BS EN IEC 60749-26:2018

BSI Standards Publication

Semiconductor devices - Mechanical and climatic test methods

Part 26: Electrostatic discharge (ESD) sensitivity testing - Human body model (HBM)(IEC 60749-26:2018)

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National foreword

This British Standard is the UK implementation of EN IEC 60749-26:2018. It is identical to IEC 60749-26:2018. It supersedes BS EN 60749-26:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/47, Semiconductors.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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(IEC 60749-26:2018)

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(IEC 60749-26:2018)

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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

European foreword

The text of document 47/2438/FDIS, future edition 4 of IEC 60749-26, prepared by IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60749-26:2018.

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)	2018-11-19
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-02-19

This document supersedes EN 60749-26:2014.

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Endorsement notice

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60749 (series)	NOTE	Harmonized as EN 60749 (series).
IEC 60749-27	NOTE	Harmonized as EN 60749-27.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

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FOREWORD

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International Standard IEC 60749-26 has been prepared by IEC technical committee 47: Semiconductor devices in collaboration with technical committee 101: Electrostatics.

This fourth edition cancels and replaces the third edition published in 2013. This edition constitutes a technical revision. This standard is based upon ANSI/ESDA/JEDEC JS-001-2014. It is used with permission of the copyright holders, ESD Association and JEDEC Solid state Technology Association.

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

a) a new subclause relating to HBM stressing with a low parasitic simulator is added, together with a test to determine if an HBM simulator is a low parasitic simulator;

b) a new subclause is added for cloned non-supply pins and a new annex is added for testing cloned non-supply pins.

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

FDIS	Report on voting
47/2438/FDIS	47/2454/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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

Part 26: Electrostatic discharge (ESD) sensitivity testing – Human body model (HBM)

1 Scope

This part of IEC 60749 establishes the procedure for testing, evaluating, and classifying components and microcircuits according to their susceptibility (sensitivity) to damage or degradation by exposure to a defined human body model (HBM) electrostatic discharge (ESD).

The purpose of this document is to establish a test method that will replicate HBM failures and provide reliable, repeatable HBM ESD test results from tester to tester, regardless of component type. Repeatable data will allow accurate classifications and comparisons of HBM ESD sensitivity levels.

ESD testing of semiconductor devices is selected from this test method, the machine model (MM) test method (see IEC 60749-27) or other ESD test methods in the IEC 60749 series. Unless otherwise specified, this test method is the one selected.

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.

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 http://www.iso.org/obp

3.1
associated non-supply pin
non-supply pin (typically an I/O pin) associated with a supply pin group

Note 1 to entry A non-supply pin is considered to be associated with a supply pin group if either:

a) the current from the supply pin group (i.e., VDDIO) is required for the function of the electrical circuit(s) (I/O driver) that connect(s) (high/low impedance) to that non-supply pin;

b) a parasitic path exists between non-supply and supply pin group (e.g., open-drain type non-supply pin to a VCC supply pin group that connects to a nearby N-well guard ring).