

Data requirements for semiconductor die —

Part 6-2: Data dictionary

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National foreword

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This document comprises a front cover, an inside front cover, the ES title page, pages 2 to 22, an inside back cover and a back cover.

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EUROPEAN SPECIFICATION

ES 59008-6-2

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English version

**Data requirements for semiconductor die
Part 6-2: Data dictionary**

This European Specification was approved by CENELEC on 2000-11-06.

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CENELEC

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

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Foreword

This European Specification has been prepared by the CENELEC BTTF 97-1, Known Good Die.

It was submitted to the vote during the meeting of BTTF 97-1 and approved by CENELEC as ES 59008-6-2 on 2000-11-06.

The following date was fixed:

- latest date by which the existence of the ES
has to be announced at national level (doa) 2001-05-01

The structure of this European Specification is as follows:

ES 59008 Data requirements for semiconductor die

- Part 1 General requirements
- Part 2 Vocabulary
- Part 3 Mechanical, material and connectivity requirements
- Part 4 Specific requirements and recommendations
 - Part 4-1 Test and quality
 - Part 4-2 Handling and storage
 - Part 4-3 Thermal
 - Part 4-4 Electrical simulation
- Part 5 Particular requirements and recommendations for die types
 - Part 5-1 Bare die
 - Part 5-2 Bare die with added connection structures
 - Part 5-3 Minimally packaged die
- Part 6 Exchange data formats and data dictionary
 - Part 6-1 Data exchange - DDX
 - Part 6-2 Data dictionary

Introduction

This European Specification has been developed so that the selection of unpackaged and minimally packaged semiconductor die, with or without connection structures, can be carried out in a constructive way so that the designer and procurer of the components can save both design and procurement time.

It is a data specification which defines the requirements for:

- product identity;
- product data;
- die mechanical information;
- test, quality and reliability information;
- handling, storage and mounting information;
- thermal data and electrical simulation data.

This document was prepared by CENELEC Task Force CLC/BTTF 97-1 Known Good Die. Other organisations that helped prepare it were: the ESPRIT GOOD-DIE project, EECA, Sematech; DPC and EIAJ.

The specification was derived from the work carried out in the ESPRIT 4th Framework project GOOD-DIE. This project was set up to develop a database for the selection of unpackaged and minimally packaged semiconductor die, with or without connection structures, and for the downloading of information to CAD design stations to facilitate the layout and simulation of MCMs and hybrid circuits. During the early part of this project the need became apparent for standard ways of presenting information for the selection and procurement of these components.

1 Scope

This series of European Specifications specifies requirements for the exchange of data pertaining to bare semiconductor die, with or without connection structures, and minimally packaged semiconductor die.

This Specification also gives recommendations for general industry good practice in the use of bare die, with or without connection structures, and minimally packaged die.

Part 6-2 of ES 59008 specifies the dictionary for die data including definitions of all necessary die properties according to the requirements of IEC 61360.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this European Specification. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this European Specification are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below.

ES 59008-1		<i>Data requirements for semiconductor die -- Part 1: General requirements</i>
ES 59008-2		<i>Part 2: Vocabulary</i>
ES 59008-3		<i>Part 3: Mechanical, material and connectivity requirements</i>
ES 59008-4-X		<i>Part 4-X: Specific requirements and recommendations</i>
ES 59008-5-X		<i>Part 5-X: Particular requirements and recommendations for die types</i>
ES 59008-6-1		<i>Part 6-1: Exchange data format and data dictionary - Data exchange - DDX file format</i>
EN 60191-4	1999	<i>Mechanical standardization of semiconductor devices - Part 4: Coding system and classification into forms of package outlines for semiconductor devices (IEC 60191-4:1999)</i>
EN 61360-1	1995	<i>Standard data element types with associated classification scheme for electric components -- Part 1: Definitions - Principles and methods (IEC 61360-1:1995)</i>
EN 61360-4	1995	<i>Part 4: IEC reference collection of standard data element types, component classes and terms (IEC 61360-4:1994)</i>
ISO 13584-24 (DIS)		<i>Industrial automation systems and integration - Parts library - Part 24: Logical resource: Logical model of supplier library</i>

3 Definitions

For the purposes of this European Specification, the definitions as given in ES 59008-2: Vocabulary shall apply.

4 Requirements

This Part of the specification should be read in conjunction with ES 59008-1: General Requirements, ES 59008-3: Mechanical, material and connectivity requirements, ES 59008-4: Specific requirements and recommendations, ES 59008-5: Particular requirements and recommendations for die types and ES 59008-6-1: Data exchange - DDX.

4.1 Formats for data element type definitions

This document presents definitions for properties of die as described in other parts of this standard in a computer-sensible form in accordance with the requirements of EN 61360-1. The definitions given in clause 5 are presented in a format which is consistent with the format of the dictionary in annex A of EN 61360-4.

To assist in the understanding of the die property definitions given in clause 5, the Figures 1, 2 and 3 below indicate the various attributes that appear there whilst Table 1 that follows acts as a key to the figures. For a detailed description of the various attributes of the data element type definitions, see EN 61360-1.

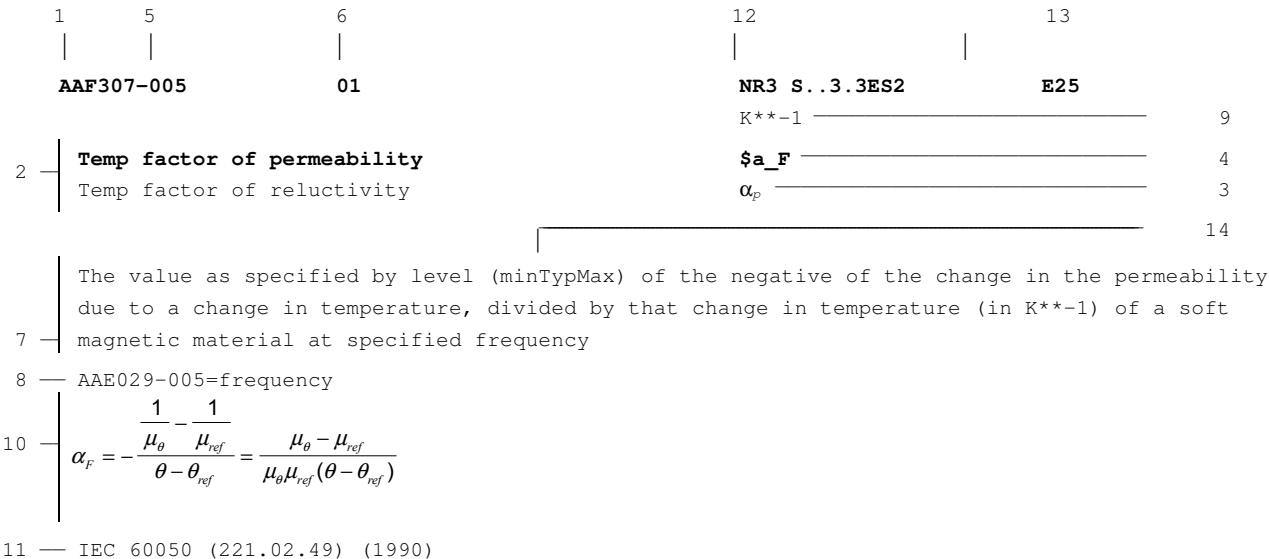


Figure 1 - Quantitative data element type specification attributes

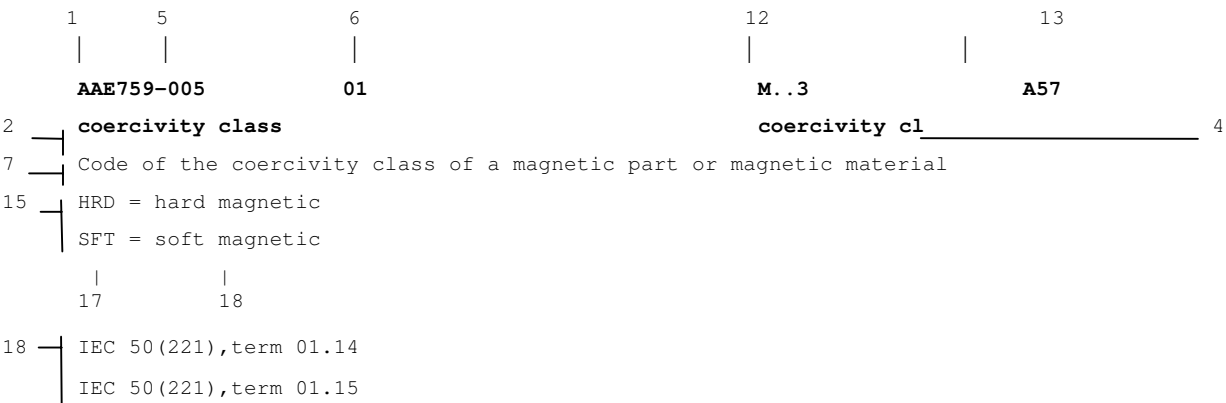


Figure 2 - Non-quantitative data element type specification attributes

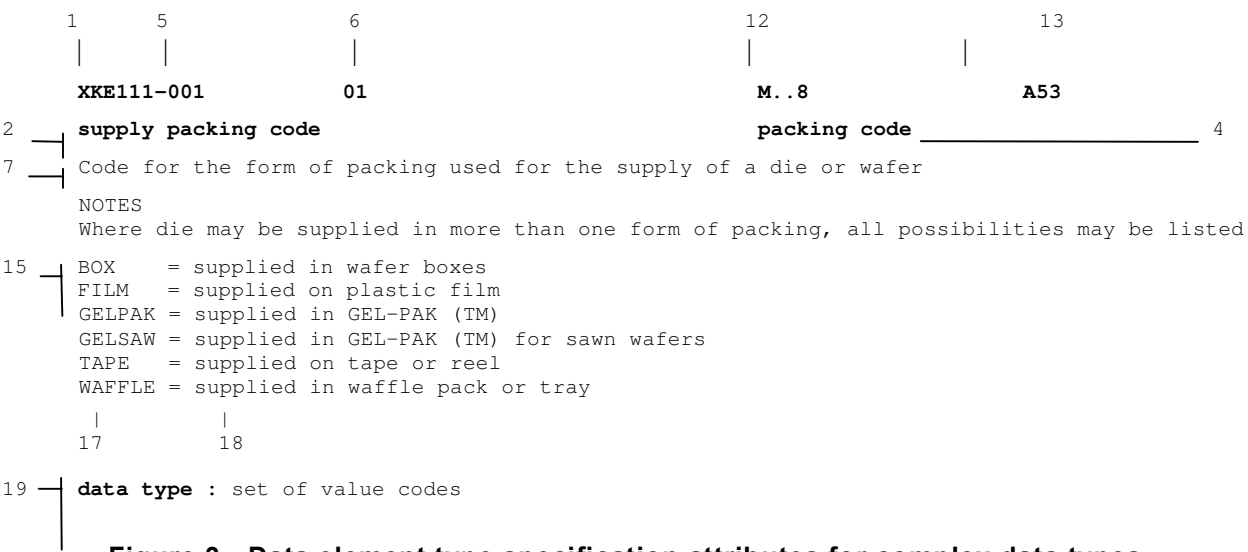


Figure 3 - Data element type specification attributes for complex data types

NOTE Where a data type is a simple type or a level type and the data type can be inferred from other attributes, an explicit data type may not be shown.

Table 1 - Key to data element type attributes

1 Code	11 Source document of data element type definition
2 Preferred name / synonymous name	12 Value format for numeric or string data types or class identifier for class instance type
3 Preferred symbol / synonymous symbol	13 Data element type class
4 Short name	14 Level
5 Version number	15 Value list
6 Revision number	16 Value codes
7 Definition	17 Value meanings
8 Condition(s)	18 Source document(s) of value(s)
9 Unit of measure	19 Data type
10 Formula	