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

**GB/T 19444-2025**

Replacing GB/T 19444-2004

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**Test method for oxygen precipitation characteristics of silicon  
wafers - Interstitial oxygen reduction**

硅片氧沉淀特性的测试 间隙氧含量减少法

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### Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 19444-2004 "Determination of oxygen precipitation characteristics of silicon wafers - Interstitial oxygen content reduction method" and GB/T 19444- Compared with 2004, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope of application has been changed (see Chapter 1, Chapter 1 of the 2004 edition);
- b) Added terms and definitions (see Chapter 3);
- c) The principle of the method has been changed (see Chapter 4, Chapter 3 of the 2004 edition);
- d) Increased interference factors (see Chapter 5);
- e) Added test conditions (see Chapter 6);
- f) The reagents or materials have been changed (see Chapter 7, Chapter 5 of the 2004 edition);
- g) Added instruments and equipment (see Chapter 8);
- h) The sample has been changed (see Chapter 9, Chapter 6 of the 2004 edition);
- i) The test steps have been changed (see Chapter 10, Chapter 7 of the 2004 edition);

- j) Added test data processing (see Chapter 11);
- k) The precision has been changed (see Chapter 12, Chapter 10 of the 2004 edition);
- l) The test report has been changed (see Chapter 13, Chapter 9 of the 2004 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was jointly issued by the National Technical Committee on Semiconductor Equipment and Materials Standardization (SAC/TC203) and the National Technical Committee on Semiconductor Equipment and Materials Standardization (SAC/TC203).

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This document was first published in 2004 and this is the first revision.

Testing of silicon wafer oxygen precipitation characteristics Interstitial oxygen content reduction method

## 1 Scope

This document describes a method for testing the oxygen precipitation characteristics of silicon wafers by measuring the reduction in interstitial oxygen content before and after thermal treatment of the wafers.

This document applies to n-type silicon single crystals with room temperature resistivity greater than 0.1ohm-cm and p-type silicon with room temperature resistivity greater than 0.5ohm-cm Testing of oxygen precipitation characteristics of single wafers.

## 2 Normative references

GB/T 1557-2018

GB/T 6682

GB/T 14264

### 3 Terms and Definitions

The terms and definitions defined in GB/T 14264 and the following apply to this document.

#### 3.1 oxygen precipitation

During the crystal growth and subsequent heat treatment stages, oxygen atoms between the lattices react with silicon and other impurities in the silicon crystal to form oxygen deposits. Accumulation of things.

#### 3.2 Initial oxygen content initialoxygencontent

Interstitial oxygen content of silicon single wafer without heat treatment process.

#### 3.3 Final oxygen content finaloxygencontent

Interstitial oxygen content of silicon single wafer after heat treatment process.

#### 3.4

The difference between the initial oxygen content and the final oxygen content.

### 4 Principles

The sample was heat treated and the interstitial oxygen content of the sample before and after heat treatment was tested by infrared absorption method. The difference was regarded as The amount of interstitial oxygen precipitation is used to characterize the oxygen precipitation characteristics of the sample.