



NSAI
Standards

Irish Standard
I.S. EN 60191-6:2009

Mechanical standardization of
semiconductor devices -- Part 6:
General rules for the preparation of
outline drawings of surface mounted
semiconductor device packages (IEC
60191-6:2009 (EQV))

I.S. EN 60191-6:2009

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60191-6

December 2009

ICS 31.080.01

Supersedes EN 60191-6:2004

English version

**Mechanical standardization of semiconductor devices -
Part 6: General rules for the preparation of outline drawings of surface
mounted semiconductor device packages
(IEC 60191-6:2009)**

Normalisation mécanique des dispositifs
à semi-conducteurs -
Partie 6: Règles générales
pour la préparation des dessins
d'encombrement des boîtiers
pour dispositifs à semi-conducteurs
pour montage en surface
(CEI 60191-6:2009)

Mechanische Normung
von Halbleiterbauelementen -
Teil 6: Allgemeine Regeln
für die Erstellung
von Gehäusezeichnungen
von SMD-Halbleitergehäusen
(IEC 60191-6:2009)

This European Standard was approved by CENELEC on 2009-12-01. 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 47D/736/CDV, future edition 3 of IEC 60191-6, prepared by SC 47D, Mechanical standardization for semiconductor devices, of IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60191-6 on 2009-12-01.

This European Standard supersedes EN 60191-6:2004.

EN 60191-6:2009 includes the following significant changes with respect to EN 60191-6:2004:

- scope is modified to cover all surface-mounted devices discrete semiconductors with lead count of greater or equal to 8;
- editorial modifications on several pages; and
- technical revision to ball grid array package (BGA) especially its geometrical drawing format. (two types of BGA would unify as one type as a result of revising drawing format.)

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) 2010-09-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2012-12-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60191-6:2009 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 60191-3	NOTE Harmonized as EN 60191-3:1999 (not modified).
ISO 2692	NOTE Harmonized as EN ISO 2692:2006 (not modified).

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60191-1	2007	Mechanical standardization of semiconductor devices - Part 1: General rules for the preparation of outline drawings of discrete devices	EN 60191-1	2007
IEC 60191-4	1999	Mechanical standardization of semiconductor devices -	EN 60191-4	1999
A1	2001		A1	2002
A2	2002	Part 4: Coding system and classification into forms of package outlines for semiconductor device packages	A2	2002
ISO 1101	2004	Geometrical Product Specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out	EN ISO 1101	2005

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MECHANICAL STANDARDIZATION OF SEMICONDUCTOR DEVICES –

Part 6: General rules for the preparation of outline drawings of surface mounted semiconductor device packages

FOREWORD

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International Standard IEC 60191-6 has been prepared by subcommittee 47D: Mechanical standardization of semiconductor devices, of IEC technical committee 47: Semiconductor devices.

This third edition of IEC 60191-6 cancels and replaces the second edition, published in 2004 and constitutes a technical revision. This edition includes the following significant changes with respect to the previous edition:

- a) scope is modified to cover all surface-mounted devices discrete semiconductors with lead count of greater or equal to 8;
- b) editorial modifications on several pages; and
- c) technical revision to ball grid array package (BGA) especially its geometrical drawing format. (two types of BGA would unify as one type as a result of revising drawing format.)

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

CDV	Report on voting
47D/736/CDV	47D/749/RVC

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 parts of IEC 60191 series 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 amendment and the base publication will remain unchanged until the maintenance result 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.

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