

Mechanical standardization of semiconductor devices —

**Part 6-12: General rules for the
preparation of outline drawings of
surface mounted semiconductor device
packages — Design guide for fine-pitch
land grid array (FLGA) — Rectangular
type**

The European Standard EN 60191-6-12:2002 has the status of a
British Standard

ICS 31.080.01

National foreword

This British Standard is the official English language version of EN 60191-6-12:2002. It is identical with IEC 60191-6-12:2002.

The UK participation in its preparation was entrusted to Technical Committee EPL/47, Semiconductors, which has the responsibility to:

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 24 September 2002

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 21 and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

© BSI 24 September 2002

ISBN 0 580 40409 9

Mechanical standardization of semiconductor devices
Part 6-12: General rules for the preparation of outline drawings
of surface mounted semiconductor device packages -
Design guide for fine-pitch land grid array (FLGA) -
Rectangular type
(IEC 60191-6-12:2002)

Normalisation mécanique
des dispositifs à semiconducteurs
Partie 6-12: Règles générales pour la
préparation des dessins d'encombrement
des dispositifs à semiconducteurs
pour montage en surface -
Guide de conception pour les boîtiers
FLGA de type rectangulaire
(CEI 60191-6-12:2002)

Mechanische Normung
von Halbleiterbauelementen
Teil 6-12: Allgemeine Regeln für die
Erstellung von Gehäusezeichnungen
von SMD-Halbleitergehäusen -
Konstruktionsleitfaden für Feinraster-
Land-Grid-Array (FLGA) -
Rechteckige Ausführung
(IEC 60191-6-12:2002)

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 47D/493/FDIS, future edition 1 of IEC 60191-6-12, prepared by SC 47D, Mechanical standardization of semiconductor devices, of IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60191-6-12 on 2002-07-01.

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) 2003-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-07-01

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

Endorsement notice

The text of the International Standard IEC 60191-6-12:2002 was approved by CENELEC as a European Standard without any modification.

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INTRODUCTION

The demand for area array style packages exists because of the multi-functions and high performance of electrical equipment. The objective of this design guide is to standardize outlines and to get interchangeability of FLGA rectangular type packages. The terminal pitch and package outlines of these fine-pitch array packages are smaller than those of LGA packages.

MECHANICAL STANDARDIZATION OF SEMICONDUCTOR DEVICES –

Part 6-12: General rules for the preparation of outline drawings of surface mounted semiconductor device packages – Design guide for fine-pitch land grid array (FLGA) – Rectangular type

1 Scope

This part of IEC 60191 provides common outline drawings and dimensions for all types of structures and composed materials of fine-pitch land grid array (hereinafter called FLGA) whose terminal pitch is less than, or equal to, 0,80 mm and whose package body outline is rectangular.

2 Normative references

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.

IEC 60191 (all parts), *Mechanical standardization of semiconductor devices*

3 Definitions

For the purposes of this part of IEC 60191, the following definitions, as well as those given in the other parts of this series, apply.

3.1

flanged type

type whose package body size (body length and width) consists of its own flange composed around the encapsulation or lid

3.2

type of real chip size

type whose package body size (body length and width) consists of an encapsulation around the real chip only

3.3

FLGA

packages with metal lands or metal bumps of which the terminal height is less than, or equal to, 100 μm , and whose terminal pitch is less than, or equal to, 0,80 mm, positioned in an array on the base plane of the package as external terminals

This package structure makes it possible to surface-mount the packages to the printed circuit board.

3.4

material designation

FLGA packages are classified according to the following two material designations:

3.4.1

plastic type (P-FLGA)

plastic-type classification is assigned to packages which consist of resin substrate as interposer material (for example, glass-epoxy, poly-imid)

3.4.2

ceramic type (C-FLGA)

ceramic-type classification is assigned to packages which consist of ceramic substrate as interposer material



Figure 1 – Rectangular FLGA packages