

SLOVENSKI STANDARD
SIST EN IEC 60749-15:2020**01-december-2020****Nadomešča:****SIST EN 60749-15:2011****SIST EN 60749-15:2011/AC:2011**

Polprevodniški elementi - Metode za mehansko in klimatsko preskušanje - 15. del: Odpornost proti spajkalni temperaturi za elemente, montirane v skozijskih luknjah (IEC 60749-15:2020)

Semiconductor devices - Mechanical and climatic test methods - Part 15: Resistance to soldering temperature for through-hole mounted devices (IEC 60749-15:2020)

Halbleiterbauelemente - Mechanische und klimatische Prüfverfahren - Teil 15: Beständigkeit gegen Löttemperatur bei Bauelementen zur Durchsteckmontage (IEC 60749-15:2020)

<https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020>

Dispositifs à semiconducteurs - Méthodes d'essai mécaniques et climatiques - Partie 15: Résistance à la température de soudage pour dispositifs par trous traversants (IEC 60749-15:2020)

Ta slovenski standard je istoveten z: EN IEC 60749-15:2020

ICS:

31.080.01	Polprevodniški elementi (naprave) na splošno	Semiconductor devices in general
-----------	--	----------------------------------

SIST EN IEC 60749-15:2020**en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 60749-15:2020](https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020)

<https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020>

EUROPEAN STANDARD

EN IEC 60749-15

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2020

ICS 31.080.01

Supersedes EN 60749-15:2010 and all of its
amendments and corrigenda (if any)

English Version

**Semiconductor devices - Mechanical and climatic test methods -
Part 15: Resistance to soldering temperature for through-hole
mounted devices
(IEC 60749-15:2020)**

Dispositifs à semiconducteurs - Méthodes d'essais
mécaniques et climatiques - Partie 15: Résistance à la
température de brasage pour dispositifs par trous
traversants
(IEC 60749-15:2020)

Halbleiterbauelemente - Mechanische und klimatische
Prüfverfahren - Teil 15: Beständigkeit gegen Löttemperatur
bei Bauelementen zur Durchsteckmontage
(IEC 60749-15:2020)

This European Standard was approved by CENELEC on 2020-08-18. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 60749-15:2020 (E)**European foreword**

The text of document 47/2630/FDIS, future edition 3 of IEC 60749-15, prepared by IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60749-15:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-05-18
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-08-18

This document supersedes EN 60749-15:2010 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice
iTeh STANDARD PREVIEW
(standards.iteh.ai)

The text of the International Standard IEC 60749-15:2020 was approved by CENELEC as a European Standard without any modification.

[SIST EN IEC 60749-15:2020](https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020)
<https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020>

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-20	-	Environmental testing - Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads	-	-
IEC 60749-3	-	Semiconductor devices - Mechanical and climatic test methods - Part 3: External visual examination	EN 60749-3	-
IEC 60749-8	-	Semiconductor devices - Mechanical and climatic test methods - Part 8: Sealing	EN 60749-8	-

<https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 60749-15:2020](https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020)

<https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020>



IEC 60749-15

Edition 3.0 2020-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Semiconductor devices – Mechanical and climatic test methods –
Part 15: Resistance to soldering temperature for through-hole mounted devices**

**Dispositifs à semiconducteurs – Méthodes d'essais mécaniques
et climatiques –
Partie 15: Résistance à la température de brasage pour dispositifs par trous
traversants**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 31.080.01

ISBN 978-2-8322-8604-3

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Test apparatus	6
4.1 Solder pot	6
4.2 Dipping device	6
4.3 Heatsinks or shielding	6
5 Materials	7
5.1 Solder	7
5.2 Flux	7
6 Procedure	7
6.1 Test method	7
6.2 Ageing and pre-conditioning of specimens	7
6.3 Preparation of the solder bath	7
6.4 Use of flux	7
6.5 Solder dip	8
6.6 Precautions	8
6.7 Measurements	8
6.8 Failure criteria	8
7 Summary	8
Bibliography	9
Table 1 – Parameters for solder dipping	6

ITeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 60749-15:2020](https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020)

<https://standards.iteh.ai/catalog/standards/sist/a9175526-4a5a-4032-9fa9-8d6895bb611d/sist-en-iec-60749-15-2020>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SEMICONDUCTOR DEVICES –
MECHANICAL AND CLIMATIC TEST METHODS –****Part 15: Resistance to soldering temperature
for through-hole mounted devices**

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.
- 2) The formal decisions or agreements of 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 IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60749-15 has been prepared by IEC technical committee 47: Semiconductor devices.

This third edition cancels and replaces the second 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) inclusion of new Clause 3, Terms and definitions;
- b) clarification of the use of a soldering iron for producing the heating effect;
- c) inclusion an option to use accelerated ageing.