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

GB/T 42706.9-2026

**Electronic components - Long-term storage of electronic
semiconductor devices - Part 9: Special cases**

电子元器件 半导体器件长期贮存 第9部分：特殊情况

(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 9 of GB/T 42706 "Electronic Components and Semiconductor Devices - Long-Term Storage". GB/T 42706 has been published.

The following parts were included.

---Part 1: General Provisions;

---Part 2: Degradation Mechanisms;

---Part 3: Data;

---Part 4: Storage;

---Part 5: Chips and Wafers;

---Part 6: Encapsulating or Coating Components;

---Part 7: Microelectromechanical Devices;

---Part 8: Passive Electronic Devices;

---Part 9: Special Cases this document is equivalent to IEC 62435-9:2021 "Electronic components, semiconductor devices - Long-term storage - Part 9: Special cases".

The following minimal editorial changes have been made to this document.

--- "Examples of temperature storage environments are shown in Table 1" should be corrected to "Table 1 shows the failure mechanisms and failure stimuli of memory devices".

As shown in 5.2.

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 describes the current best practices for long-term storage. Long-term storage refers to the expected storage time of electronic components exceeding 12 months.

Monthly storage.

Long-term storage requires proper execution of storage procedures, especially the storage environment. The purpose of this document is to provide guidelines for the long-term storage of electronic components.

Guidance. This document proposes a method to delay obsolescence to the greatest extent possible, but it cannot guarantee that components will be in good condition after storage.

Work status.

GB/T 42706, "Electronic Components and Semiconductor Devices - Long-Term Storage," aims to ensure that components have sufficient energy reserves for use after long-term storage.

Reliability. Users are encouraged to request technical specifications from suppliers for relevant products to demonstrate that the storage process meets their needs. These standards the aim is to provide relevant guidance for electronic components that require long-term storage.

GB/T 42706 is divided into 9 parts. Parts 1 through 4 apply to all long-term storage and include general requirements and specifications.

Guidelines. Parts 5 through 9 apply to the storage of several specific product types. This is in accordance with the general requirements of Parts 1 through 4.

In addition, specific product type requirements must be met. Starting from Part 5, electronic components requiring different storage conditions are covered.

GB/T 42706 is proposed to consist of 9 parts.

---Part 1: General Provisions. The purpose is to define the relevant terms, definitions, and principles for long-term storage, and to provide effective methods for long-term storage of electronic components.

Storage concepts, good work habits, and general methods.

---Part 2: Degradation Mechanisms. The aim is to define the degradation mechanisms of electronic components over time under actual storage conditions and...

Degradation patterns and guidelines for testing methods to assess general degradation mechanisms.

---Part 3: Data. The purpose is to specify the requirements for data storage during the long-term storage of electronic components, ensuring traceability.

Traceability or data chain integrity.

---Part 4: Storage. This section describes methods for long-term storage of electronic components and related recommended conditions, including transportation and control.

Safety of manufacturing and storage facilities.

---Part 5: Chips and Wafers. The purpose is to specify individual chips, portions of wafers, or entire wafers, as well as those with metal structures (introduced).

Storage conditions and rules for chips (metal layers, ball bearings, pillar bearings, etc.), and also for general-purpose and special-purpose packaging products containing chips or wafers.

Provide operating instructions.

---Part 6: Packaged or Coated Components. The purpose is to specify the methods and recommended conditions for long-term storage of packaged or coated components.

This includes the safety of transportation, control, and storage facilities.

---Part 7: Microelectromechanical Devices. The purpose is to specify the precautions and basic requirements for long-term storage of microelectromechanical devices.

This requirement.

---Part 8: Passive Electronic Devices. The purpose is to specify the precautions and basic requirements for long-term storage of passive electronic devices.

This requirement.

---Part 9: Special Cases. This section aims to specify storage methods for special types of products and when the storage environment changes, providing users with [specific guidelines/methods].

Guidelines and requirements for interacting with suppliers help manage the complexities involved.

Long-term storage of electronic components and semiconductor devices Part 9: Special Cases

1 Scope

This document specifies storage methods under special circumstances where the product contains various types of silicon in the form of packages or circuit boards.

Devices and semiconductor devices, stored in either complete assembly units or sub-assemblies. This document also applies to heterogeneous devices, but special notes are required.

This refers to memory components or integrated forms. This document provides guidelines and requirements for user and vendor interactions to address the complexity of such scenarios.

Mixed nature.

Note: In IEC 62435 (all parts), the term "component" is used interchangeably with die, wafer, passive device and packaged device.

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.