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

GB/T 6619-2009

Replacing GB/T 6619-1995

Test methods for bow of silicon wafers

硅片弯曲度测试方法

(English Translation)

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Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms
4 Method summary
5 Disturbances

Foreword

This revised standard adopts SEMIMF534-0706 "wafer curvature testing methods." this standard compared with SEMIMF534-0706, the main changes are as follows.

- The standard format of press-contact measurement method GB/T 1.1 formatting;
- This standard increases the non-contact measuring method according to China's actual production situation.

This standard replaces GB/T 6619-1995 "wafer curvature testing methods." this standard compared with GB/T 6619-1995, the main changes are as follows.

- Expanding the measurable range of wafer diameter not less than 25mm, a thickness of not less than 180 μ m, diameter and thickness ratio of not more than 250 circular silicon wafer;
- Increasing the reference documents, terminology, meaning use, measuring environmental conditions and interference factors section;
- Revised instrument calibration content.

The standard equipment by the National Standardization Technical Committee and the semiconductor material (SAC/TC203) proposed.

This standard by the National Standardization Technical Committee materials and equipment at the Technical Committee of semiconductor material.

This standard was drafted. Luoyang monocrystalline silicon limited liability company.

1 Scope

This standard specifies the silicon single crystal cutting, grinding film, polished (hereinafter referred to as silicon) contact measuring method curvature.

This standard applies to measuring the diameter of not less than 25mm, a thickness of not less than 180 μ m, diameter and thickness ratio of not more than 250 circular Curvature of the silicon wafer. The purpose of this test method is used for incoming inspection and process control. This standard is also applicable to other semiconductor wafer measurement Curvature.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 2828.1 Sampling procedures for inspection - Part 1. by acceptance quality limit (AQL) retrieval batch inspection sampling plan (GB/T 2828.1-2003, ISO 2859-1:1999, IDT) GB/T 14264 semiconductor material terms

3 Terms

GB/T 14264 and specified the following terms and definitions apply to this standard.

The front surface of the semiconductor wafer, in the above has been manufactured or exposed surface of the semiconductor device fabrication.

Deflected without holding the wafer in planes and in the center of the reference plane between the planes. The planes designated by the reference plane is smaller than the crystal Flat sheet nominal diameter of three equidistant points on the circumference of the diameter of the decision.

Positive and back surfaces of the wafer track equidistant points.

4 Method summary

The wafer is placed on the base ring 3 pivot, pivot 3 formed a datum plane, measuring wafer center biasing low pressure shift indicator Distance from the reference plane, flip wafers, repeat the measurement. Half the difference between the two measurements says that the curvature of the wafer.

5 Disturbances

5.1

test method is to measure the degree of curvature based on a limited number of points, the rest of the wafer geometry changes may not be detected.

5.2

strut thickness variation of silicon contact region or the central region can lead to erroneous measurement results, such a thickness change is caused by debris, James Dirt and wafer surface defects such as. hill, pit, cutting steps, etc., causing ripples.

5.3

If the median plane bending is not always in the same direction, with the degree of bending deformation can not fully represent the median plane, the present method for the determination the value may not represent the median plane with the reference plane deviation.