Irish Standard
I.S. EN 60747-15:2012

Semiconductor devices - Discrete devices -- Part 15: Isolated power semiconductor devices (IEC 60747 -15:2010 (EQV))

I.S. EN 60747-15:2012

Incorporating amendments/corrigenda issued since publication:

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EUROPEAN STANDARD

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EN 60747-15

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Supersedes EN 60747-15:2004

English version

Semiconductor devices - Discrete devices - Part 15: Isolated power semiconductor devices

(IEC 60747-15:2010)

Dispositifs à semi-conducteurs - Dispositifs discrets - Partie 15: Dispositifs de puissance à semiconducteurs isolés (CEI 60747-15:2010)

Halbleiterbauelemente - Einzel-Halbleiterbauelemente - Teil 15: Isolierte Leistungshalbleiter (IEC 60747-15:2010)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

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Ref. No. EN 60747-15:2012 E

Foreword

The text of document 47E/403/FDIS, future edition 2 of IEC 60747-15, prepared by SC 47E, "Discrete semiconductor devices", of IEC TC 47, "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60747-15:2012.

The following dates are 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)	2012-09-16
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-01-20

This European Standard supersedes EN 60747-15:2004.

The main changes with respect to EN 60747-15:2004 are listed below.

a) Clause 3, 4 and 5 were re-edited and some of them were combined to other sub clauses.

b) Clause 6, 7 were re-edited as a part of “Measuring methods” with amendment of suitable addition and deletion.

c) Clause 8 was amended by suitable addition and deletion.

d) Annex C, D and Bibliography were deleted.

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

Endorsement notice

The text of the International Standard IEC 60747-15:2010 was approved by CENELEC as a European Standard without any modification.

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

IEC 60112	NOTE	Harmonized as EN 60112.
IEC 61287-1:2005	NOTE	Harmonized as EN 61287-1:2006 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60270	-	High-voltage test techniques - Partial discharge measurements	EN 60270	-
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60721-3-3	1994	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weatherprotected locations	EN 60721-3-3	1995
IEC 60747-1	2006	Semiconductor devices - Part 1: General	-	-
IEC 60747-2	-	Semiconductor devices - Discrete devices and integrated circuits - Part 2: Rectifier diodes	-	-
IEC 60747-6	-	Semi conductor devices - Part 6: Thyristors	-	-
IEC 60747-7	-	Semiconductor devices - Part 7: Bipolar transistors	-	-
IEC 60747-8	-	Semiconductor devices - Part 8: Field-effect transistors	-	-
IEC 60747-9	-	Surface mounting technology - Discrete devices - Part 9: Insulated-gate bipolar transistors (IGBTs)	-	-
IEC 60749-5	-	Semiconductor devices - Mechanical and climatic test methods - Part 5: Steady-state temperature humidity bias life test	EN 60749-5	-
IEC 60749-6	-	Semiconductor devices - Mechanical and climatic test methods - Part 6: Storage at high temperature	EN 60749-6	-
IEC 60749-10	-	Semiconductor devices - Mechanical and climatic test methods - Part 10: Mechanical shock	EN 60749-10	-
IEC 60749-12	-	Semiconductor devices - Mechanical and climatic test methods - Part 12: Vibration, variable frequency	EN 60749-12	-

Publication	Year	Title	EN/HD	Year
IEC 60749-15	-	Semiconductor devices - Mechanical and climatic test methods - Part 15: Resistance to soldering temperature for through-hole mounted devices	EN 60749-15	-
IEC 60749-21	-	Semiconductor devices - Mechanical and climatic test methods - Part 21: Solderability	EN 60749-21	-
IEC 60749-25	-	Semiconductor devices - Mechanical and climatic test methods - Part 25: Temperature cycling	EN 60749-25	-
IEC 60749-34	-	Semiconductor devices - Mechanical and climatic test methods - Part 34: Power cycling	EN 60749-34	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEMICONDUCTOR DEVICES – DISCRETE DEVICES –

Part 15: Isolated power semiconductor devices

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60747-15 has been prepared by subcommittee 47E: Discrete semiconductor devices, of IEC technical committee 47: Semiconductor devices.

This second edition of IEC 60747-15 cancels and replaces the first edition published in 2003.

The main changes with respect to previous edition are listed below.

a) Clause 3, 4 and 5 were re-edited and some of them were combined to other sub clauses.
b) Clause 6, 7 were re-edited as a part of "Measuring methods" with amendment of suitable addition and deletion.
c) Clause 8 was amended by suitable addition and deletion.
d) Annex C, D and Bibliography were deleted.

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

FDIS	Report on voting
47E/403/FDIS	47E/407/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.

This International Standard is to be read in conjunction with IEC 60747-1:2006.

A list of all the parts in the IEC 60747 series, under the general title *Semiconductor devices – Discrete devices*, 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 – DISCRETE DEVICES –

Part 15: Isolated power semiconductor devices

1 Scope

This part of IEC 60747 gives the requirements for isolated power semiconductor devices excluding devices with incorporated control circuits. These requirements are additional to those given in other parts of IEC 60747 for the corresponding non-isolated power devices.

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 60270, *High-voltage test techniques – Partial discharge measurements*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60721-3-3:1994, *Classification of environmental conditions – Part 3-3: Classification of groups of environmental parameters and their severities – Stationary use at weather protected locations*

IEC 60747-1:2006, *Semiconductor devices – Part 1: General*

IEC 60747-2, *Semiconductor devices – Discrete devices and integrated circuits – Part 2: Rectifier diodes*

IEC 60747-6, *Semiconductor devices – Part 6: Thyristors*

IEC 60747-7, *Semiconductor discrete devices and integrated circuits – Part 7: Bipolar transistors*

IEC 60747-8, *Semiconductor devices – Part 8: Field-effect transistors*

IEC 60747-9, *Semiconductor devices – Discrete devices – Part 9: Insulated-gate bipolar transistors (IGBTs)*

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

IEC 60749-6, *Semiconductor devices – Mechanical and climatic test methods – Part 6: Storage at high temperature*

IEC 60749-10, *Semiconductor devices – Mechanical and climatic test methods – Part 10: Mechanical shock*

IEC 60749-12, *Semiconductor devices – Mechanical and climatic test methods – Part 12: Vibration, variable frequency*