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Semiconductor devices - Mechanical and climatic test methods - Part 44: Neutron beam irradiated single event effect (SEE) test method for semiconductor devices

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

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EUROPEAN STANDARD
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ICS 31.080.01

English Version

Semiconductor devices - Mechanical and climatic test methods -
Part 44: Neutron beam irradiated single event effect (SEE) test
method for semiconductor devices
(IEC 60749-44:2016)

Dispositifs à semiconducteurs - Méthodes d'essais
mécaniques et climatiques - Partie 44: Méthode d'essai des
effets d'un événement isolé (SEE) irradié par un faisceau
de neutrons pour des dispositifs à semiconducteurs
(IEC 60749-44:2016)

Halbleiterbauelemente - Mechanische und klimatische
Prüfverfahren - Teil 44: Prüfverfahren zur Einzelereignis-
Effekt-Neutronenbestrahlung von Halbleiterbauelementen
(IEC 60749-44:2016)

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Comité Européen de Normalisation Electrotechnique
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European foreword

The text of document 47/2303/FDIS, future edition 1 of IEC 60749-44, prepared by IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60749-44:2016.

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Part 44: Neutron beam irradiated single event effect (SEE) test method for
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SEMICONDUCTOR DEVICES –
MECHANICAL AND CLIMATIC TEST METHODS –****Part 44: Neutron beam irradiated single event effect (SEE)
test method for semiconductor devices**

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FDIS	Report on voting
47/2303/FDIS	47/2312/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.

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SEMICONDUCTOR DEVICES – MECHANICAL AND CLIMATIC TEST METHODS –

Part 44: Neutron beam irradiated single event effect (SEE) test method for semiconductor devices

1 Scope

This part of IEC 60749 establishes a procedure for measuring the single event effects (SEEs) on high density integrated circuit semiconductor devices including data retention capability of semiconductor devices with memory when subjected to atmospheric neutron radiation produced by cosmic rays. The single event effects sensitivity is measured while the device is irradiated in a neutron beam of known flux. This test method can be applied to any type of integrated circuit.

NOTE 1 Semiconductor devices under high voltage stress can be subject to single event effects including SEB, single event burnout and SEGR single event gate rupture, for this subject which is not covered in this document, please refer to IEC 62396-4 [2].

NOTE 2 In addition to the high energy neutrons some devices can have a soft error rate due to low energy (<1 eV) thermal neutrons. For this subject which is not covered in this document, please refer to IEC 62396-5 [3].

2 Normative references

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