



SLOVENSKI STANDARD

SIST EN 61760-1:2001

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Surface mounting technology - Part 1: Standard method for the specification of surface mounting components (SMDs)

Surface mounting technology -- Part 1: Standard method for the specification of surface mounting components (SMDs)

Oberflächenmontagetechnik -- Teil 1: Genormtes Verfahren zur Spezifizierung oberflächenmontierbarer Bauelemente (SMD)

Technique du montage en surface -- Partie 1: Méthode de normalisation pour la spécification des composants montés en surface (CMS)

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Ta slovenski standard je istoveten z: EN 61760-1:1998

ICS:

31.020	Elektronske komponente na splošno	Electronic components in general
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Surface mounting technology
Part 1: Standard method for the specification of
surface mounting components (SMDs)
(IEC 61760-1:1998)

Technique du montage en surface
Partie 1: Méthode de normalisation pour
la spécification des composants montés
en surface (CMS)
(CEI 61760-1:1998)

Oberflächenmontagetechnik
Teil 1: Genormtes Verfahren zur
Spezifizierung oberflächenmontierbarer
Bauelemente (SMD)
(IEC 61760-1:1998)

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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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 91/134/FDIS, future edition 1 of IEC 61760-1, prepared by IEC TC 91, Surface mounting technology, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61760-1 on 1998-10-01.

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) 1999-07-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2001-07-01

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

Endorsement notice

The text of the International Standard IEC 61760-1:1998 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60062	1992	Marking codes for resistors and capacitors	EN 60062	1993
IEC 60068-1 + corr. October + A1	1988 1988 1992	Environmental testing Part 1: General and guidance	EN 60068-1	1994
IEC 60068-2-20 + A2	1979 1987	Part 2: Tests - Test T: Soldering	HD 323.2.20 S3	1988
IEC 60068-2-21 + corr. November + A1 A2	1983 1991 1985 1991	Part 2: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21 A2	1997 1997
IEC 60068-2-45 A1	1980 1993	Part 2: Tests - Test XA and guidance: Immersion in cleaning solvents	EN 60068-2-45 A1	1992 1993
IEC 60068-2-58	1989	Part 2: Tests - Test Td: Solderability, resistance to dissolution of metallization and to soldering heat of Surface Mounting Devices (SMD)	HD 323.2.58 S1	1991
IEC 60068-2-69	1995	Part 2: Tests - Test Te: Solderability testing of electronic components for surface mounting technology by the wetting balance method	EN 60068-2-69	1996
IEC 60191-6	1990	Mechanical standardization of semiconductor devices Part 6: General rules for the preparation of outline drawings of surface mounted semiconductor device packages	-	-
IEC 60194	1988	Terms and definitions for printed circuits	HD 142 S3	1991

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60249-2-4 + A2	1987	Base materials for printed circuits	EN 60249-2-4	1994
	1992	Part 2: Specifications Specification No. 4: Epoxide woven glass fabric copper-clad laminated sheet, general purpose grade	+ corr. March	1994
IEC 60249-2-5 + A2	1987	Part 2: Specifications	EN 60249-2-5	1994
	1992	Specification No. 5: Epoxide woven glass fabric copper-clad laminated sheet of defined flammability (vertical burning test)	+ corr. March	1994
IEC 60286-3	1991	Packaging of components for automatic handling Part 3: Packaging of leadless components on continuous tapes	HD 143.3 S2 ¹⁾	1992
IEC 60286-4	1997	Part 4: Stick magazines for electronic components encapsulated in packages of form E and G	EN 60286-4	1998
IEC 60286-5 (mod)	1995	Part 5: Matrix trays	EN 60286-5	1997

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1) HD 143.3 S2 is superseded by EN 60286-3:1998, which is based on IEC 60286-3:1997.

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61760-1

Première édition
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1998-08

Technique du montage en surface –

Partie 1:
Méthode de normalisation pour la spécification
des composants montés en surface (CMS)

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Surface mounting technology –

Part 1: [SIST EN 61760-1:2001](https://standards.iteh.ai/catalog/standards/sist/en-61760-1-2001)

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Standard method for the specification
of surface mounting components (SMDs)

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SURFACE MOUNTING TECHNOLOGY –

Part 1: Standard method for the specification
of surface mounting components (SMDs)

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61760-1 has been prepared by IEC technical committee 91: Surface mounting technology.

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

FDIS	Report on voting
91/134/FDIS	91/145/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.

Annex A forms an integral part of this standard.

INTRODUCTION

Traditionally, specifications for electronic components have been developed within each component family, with environmental tests being selected from IEC 60068 and other IEC and ISO publications in an acknowledgement that all components, once in an equipment, satisfy certain criteria.

The introduction and increasing use of surface mounting techniques make it necessary to extend the traditional requirements to those arising from the assembly processing.

Irrespective of component family, all components on the same side of a substrate are likely to be submitted to the same initial soldering process (see flow chart in 5.1).

It is the purpose of this standard to give the requirements of the assembly processes. This is achieved in two steps.

The first step is the definition of reference process conditions as representative of a group of assembly processes.

In the second step, the additional requirements arising from these reference process conditions are given.

There is a need to include the ability of a component to withstand a particular assembly process in the IEC quality assessment system. Such a target can only be achieved by defining appropriate tests relevant to the various assembly processes. This calls for a classification of components according to their suitability for a particular assembly process.

The classification of surface mounting components is based on assembly processes according to the reference process conditions defined in this standard. For each class the appropriate tests and requirements are given.

It is the responsibility of the manufacturer to state whether a component is a surface mounting component and to give its class, which is given in the detail specification together with the appropriate test procedures selected from this standard.

Mixed technology boards, i.e. boards containing through-hole components and SMDs, require additional consideration with respect to the through-hole components. These may be submitted to the same process conditions as the SMDs, and specifications writers wishing to include in detail specifications an assessment of the ability of non-surface mounting components to withstand surface mounting conditions should use the classifications and tests of this standard.

SURFACE MOUNTING TECHNOLOGY –

Part 1: Standard method for the specification of surface mounting components (SMDs)

1 Scope

This International Standard gives a reference set of process conditions and related test conditions to be used when compiling component specifications.

The objective is that SMDs of different natures (passive, active), conforming to this standard and to the appropriate component standard, can be assembled and mounted on a substrate by the use of a common soldering process. To this end, the components should be classified according to the severities of the process for which they are designed.

This standard applies to all electronic components covered by the IEC system which require an assessment with respect to their application to surface mounting.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60062:1992, *Marking codes for resistors and capacitors*

IEC 60068 (all parts), *Environmental testing*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-20:1979, *Environmental testing – Part 2: Tests – Test T: Soldering*

IEC 60068-2-21:1983, *Environmental testing – Part 2: Tests – Test U: Robustness of terminations and integral mounting devices*
Amendment 2 (1991)

IEC 60068-2-45:1980, *Environmental testing – Part 2: Tests – Test XA and guidance: Immersion in cleaning solvents*
Amendment 1 (1993)

IEC 60068-2-58:1989, *Environmental testing – Part 2: Tests – Test Td: Solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMDs)*

IEC 60068-2-69:1995, *Environmental testing – Part 2: Tests – Test Te: Solderability testing of electronic components for surface mounting technology by the wetting balance method*