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

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/20

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EUROPEAN STANDARD

**EN IEC 60749-20**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2020

ICS 31.080.01

Supersedes EN 60749-20:2009 and all of its amendments and corrigenda (if any)

English Version

**Semiconductor devices - Mechanical and climatic test methods -  
Part 20: Resistance of plastic encapsulated SMDs to the  
combined effect of moisture and soldering heat  
(IEC 60749-20:2020)**

Dispositifs à semiconducteurs - Méthodes d'essais  
mécaniques et climatiques - Partie 20 : Résistance des  
CMS à boîtier plastique à l'effet combiné de l'humidité et de  
la chaleur de brasage  
(IEC 60749-20:2020)

Halbleiterbauelemente - Mechanische und klimatische  
Prüfverfahren - Teil 20: Beständigkeit kunststoffverkappter  
oberflächenmontierbarer Bauelemente (SMD) gegenüber  
der kombinierten Beanspruchung von Feuchte und  
Lötwärme  
(IEC 60749-20:2020)

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

**EN IEC 60749-20:2020 (E)****European foreword**

The text of document 47/2634(F)/FDIS, future edition 3 of IEC 60749-20, prepared by IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60749-20:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2021-07-05 level by publication of an identical national standard or by endorsement
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## 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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	EN 60068-2-20	2008
IEC 60749-3	-	Semiconductor devices - Mechanical and climatic test methods - Part 3: External visual examination	EN 60749-3	-
IEC 60749-30	-	Semiconductor devices - Mechanical and climatic test methods - Part 30: Preconditioning of non-hermetic surface mount devices prior to reliability testing	EN IEC 60749-30	-
IEC 60749-35	-	Semiconductor devices - Mechanical and climatic test methods - Part 35: Acoustic microscopy for plastic encapsulated electronic components	EN 60749-35	-



IEC 60749-20

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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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

**Dispositifs à semiconducteurs – Méthodes d’essais mécaniques  
et climatiques –  
Partie 20: Résistance des CMS à boîtier plastique à l’effet combiné  
de l’humidité et de la chaleur de brasage**



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IEC 60749-20

Edition 3.0 2020-08

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Part 20: Resistance of plastic encapsulated SMDs to the combined effect of  
moisture and soldering heat**

**Dispositifs à semiconducteurs – Méthodes d’essais mécaniques  
et climatiques –  
Partie 20: Résistance des CMS à boîtier plastique à l’effet combiné  
de l’humidité et de la chaleur de brasage**

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

### Part 20: Resistance of plastic encapsulated SMDs to the combined effect of moisture and soldering heat

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International Standard IEC 60749-20 has been prepared by IEC technical committee 47: Semiconductor devices.

This third edition cancels and replaces the second edition published in 2008. This edition constitutes a technical revision.

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

- a) incorporation of a technical corrigendum to IEC 60749-20:2008 (second edition );
- b) inclusion of new Clause 3;
- c) inclusion of explanatory notes.

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

FDIS	Report on voting
47/2634/FDIS	47/2646/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60749 series, published under the general title *Semiconductor devices – Mechanical and climatic test methods*, 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

### Part 20: Resistance of plastic encapsulated SMDs to the combined effect of moisture and soldering heat

#### 1 Scope

This part of IEC 60749 provides a means of assessing the resistance to soldering heat of semiconductors packaged as plastic encapsulated surface mount devices (SMDs). This test is destructive.

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

IEC 60749-3, *Semiconductor devices – Mechanical and climatic test methods – Part 3: External visual examination*

IEC 60749-30, *Semiconductor devices – Mechanical and climatic test methods – Part 30: Preconditioning of non-hermetic surface mount devices prior to reliability testing*

IEC 60749-35, *Semiconductor devices – Mechanical and climatic test methods – Part 35: Acoustic microscopy for plastic encapsulated electronic components*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**