SLOVENSKI STANDARD
SIST EN 60749-7:2011

01-december-2011

Polprevodniški elementi - Metode za mehansko in klimatsko preskušanje - 7. del: Merjenje količine notranje vlage in analiza drugih preostalih plinov

Semiconductor devices - Mechanical and climatic test methods - Part 7: Internal moisture content measurement and the analysis of other residual gases

Halbleiterbauelemente - Mechanische und klimatische Prüfverfahren - Teil 7: Messung des inneren Feuchtegehaltes und Analyse von anderen Restgasen

Dispositifs à semiconducteurs - Méthodes d'essais mécaniques et climatiques - Partie 7: Mesure de la teneur en humidité interne et analyse des autres gaz résiduels

Ta slovenski standard je istoveten z: **EN 60749-7:2011**

ICS:

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

SIST EN 60749-7:2011 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60749-7

September 2011

ICS 31.080.01

Supersedes EN 60749-7:2002

English version

Semiconductor devices - Mechanical and climatic test methods - Part 7: Internal moisture content measurement and the analysis of other residual gases

(IEC 60749-7:2011)

Dispositifs à semiconducteurs - Méthodes d'essais mécaniques et climatiques - Partie 7: Mesure de la teneur en humidité interne et analyse des autres gaz résiduels

(CEI 60749-7:2011)

Halbleiterbauelemente - Mechanische und klimatische Prüfverfahren - Teil 7: Messung des inneren Feuchtegehaltes und Analyse von anderen Restgasen

(IEC 60749-7:2011)

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CENELEC

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

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Foreword

The text of document 47/2087/FDIS, future edition 2 of IEC 60749-7, prepared by IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60749-7 on 2011-07-22.

This European Standard supersedes EN 60749-7:2002.

The main change is the removal of the two alternative methods formerly designated method 2 and method 3.

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

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)	2012-04-22
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-07-22

Endorsement notice

The text of the International Standard IEC 60749-7:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60749-8	NOTE Harmonized as EN 60749-8.

IEC 60749-7

Edition 2.0 2011-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Semiconductor devices – Mechanical and climatic test methods – Part 7: Internal moisture content measurement and the analysis of other residual gases

Dispositifs à semiconducteurs – Méthodes essais mécaniques et climatiques – Partie 7: Mesure de la teneur en humidité interne et analyse des autres gaz résiduels

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

PRICE CODE
CODE PRIX

L

ICS 31.080.01

ISBN 978-2-88912-532-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

Part 7: Internal moisture content measurement and the analysis of other residual gases

FOREWORD

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International Standard IEC 60749-7 has been prepared by IEC technical committee 47: Semiconductor devices.

This second edition cancels and replaces the first edition published in 2002 and constitutes a technical revision. This second edition has been completely re-written so as to align it with the text of the latest versions of MIL-STD-750, method 1018 and MIL-STD-883, method 1018.

The main change is the removal of the two alternative methods formerly designated method 2 and method 3.

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

FDIS	Report on voting
47/2087/FDIS	47/2098/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.

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

A list of all parts in the IEC 60749 series, 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 publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

Part 7: Internal moisture content measurement and the analysis of other residual gases

1 Scope

This International Standard specifies the testing and measurement of water vapour and other gas content of the atmosphere inside a metal or ceramic hermetically sealed device. The test is used as a measure of the quality of the sealing process and to provide information about the long-term chemical stability of the atmosphere inside the package. It is applicable to semiconductor devices sealed in such a manner but generally only used for high reliability applications such as military or aerospace. This test is destructive.

2 Normative references

The following referenced documents are indispensable for the application 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.

None

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
parts per million by volume
ppmv
the concentration of one substance in another substance expressed as a ratio of parts of the one substance in a million parts of the other substance, measured by volume

4 Test apparatus

4.1 Mass spectrometer method

This method measures the water vapour content of the device atmosphere by mass spectrometry. The apparatus is detailed below.

4.2 Mass spectrometer

The mass spectrometer shall be capable of meeting the requirements of 4.2.1 to 4.2.2 and shall be calibrated in accordance with 4.2.3 to 4.2.8.

4.2.1 Spectra range

The mass spectrometer shall be capable of reading a minimum spectra range of 1 AMU to 100 AMU (atomic mass units).