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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 20521.1-2026

Replacing GB/T 20521-2006

**Semiconductor devices - Part 14-1: Semiconductor sensors -
Generic specification for sensors**

半导体器件 第14-1部分：半导体传感器 传感器总规范
(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 14-1 of "Semiconductor Devices Part 14: Semiconductor Sensors".

The following sections of "Conductor Sensors" have been published.

- Part 14-2.Hall Elements in Semiconductor Sensors (GB/T 20521.2-2025);
- Part 14-3.Semiconductor Sensors - Pressure Sensors (GB/T 20522-2006);
- Part 14-4.Semiconductor Sensors - Semiconductor Accelerometers (GB/T 20521.4-2025);
- Part 14-5.Semiconductor Sensors PN Junction Semiconductor Temperature Sensor (GB/T 20521.5-2025).

This document supersedes GB/T 20521-2006 "Semiconductor Devices - Part 14-1.General Principles and Classification of Semiconductor Sensors", and is consistent with...

Compared with GB/T 20521-2006, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- Added some terms and definitions (see 3.2, 3.3, 3.6, 3.8, 3.13, 3.16, 3.22, 3.25);
- A new chapter on "Logos" has been added (see Chapter 5);
- A new chapter on "Quality Assessment Procedures" has been added (see Chapter 6);
- A new chapter on "Trial and Testing Procedures" has been added (see Chapter 7);
- An Appendix A (Normative) "Sampling Procedures" has been added (see Appendix A).

This document is modified to adopt IEC 60747-14-1:2010 "Semiconductor devices - Part 14-1.Semiconductor sensors - General specification".

This document has undergone the following structural adjustments compared to IEC 60747-14-1:2010.

- Chapter 3 corresponds to section 3.2 of IEC 60747-14-1:2010;
- Chapter 4 corresponds to section 3.1 of IEC 60747-14-1:2010;
- 7.1.1 corresponds to Chapter 4 and 7.1.1 of IEC 60747-14-1:2010;
- A.1.1 and A.2.1 correspond to the suspension sections under A.1 and A.2 in IEC 60747-14-1:2010, respectively, as well as A.1.2, A.1.3, and A.2.2.
- A.2.3 corresponds to A.1.1, A.1.2, A.2.1, and A.2.2 in IEC 60747-14-1:2010, respectively.

The technical differences between this document and IEC 60747-14-1:2010, and the reasons therefor, are as follows.

- ISO 1000 has been replaced by the normatively referenced GB 3100 (see Chapter 4);
- The sensor classification types have been revised and supplemented (see Table 1) to more comprehensively cover the types of semiconductor sensors;

---The removal of the mark should comply with the requirements of customs regulations.

The following editorial changes have been made to this document.

---The chapter numbers for 5.1, 5.2, and 5.3 have been corrected.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This document is under the jurisdiction of the National Semiconductor Device Standardization Technical Committee (SAC/TC78).

Introduction

This document is Part 14-1 of "Semiconductor Devices Part 14: Semiconductor Sensors", which specifies the general requirements for semiconductor sensors.

Require.

GB/T 20521 "Semiconductor Devices - Part 14: Semiconductor Sensors" is proposed to consist of 8 parts.

---Semiconductor Devices Part 14-1.Semiconductor Sensors - General Specification. The purpose is to define various types of semiconductor sensors.

The basic requirements.

---Semiconductor Devices Part 14-2.Semiconductor Sensors Hall Elements. The purpose is to specify the relevant parameters of semiconductor Hall elements.

Require.

---Semiconductor Devices Part 14-3.Semiconductor Sensors - Pressure Sensors. The purpose is to specify the requirements for semiconductor pressure sensors.

Relevant requirements.

---Semiconductor Devices Part 14-4.Semiconductor Sensors, Semiconductor Accelerometers. The purpose is to specify semiconductor accelerometers.

The relevant requirements.

---Semiconductor Devices Part 14-5.Semiconductor Sensors PN Junction Semiconductor Temperature Sensors. The purpose is to specify semiconductor...

Requirements for PN junction temperature sensors.

---Semiconductor Devices Part 14-10.Performance Evaluation Methods for Wearable

Glucose Sensors. The purpose is to...

The performance evaluation method for wearable glucose sensors is specified.

---Semiconductor Devices Parts 14-11.Semiconductor Sensors for Measuring Ultraviolet Light, Light, and Temperature, Based on Surface Acoustic Waves Integrated sensor testing methods are proposed. The aim is to define integrated surface acoustic wave-based sensors for measuring ultraviolet light, ambient light, and temperature.

Sensor performance testing methods.

---Semiconductor Devices Parts 14-12.Performance Testing Methods for CMOS Imaging-Based Gas Sensors this document aims to define performance testing methods for CMOS imaging-based gas sensors, including terminology and definitions, and testing environments.

Conditions, testing system, testing methods, and test reports.

Semiconductor Devices Part 14-1.

Semiconductor Sensor General Specification

1 Scope

This document defines the terminology for semiconductor sensors, and specifies the units, symbols, classifications, markings, quality assessment procedures, and testing methods.

program.

This document applies to sensors made of semiconductor materials; sensors made of other materials (such as insulating and ferroelectric materials) should refer to this document for guidance.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB 3100 International System of Units and its Application (GB 3100-1993, eqv ISO 1000:1992) GB/T 17573-2026 General Rules for Semiconductor Devices (IEC 60747-1:2006, IDT) ISO 2859-1 Sampling procedures for inspection by attributes - Part 1: Sampling methods for inspection on a lot basis using an acceptance quality limit (AQL) index Note. GB/T 2828.1-2012 Sampling Procedures for Inspection by Attributes - Part 1: