

b) Description of "WL" is added to be used for general use.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60191-4:2013 was approved by CENELEC as a European Standard without any modification.

IEC 60191-4

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Mechanical standardization of semiconductor devices – Part 4: Coding system and classification into forms of package outlines for semiconductor device packages

Normalisation mécanique des dispositifs à semiconducteurs – Partie 4: Système de codification et classification en formes des structures des boîtiers pour dispositifs à semiconducteurs

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MECHANICAL STANDARDIZATION OF SEMICONDUCTOR DEVICES –

Part 4: Coding system and classification into forms of package outlines for semiconductor device packages

FOREWORD

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International Standard IEC 60191-4 has been prepared by subcommittee 47D: Semiconductor devices packaging, of IEC technical committee 47: Semiconductor devices.

This third edition cancels and replaces the second edition published in 1999, Amendment 1:2001 and Amendment 2:2002.This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Material code "S" is added to indicate a silicon based package.
b) Description of "WL" is added to be used for general use.

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

FDIS	Report on voting
47D/837/FDIS	47D/848/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.

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

A list of all the parts in the IEC 60191 series, published under the general title *Mechanical standardization of semiconductor devices*, can be found on the IEC website.

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

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

MECHANICAL STANDARDIZATION OF SEMICONDUCTOR DEVICES –

Part 4: Coding system and classification into forms of package outlines for semiconductor device packages

1 Scope

This part of IEC 60191 specifies a method for the designation of package outlines and for the classification of forms of package outlines for semiconductor devices and a systematic method for generating universal descriptive designators for semiconductor device packages.

The descriptive designator provides a useful communication tool but has no implied control for assuring package interchangeability.

2 Coding system of package outlines for semiconductor devices

The following coding system will be used in the publications concerning mechanical standardization:

– first: a three-digit serial number (000 to 999);
– second: a single reference letter indicating the form as shown in Table 1;
– third: a two-digit serial number (00 to 99) to indicate a variant of an outline drawing. The use of prefix P to indicate a provisional drawing remains unchanged.

Examples

– 101A00
– 050G13
– P 101F01

3 Classification into forms of package outlines for semiconductor devices

The package outline drawings for semiconductor devices are classified into forms according to the following scheme:

– form A: single-ended
– form B: heat-sink-mounted
– form C: stud-mounted
– form D: axial-leaded
– form E: surface-mounted
– form F: single-ended, heat-sink-mounted
– form G: dual and quad in-line
– form H: axial lead-less.

4 Coding system for semiconductor-device packages

4.1 General

The standard coding system is a method for identifying the physical features of an electronic device package family. The system is predicated upon a minimum two-character designator, which indicates the package outline style. This designator can be extended, through the use of optional, user-selected fields, to provide additional package information such as terminal position and count, terminal form, package shape, and predominant body material.

4.2 New descriptive codes

If a new package that does not conform to one of the designated field character codes is being proposed, a new code may be recommended for standardization.

4.3 Descriptive designators

4.3.1 General remarks

The package outline style code is the only compulsory field within this descriptive designation system. Additional information may be provided using optional prefixes and suffixes described by the system. In general, these fields are independent of one another. Unless otherwise indicated herein, the users of this system may pick and choose which of these fields they wish to implement for their specific application (see Figure 1). The descriptive designator may be extended with additional information, provided this information is separated from the descriptive designator by a slash (/) (see 4.3.7).

NOTE Basic package codes and names are presented in Table B.1.

4.3.2 Minimum descriptive designator

The minimum descriptive designator is a two-letter code that classifies device packages into standard package outline styles. These styles identify general external physical features. Common two-letter descriptive codes or abbreviations are included, such as CC, FP, SO, GA.

Figure A.1 shows two-letter codes for various device package outline styles and depicts examples of each. Table 1 lists the two-letter package-outline-style codes described in Clause 5.

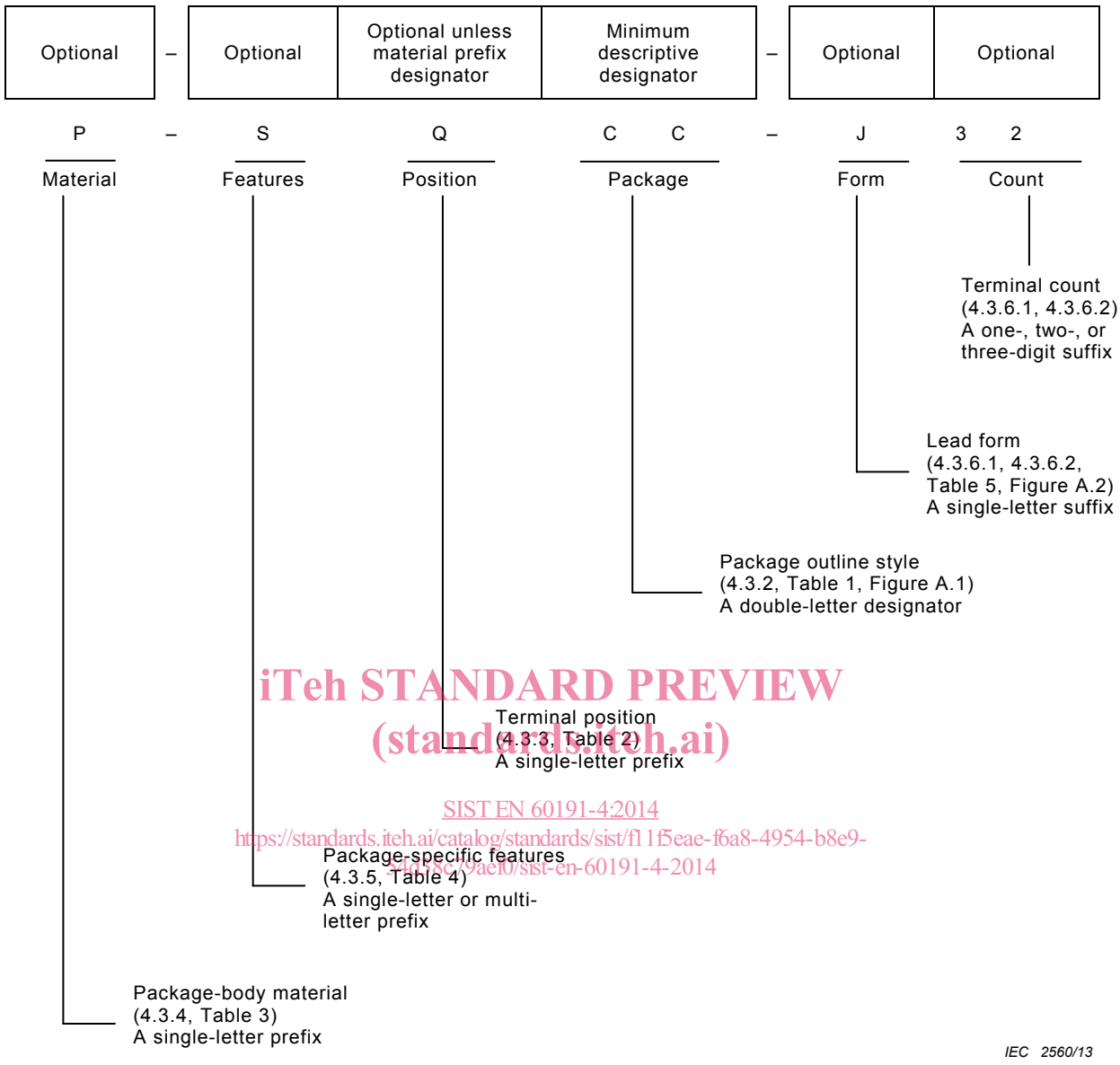

Figure 1 – Descriptive coding for semiconductor device packages