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Edition 2.0 2021-02

INTERNATIONAL STANDARD

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Surface mounting technology – Part 3: Standard method for the specification of components for through-hole reflow (THR) soldering

Technique du montage en surface – Partie 3: Méthode normalisée relative à la spécification des composants pour le brasage par refusion à trous traversants (THR, Through Hole Reflow)



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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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SURFACE MOUNTING TECHNOLOGY –

Part 3: Standard method for the specification of components for through-hole reflow (THR) soldering

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IEC 61760-3 has been prepared by IEC technical committee 91: Electronics assembly technology. It is an International Standard.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) change position tolerance requirement (0,4 mm maximum to between 0,2 mm and 0,4 mm);
b) introduce through-hole vacant method as a solder paste supply method.

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

Draft	Report on voting
91/1684/FDIS	91/1702/RVD

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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 61760 series, published under the general title *Surface mounting technology*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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SURFACE MOUNTING TECHNOLOGY –

Part 3: Standard method for the specification of components for through-hole reflow (THR) soldering

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1 Scope

This part of IEC 61760 gives a reference set of requirements, process conditions and related test conditions to be used when compiling specifications of electronic components that are intended for usage in through-hole reflow soldering technology.

The object of this document is to ensure that components with leads intended for through-hole reflow and surface mounting components can be subjected to the same placement and mounting processes. Hereto, this document defines test and requirements that need to be part of any component generic, sectional or detail specification, when through-hole reflow soldering is intended.

Furthermore, this document provides component users and manufacturers with a reference set of typical process conditions used in through-hole reflow soldering technology.

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 60068 (all parts), *Environmental testing*

IEC 60068-2-20:2008, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

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

IEC 60068-2-45:1980, *Basic environmental testing procedures – Part 2-45: Tests – Test XA and guidance: Immersion in cleaning solvents*
IEC 60068-2-45:1980/AMD1:1993

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

IEC 60068-2-77[1], *Environmental testing – Part 2-77: Tests – Test 77: Body strength and impact shock*

IEC 60194-1, *Printed boards design, manufacture and assembly – Vocabulary – Part 1: Common usage in printed board and electronic assembly technologies*

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[1] To be integrated into the seventh edition of IEC 60068-2-21.
Stage at the time of publication: IEC/AFDIS 60068-2-21:2021.

IEC 60286 (all parts), *Packaging of components for automatic handling*

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 different forms*

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

IEC 60749-20, *Semiconductor devices – Mechanical and climatic test methods – Part 20: Resistance of plastic encapsulated SMDs to the combined effect of moisture and soldering heat*

IEC 61188-6-4, *Printed boards and printed board assemblies – Design and use – Part 6-4: Land pattern design – Generic requirements for dimensional drawings of surface mounted components (SMD) from the viewpoint of land pattern design*

IEC 61191-3, *Printed board assemblies – Part 3: Sectional specification – Requirements for through-hole mount soldered assemblies*

IEC 61760-1:2020, *Surface mounting technology – Part 1: Standard method for the specification of surface mounting components (SMDs)*

IEC 61760-2, *Surface mounting technology – Part 2: Transportation and storage conditions of surface mounting devices (SMD) – Application guide*

IEC 61760-4:2015, *Surface mounting technology – Part 4: Classification, packaging, labelling and handling of moisture sensitive devices*

IPC/JEDEC J-STD-020, *Moisture/Reflow Sensitivity Classification for Non-hermetic Solid State Surface Mount Devices*

IPC-A-610G, *Acceptability of Electronic Assemblies*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60194-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
through-hole reflow
THR
reflow soldering process for electronic component terminals inserted into the through-hole of the circuit board

3.2
THR components
through-hole reflow components
electronic components with leads which are intended to be subject to through-hole reflow soldering

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