

INTERNATIONAL STANDARD

IEC
60749-24

First edition
2004-03

Semiconductor devices – Mechanical and climatic test methods –

Part 24: Accelerated moisture resistance – Unbiased HAST

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SEMICONDUCTOR DEVICES –
MECHANICAL AND CLIMATIC TEST METHODS –**

Part 24: Accelerated moisture resistance – Unbiased HAST

FOREWORD

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International Standard IEC 60749-24 has been prepared by IEC technical committee 47: Semiconductor devices.

This standard cancels and replaces IEC/PAS 62336 published in 2002. This first edition constitutes a technical revision.

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

FDIS	Report on voting
47/1736/FDIS	47/1746/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.

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

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- withdrawn;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

SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

Part 24: Accelerated moisture resistance – Unbiased HAST

1 Scope and object

The unbiased highly accelerated stress testing (HAST) is performed for the purpose of evaluating the reliability of non-hermetically packaged solid-state devices in humid environments.

It is a highly accelerated test which employs temperature and humidity under non-condensing conditions to accelerate the penetration of moisture through the external protective material (encapsulant or seal) or along the interface between the external protective material and the metallic conductors which pass through it. Bias is not applied in this test to ensure that the failure mechanisms potentially overshadowed by bias can be uncovered (e.g. galvanic corrosion).

This test is used to identify failure mechanisms internal to the package and is destructive.

NOTE This test is a complete rewrite of the test contained in Clause 4C of Chapter 3 of IEC 60749 (1996) (without bias voltage).

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.

IEC 60749-33, *Semiconductor devices – Mechanical and climatic test methods – Part 33: Accelerated moisture resistance – unbiased autoclave*

IEC 60749-5, *Semiconductor devices – Mechanical and climatic test methods – Part 5: Steady-state temperature humidity bias life test*