BS IEC 60747-14-11:2021

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# Semiconductor devices

Part 14-11: Semiconductor sensors — Test method of surface acoustic wave-based integrated sensors for measuring ultraviolet, illumination and temperature

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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 committee manager.

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Published by BSI Standards Limited 2021

ISBN 978 0 580 98982 7

ICS 31.080.01

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2021.

**Amendments/corrigenda issued since publication**

| Date | Text affected |
|---|---|

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# IEC 60747-14-11

Edition 1.0 2021-03

# INTERNATIONAL STANDARD

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## Semiconductor devices –
## Part 14-11: Semiconductor sensors – Test method of surface acoustic wave-based integrated sensors for measuring ultraviolet, illumination and temperature

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.080.01

ISBN 978-2-8322-9465-9

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# SEMICONDUCTOR DEVICES –

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International Standard IEC 60747-14-11 has been prepared by subcommittee 47E: Discrete semiconductor devices, of IEC technical committee 47: Semiconductor devices.

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

| CDV | Report on voting |
|---|---|
| 47E/674/CDV | 47E/709/RVC |

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.

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A list of all parts in the IEC 60747 series, published under the general title *Semiconductor devices*, can be found on the IEC website.

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# SEMICONDUCTOR DEVICES –

# Part 14-11: Semiconductor sensors – Test method of surface acoustic wave-based integrated sensors for measuring ultraviolet, illumination and temperature

## 1 Scope

This part of IEC 60747 defines the terms, definitions, configuration, and test methods can be used to evaluate and determine the performance characteristics of surface acoustic wave-based semiconductor sensors integrated with ultraviolet, illuminance, and temperature sensors. The measurement methods are for DC characteristics and RF characteristics, and the measurement method for RF characteristics includes a direct mode and differential amplifier mode based on feedback oscillation. This document excludes devices dealt with by TC 49: piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection.

## 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.

IEC 63041-1, *Piezoelectric sensors – Part 1: Generic specifications*

IEC 63041-2, *Piezoelectric sensors – Part 2: Chemical and biochemical sensors*

## 3 Terms and definitions

For the purpose 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

Units, letter symbols and terminology shall, wherever possible, be taken from IEC 63041-1 and IEC 63041-2.

### 3.1 General terms

**3.1.1**
**surface acoustic wave**
**SAW**
acoustic wave, propagating along the surface of an elastic substrate, the amplitude of which decays exponentially with substrate depth

Note 1 to entry: This entry was numbered 561-06-01 in IEC 60050-561:1991, Amendment 1:1995.

[SOURCE: IEC 60050-561:2014, 561-01-86]

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