

ICS 31.020
CCS L 55



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

GB/T 42706.6-2025

**Electronic components - Long-term storage of electronic
semiconductor devices - Part 6: Package or finished devices**

电子元器件 半导体器件长期贮存 第6部分：封装或涂覆元器件

(English Translation)

Issued on: October 31, 2025

Implemented on: May 1, 2026

Issued by: State Administration for Market Regulation

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

The following section.

---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.

This document is equivalent to IEC 62435-6:2018 "Electronic components, semiconductor devices - Long-term storage - Part 6: Packages or coatings" Devices.

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

---Footnote b in Table 2 has been deleted. This footnote referenced the Institute of Refrigeration and Air-Conditioning Engineers' classification of temperature levels as "Climate Control Levels".

"A3 and temperature rating C" are not applicable because the association's standards are difficult to obtain, and Table 2 clearly defines the temperature range as "5°C/".

"40°C", delete footnote b without changing the technical content;

---In section 5.3.7.1, JEDEC J-STD-020 does not have any requirements regarding labels, so the reference to it has been removed.

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.

In recent years, the obsolescence of electronic components, especially integrated circuits, has become increasingly serious. With the development of technology, the obsolescence of these components, particularly those used in aviation, railways, and energy...

Compared to industrial equipment in the energy field, electronic components have a very short lifespan. Therefore, systematically storing electronic components is a solution to the problem of obsolescence.

Main methods.

Long-term storage requires strict adherence to storage procedures, especially regarding the storage environment. It is recommended that all transportation and maintenance procedures be carried out in accordance with the latest technological advancements.

Protection, storage and testing operations.

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

In operation.

Because some systems have been in use for a very long time, sometimes up to 40 years or more, how to maintain them and obtain spare parts has become a key issue.

This addresses the problems that users and repair organizations need to solve. For example, some components required to repair these systems cannot be replaced during the system's lifespan.

Spare parts obtained from the original supplier, or those used for assembly, are produced early in the manufacturing process but require long-term storage. This document...

The purpose is to provide a standard for the long-term storage of components.

The GB/T 42706 series of standards, "Electronic Components and Semiconductor Devices - Long-Term Storage," aims to ensure the long-term storage performance of electronic components during use.

Sufficient reliability is ensured. Users are encouraged to request technical specifications from suppliers for relevant products to demonstrate that the storage process meets their needs.

These standards are designed to provide guidance for electronic components that require long-term storage.

Parts 1 through 4 apply to all long-term storage and contain general requirements and guidance. Parts 5 through 9 apply.

Storage for several specific product types. While meeting the general requirements of Parts 1 through 4, it also meets the requirements for specific product types.

Require.

Starting from Part 5, we will cover electronic components that require different storage conditions.

The GB/T 42706 series of standards is proposed to consist of nine 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.

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 MEMS.

---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. The purpose is to specify storage methods for special devices, including all types of silicon devices and semiconductors.

Device.

Long-term storage of electronic components and semiconductor devices Part 6:
Encapsulated or Coated Components