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# INTERNATIONAL STANDARD



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**Surface mounting technology –  
Part 2: Transportation and storage conditions of surface mounting devices  
(SMD) – Application guide**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SURFACE MOUNTING TECHNOLOGY –****Part 2: Transportation and storage conditions  
of surface mounting devices (SMD) –  
Application guide**

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IEC 61760-2 has been prepared by IEC technical committee 91: Electronics assembly technology. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
91/1666/CDV	91/1708/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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## SURFACE MOUNTING TECHNOLOGY –

### Part 2: Transportation and storage conditions of surface mounting devices (SMD) – Application guide

#### 1 ~~Scope and object~~

This International Standard ~~describes~~ specifies the transportation and storage conditions for surface mounting devices (SMDs) that are fulfilled in order to enable trouble-free processing of surface mounting devices, both active and passive. (Conditions for printed boards are not taken into consideration.)

The object of this document is to ensure that users of SMDs receive and store products that can be further processed (e.g. positioned, soldered) without prejudice to quality and reliability. Improper transportation and storage of SMDs ~~may can~~ cause deterioration and result in assembly problems such as poor solderability, delamination and "popcorning".

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60286-3, Packaging of components for automatic handling – Part 3: Packaging of surface mount components on continuous tapes~~

~~IEC 60286-4, Packaging of components for automatic handling – Part 4: Stick magazines for electronic components encapsulated in packages of form E and G~~

~~IEC 60286-5, Packaging of components for automatic handling – Part 5: Matrix trays~~

~~IEC 60286-6, Packaging of components for automatic handling – Part 6: Bulk case packaging for surface mounting components~~

IEC 60721-3-1:2018, *Classification of environmental conditions – Part 3-1: Classification of groups of environmental parameters and their severities –: Storage*

IEC 60721-3-2:2018, *Classification of environmental conditions – Part 3-2: Classification of groups of environmental parameters and their severities –: Transportation and handling*

~~IEC 60749 (all parts), Semiconductor devices – Mechanical and climatic test methods~~

~~IEC/TS 61340-5-1, Electrostatics – Part 5-1: Protection of electronic devices from electrostatic phenomena – General requirements~~

~~IEC/TR 61340-5-2, Electrostatics – Part 5-2: Protection of electronic devices from electrostatic phenomena – User guide~~

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Surface mounting technology –  
Part 2: Transportation and storage conditions of surface mounting devices  
(SMD) – Application guide**

**Technique du montage en surface –  
Partie 2: Conditions de transport et de stockage des composants pour montage  
en surface (CMS) – Guide d'application**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SURFACE MOUNTING TECHNOLOGY –****Part 2: Transportation and storage conditions  
of surface mounting devices (SMD) –  
Application guide**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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Draft	Report on voting
91/1666/CDV	91/1708/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available



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## **SURFACE MOUNTING TECHNOLOGY –**

### **Part 2: Transportation and storage conditions of surface mounting devices (SMD) – Application guide**

#### **1 Scope**

This International Standard specifies the transportation and storage conditions for surface mounting devices (SMDs) that are fulfilled in order to enable trouble-free processing of surface mounting devices, both active and passive. (Conditions for printed boards are not taken into consideration.)

The object of this document is to ensure that users of SMDs receive and store products that can be further processed (e.g. positioned, soldered) without prejudice to quality and reliability. Improper transportation and storage of SMDs can cause deterioration and result in assembly problems such as poor solderability, delamination and "popcorning".

#### **2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60721-3-1:2018, *Classification of environmental conditions – Part 3-1: Classification of groups of environmental parameters and their severities – Storage*

IEC 60721-3-2:2018, *Classification of environmental conditions – Part 3-2: Classification of groups of environmental parameters and their severities – Transportation and handling*

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## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

## TECHNIQUE DU MONTAGE EN SURFACE –

**Partie 2: Conditions de transport et de stockage  
des composants pour montage en surface (CMS) –  
Guide d'application**

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Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
91/1666/CDV	91/1708/RVC

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). Les principaux types de documents développés par l'IEC sont décrits plus en détail sous [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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## **TECHNIQUE DU MONTAGE EN SURFACE –**

### **Partie 2: Conditions de transport et de stockage des composants pour montage en surface (CMS) – Guide d'application**

#### **1 Domaine d'application**

La présente Norme internationale spécifie les conditions de transport et de stockage qui sont prises en compte afin de permettre la mise en œuvre sans problème des composants pour montage en surface (CMS), tant actifs que passifs. (Les conditions pour les cartes à circuits imprimés ne sont pas prises en compte.)

L'objet du présent document est de s'assurer que l'utilisateur de composants pour montage en surface reçoit et emmagasine des produits qui pourront être utilisés (par exemple placés, brasés) sans problème de qualité et de fiabilité. Des conditions de transport et de stockage impropres peuvent provoquer une détérioration des CMS et il en résulte des problèmes d'assemblage tels qu'une mauvaise brasabilité, la séparation des couches métallisées des terminaisons et l'effet "pop-corn".

#### **2 Références normatives**

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60721-3-1:2018, *Classification des conditions d'environnement – Partie 3-1: Classification des groupements des agents d'environnement et de leurs sévérités – Stockage*

IEC 60721-3-2:2018, *Classification des conditions d'environnement – Partie 3-2: Classification des groupements des agents d'environnement et de leurs sévérités – Transport et manutention*