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Standards

Irish Standard  
I.S. EN 60747-5-5:2011&A1:2015

# Semiconductor devices - Discrete devices - Part 5-5: Optoelectronic devices - Photocouplers

**I.S. EN 60747-5-5:2011&A1:2015**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

EN 60747-5-5:2011/A1:2015

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Part 5-5: Optoelectronic devices - Photocouplers  
(IEC 60747-5-5:2007/A1:2013)**

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Partie 5-5: Dispositifs optoélectroniques - Photocoupleurs  
(IEC 60747-5-5:2007/A1:2013)

Halbleiterbauelemente - Einzel-Halbleiterbauelemente -  
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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## **Foreword**

This document (EN 60747-5-5:2011/A1:2015) consists of the text of IEC 60747-5-5:2007/A1:2013 prepared by SC 47E "Discrete semiconductor devices" of IEC/TC 47 "Semiconductor devices".

The following dates are fixed:

- latest date by which the document has to be implemented (dop) 2016-01-19  
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-01-19

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60747-5-5**

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 47E/332/FDIS, future edition 1 of IEC 60747-5-5, prepared by SC 47E, Discrete semiconductor devices, of IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60747-5-5 on 2011-01-02.

This EN 60747-5-5:2011 replaces the clauses for photocouplers (or optocouplers) described in EN 60747-5-1, EN 60747-5-2 and EN 60747-5-3, including their amendments.

The contents for phototransistors and photothyristors in EN 60747-5-1, EN 60747-5-2 and EN 60747-5-3, including their amendments, will be considered obsolete as of the effective date of publication of this standard.

NOTE Photocouplers that are certified to the previous version of the photocoupler standard, namely EN 60747-5-1/2/3, should be considered in compliance with the requirements and provisions of EN 60747-5-5.

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| – latest date by which the EN has to be implemented<br>at national level by publication of an identical<br>national standard or by endorsement | (dop) | 2012-01-02 |
| – latest date by which the national standards conflicting<br>with the EN have to be withdrawn  | (dow) | 2014-01-02 |

Annex ZA has been added by CENELEC.

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

IEC 60270:2000	NOTE	Harmonized as EN 60270:2001 (not modified).
IEC 60747-5-1:1997	NOTE	Harmonized as EN 60747-5-1:2001 (not modified).
IEC 60747-5-2:1997	NOTE	Harmonized as EN 60747-5-2:2001 (not modified).
IEC 60747-5-3:1997	NOTE	Harmonized as EN 60747-5-3:2001 (not modified).

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## **Annex ZA** (normative)

### **Normative references to international publications with their corresponding European publications**

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.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60065 (mod)	2001	Audio, video and similar electronic apparatus - Safety requirements	EN 60065 + corr. August + A11	2002 2007 2008
IEC 60068-1	1988	Environmental testing - Part 1: General and guidance	EN 60068-1 <sup>1)</sup>	1994
IEC 60068-2-1	2007	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-2	2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 60068-2-6	2007	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-14	1984	Environmental testing - Part 2: Tests - Test N: Change of temperature	EN 60068-2-14 <sup>2) 3)</sup>	1999
IEC 60068-2-17	1994	Environmental testing - Part 2: Tests - Test Q: Sealing	EN 60068-2-17	1994
IEC 60068-2-27	2008	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	2009
IEC 60068-2-30	2005	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	2005
IEC 60068-2-58	2004	Environmental testing - Part 2-58: Tests - Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	EN 60068-2-58 + corr. December	2004 2004
IEC 60068-2-78	2001	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2001

<sup>1)</sup> EN 60068-1 includes A1 to IEC 60068-1 + corr. October 1988.

<sup>2)</sup> EN 60068-2-14 includes A1 to IEC 60068-2-14.

<sup>3)</sup> EN 60068-2-14 is superseded by EN 60068-2-14:2009, which is based on IEC 60068-2-14:2009.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60216-1	2001	Electrical insulating materials - Properties of thermal endurance - Part 1: Ageing procedures and evaluation of test results	EN 60216-1	2001
IEC 60216-2	2005	Electrical insulating materials - Thermal endurance properties - Part 2: Determination of thermal endurance properties of electrical insulating materials - Choice of test criteria	EN 60216-2	2005
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60672-2	1999	Ceramic and glass insulating materials - Part 2: Methods of test	EN 60672-2	2000
IEC 60695-11-5	2004	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005





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# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

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**Semiconductor devices – Discrete devices –  
Part 5-5: Optoelectronic devices – Photocouplers**

**Dispositifs à semiconducteurs – Dispositifs discrets –  
Partie 5-5: Dispositifs optoélectroniques – Photocoupleurs**



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# **INTERNATIONAL STANDARD**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### **SEMICONDUCTOR DEVICES – DISCRETE DEVICES –**

#### **Part 5-5: Optoelectronic devices – Photocouplers**

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International Standard IEC 60747-5-5 has been prepared by subcommittee 47E: Discrete semiconductor devices, of IEC technical committee 47: Semiconductor devices.

This standard replaces the clauses for photocouplers (or optocouplers) described in IEC 60747-5-1, IEC 60747-5-2 and IEC 60747-5-3, including their amendments.

The contents for phototransistors and photothyristors in IEC 60747-5-1, IEC 60747-5-2 and IEC 60747-5-3, including their amendments, will be considered obsolete as of the effective date of publication of this standard.

NOTE Photocouplers that are certified to the previous version of the photocoupler standard, namely IEC 60747-5-1/2/3, are to be considered in compliance with the requirements and provisions of IEC 60747-5-5.



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

FDIS	Report on voting
47E/332/FDIS	47E/340/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 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 maintenance result 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 5-5: Optoelectronic devices – Photocouplers**

#### **1 Scope**

This part of IEC 60747 gives the terminology, essential ratings, characteristics, safety tests as well as the measuring methods for photocouplers (or optocouplers).

NOTE The word “optocoupler” can also be used instead of “photocoupler”.

#### **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 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1:2007, *Environmental testing – Part 2: Tests – Tests A: Cold*

IEC 60068-2-2:2007, *Environmental testing – Part 2: Tests – Tests B: Dry heat*

IEC 60068-2-78:2001, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60068-2-6:—, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*<sup>1</sup>

IEC 60068-2-14:1984, *Environmental testing – Part 2: Tests – Test N: Change of temperature*

IEC 60068-2-17:1994, *Basic environmental testing procedures – Part 2: Tests – Test Q: Sealing*

IEC 60068-2-27:—, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock and bump*<sup>2</sup>

IEC 60068-2-30:2005, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-58:2005, *Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

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<sup>1</sup> To be published (replacing the sixth edition)

<sup>2</sup> To be published (replacing the third edition)

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