

Semiconductor die products - Part 1: Procurement and use

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 62258-1:2010 sisaldab Euroopa standardi EN 62258-1:2010 ingliskeelset teksti.

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English version

**Semiconductor die products -
Part 1: Procurement and use
(IEC 62258-1:2009)**

Produits de puces de semiconducteurs -
Partie 1: Approvisionnement et utilisation
(CEI 62258-1:2009)

Halbleiter-Chip-Erzeugnisse -
Teil 1: Beschaffung und Anwendung
(IEC 62258-1:2009)

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

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Foreword

The text of document 47/1974/CDV, future edition 2 of IEC 62258-1, prepared by IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62258-1 on 2010-10-01.

This European Standard supersedes EN 62258-1:2005.

The main changes that have been introduced in this issue have been to ensure consistency across all parts of the standard. The ordering of the subclauses, particularly in Clause 6, has been changed to be more logical and the text of some of the requirements has been amended to add requirements on further information as covered by CLC/TR 62258-4, CLC/TR 62258-7 and CLC/TR 62258-8. New requirements include information on permutability of terminals and functional elements (6.6.4) and moisture sensitivity for partially encapsulated devices (8.8).

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.

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) | 2011-07-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-10-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62258-1:2009 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 60068 series	NOTE	Harmonized in EN 60068 series (not modified).
IEC 60749-26	NOTE	Harmonized as EN 60749-26.
IEC 60749-27	NOTE	Harmonized as EN 60749-27.
IEC 61340-5-1	NOTE	Harmonized as EN 61340-5-1.
IEC 61340-5-2	NOTE	Harmonized as EN 61340-5-2.
IEC 61340-5-2	NOTE	Harmonized as EN 61340-5-2.
ISO 9000	NOTE	Harmonized as EN ISO 9000.

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 60050	Series	International Electrotechnical Vocabulary (IEV)	-	-
IEC 60191	Series	Mechanical standardization of semiconductor devices	EN 60191	Series
IEC 60191-4 + A1 + A2	1999 2001 2002	Mechanical standardization of semiconductor devices - Part 4: Coding system and classification into forms of package outlines for semiconductor device packages	EN 60191-4 + A1 + A2	1999 2002 2002
IEC 61360-1	-	Standard data elements types with associated classification scheme for electric items - Part 1: Definitions - Principles and methods	EN 61360-1	-
IEC 62258-2	-	Semiconductor die products - Part 2: Exchange data formats	EN 62258-2	-
IEC/TR 62258-3	-	Semiconductor die products - Part 3: Recommendations for good practice in handling, packing and storage	CLC/TR 62258-3	-
IEC/TR 62258-4	-	Semiconductor die products - Part 4: Questionnaire for die users and suppliers	CLC/TR 62258-4	-
IEC 62258-5	-	Semiconductor die products - Part 5: Requirements for information concerning electrical simulation	EN 62258-5	-
IEC 62258-6	-	Semiconductor die products - Part 6: Requirements for information concerning thermal simulation	EN 62258-6	-
IEC/TR 62258-7	-	Semiconductor die products - Part 7: XML schema for data exchange	CLC/TR 62258-7	-
IEC/TR 62258-8	-	Semiconductor die products - Part 8: EXPRESS model schema for data exchange	CLC/TR 62258-8	-
ISO 14644-1	1999	Cleanrooms and associated controlled environments - Part 1: Classification of air cleanliness	EN ISO 14644-1	1999

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INTRODUCTION

This standard is based on the work carried out in the ESPRIT 4th Framework project GOOD-DIE which resulted in the publication of the ES59008 series of European specifications. Organisations that helped prepare this document included the European IST ENCASIT project, JEITA, JEDEC and ZVEI.

The structure of this International Standard as currently conceived is as follows:

- Part 1: Procurement and use
- Part 2: Exchange data formats
- Part 3: Recommendations for good practice in handling, packing and storage (technical report)
- Part 4: Questionnaire for die users and suppliers (technical report)
- Part 5: Requirements for information concerning electrical simulation
- Part 6: Requirements for information concerning thermal simulation
- Part 7: XML schema for data exchange (technical report)
- Part 8: EXPRESS model schema for data exchange (technical report)

Further parts may be added as required.

SEMICONDUCTOR DIE PRODUCTS –

Part 1: Procurement and use

1 Scope

This part of IEC 62258 has been developed to facilitate the production, supply and use of semiconductor die products, including

- wafers,
- singulated bare die,
- die and wafers with attached connection structures,
- minimally or partially encapsulated die and wafers.

The standard defines the minimum requirements for the data that are needed to describe such die products and is intended as an aid to the design of and procurement for assemblies incorporating die products. It covers the requirements for data, including

- product identity
- product data
- die mechanical information
- test, quality, assembly and reliability information
- handling, shipping and storage information

It covers the specific requirements for the data that are needed to describe the geometrical properties of die, their physical properties and the means of connection necessary for their use in the development and manufacture of products. It also contains, in the annexes, a vocabulary and list of common acronyms.

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 60050 (all parts), *International Electrotechnical Vocabulary*

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

IEC 60191-4:1999, *Mechanical standardization of semiconductor devices – Part 4: Coding system and classification into forms of package outlines for semiconductor device packages*
Amendment 1 (2001)
Amendment 2 (2002)

IEC 61360-1, *Standard data element types with associated classification scheme for electric components – Part 1: Definitions – Principles and methods*

IEC 62258-2, *Semiconductor die products – Part 2: Exchange data formats*

IEC/TR 62258-3, *Semiconductor die products – Part 3: Recommendations for good practice in handling, packing and storage*

IEC/TR 62258-4, *Semiconductor die products – Part 4: Questionnaire for die users and suppliers*

IEC 62258-5, *Semiconductor die products – Part 5: Requirements for information concerning electrical simulation*

IEC 62258-6, *Semiconductor die products – Part 6: Requirements for information concerning thermal simulation*

IEC/TR 62258-7, *Semiconductor die products – Part 7: XML schema for data exchange*

IEC/TR 62258-8, *Semiconductor die products – Part 8: EXPRESS model schema for data exchange*

ISO 14644-1:1999, *Cleanrooms and associated controlled environments – Part 1: Classification of air cleanliness*

3 Terms and definitions

For the purpose of this document, the following terms and definitions are applicable. All the terms and definitions defined here are in addition to the relevant terms and definitions that are defined in IEC 60050 series¹. Additional terms and acronyms are given for information in Annexes A and B.

3.1 Basic definitions

3.1.1

die (singular or plural)

separated piece(s) of semiconductor wafer that constitute a discrete semiconductor or whole integrated circuit

3.1.2

wafer

slice or flat disc, either of semiconductor material or of such a material deposited on a substrate, in which devices or circuits are simultaneously processed and which may be subsequently separated into die

3.1.3

singulated die

individual and distinct die which have been separated from the wafer

3.1.4

singulation

die separation

separation of wafers into individual die devices, including sawing, scribing and dicing

3.1.5

bare die

unpackaged discrete semiconductor or integrated circuit with pads on the upper surface suitable for interconnection to the substrate or package

¹ The terms in this series are available at www.Electropedia.org, also known as the "IEV On line".