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

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**Semiconductor devices - Integrated circuits - Part 20: Generic
specification for film integrated circuits and hybrid film integrated
circuits - Section 1: Requirements for internal visual examination**

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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 20-1 of "Semiconductor Devices Integrated Circuits", a series that has released the following parts.

- Part 1. General provisions;
- Part 2. Digital integrated circuits;
- Part 3. Analog integrated circuits;
- Part 5. Semi-custom integrated circuits;
- Part 11. Specifications for semiconductor integrated circuits (excluding hybrid circuits);
- Part 20. General specifications for film integrated circuits and hybrid film integrated circuits;
- Part 21. Sub-Specifications for Film Integrated Circuits and Hybrid Film Integrated Circuits (using identification and approval procedures);
- Part 22. Sub-Specifications for Film Integrated Circuits and Hybrid Film Integrated Circuits (Adopting Capability Approval Process);

This document is equivalent to IEC 60748-20-1.1994 "Semiconductor Devices Integrated Circuits Part 20. Film Integrated Circuits and Hybrid Film

General Specification for Integrated Circuits Part 1. Internal Visual Inspection Requirements.

This document adds a chapter "Normative References". Adjust "1.6 Definitions" to "3 Terms and Definitions".

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

Semiconductor devices are common basic products in the electronics industry chain and are the most basic units in electronic systems. "Semiconductor Devices Collection"

"Integrated circuit" is a basic and universal standard for semiconductor devices, which plays an important role in evaluating and assessing the quality and reliability of semiconductor device integrated circuits.

It plays an important role and is planned to be composed of 10 parts.

---Part 1.General principles. The purpose is to specify general guidelines for film integrated circuits and hybrid film integrated circuits.

---Part 2.Digital integrated circuits. The purpose is to give standards for subclasses of digital integrated circuits.

---Part 3.Analog integrated circuits. The purpose is to give standards for subclasses of analog integrated circuits.

---Part 4.Interface integrated circuits. The purpose is to give standards for subclasses of interfacing integrated circuits.

---Part 5.Semi-custom integrated circuits. The purpose is to provide standards for subclasses of semi-custom integrated circuits.

---Part 11.Specifications for semiconductor integrated circuits (excluding hybrid circuits). The purpose is to specify packaged semiconductor integrated circuits

Quality assessment procedures, inspection requirements, screening sequences, sampling requirements, testing and measurement procedures.

---Part 20.General specifications for film integrated circuits and hybrid film integrated circuits. The purpose is to specify film integrated circuits and hybrid film integrated circuits

Road terminology, basic ratings, characteristics, and test methods.

---Part 21.Specifications for film integrated circuits and hybrid film integrated circuits (using the identification and approval process). The purpose is to provide ratings and characteristics

Provide priority values for performance, select appropriate test and measurement methods from the general specification, and give film integrated circuits developed in accordance with this standard.

Detailed specification of general performance requirements for circuit and hybrid film integrated circuits.

---Part 22.Sub-Specifications for Film Integrated Circuits and Hybrid Film Integrated Circuits (Adopting Capability Approval Process). The purpose is to provide optimal

First, select appropriate test and measurement methods from the general specification, and give film integrated circuits and hybrids developed in accordance with this part.

General performance requirements for use in membrane integrated circuit detailed specifications.

---Part 23.Hybrid integrated circuits and membrane structures. The purpose is to specify general guidelines for hybrid integrated circuits and membrane structures.

Equivalent to the IEC 60748-20-1 series, ensuring that semiconductor device testing

methods are consistent with international standards and achieving semiconductor device inspection

Methods, reliability evaluation, and quality levels are in line with international standards. Through the formulation of this series of standards, unified test methods and stresses are determined to evaluate semiconductor

The environmental adaptability of semiconductor devices is of great significance to the research, production, inspection and use of semiconductor devices, and it also supplements and improves semiconductor devices.

The standard system plays a guiding role in the development of the semiconductor device industry.

Semiconductor devices integrated circuits part 20.

General specification for film integrated circuits and hybrid film integrated circuits

Part One. Internal Visual Inspection Requirements

1.1 Purpose

The purpose of this document is to examine the internal materials, Structure and manufacturing process.

This inspection is usually performed before capping or packaging to find and eliminate devices with internal defects. This defect will cause the device

Ineffective in normal applications. Other acceptance criteria should be agreed with the purchaser or supplier.

1.2 Check sequence

When conducting internal visual inspection, it is not required to follow the order used in this test and can be adjusted according to the requirements of the contractor. possible due to subsequent assembly

Wherever you can see it, inspect it before assembling it.

1.3 Check the equipment

The equipment used in this test includes optical instruments with specified magnification and some auxiliary visual inspection standards or instruments (such as rulers, charts paper, photographs, etc.), these devices are required for effective inspection and enable the operator to make an objective judgment on the acceptability of the device being inspected.

Provide appropriate fixtures during the inspection process to facilitate operation, improve