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

GB/T 20870.4-2024

**Semiconductor devices - Part 16-4: Microwave integrated
circuits - Switches**

半导体器件 第16-4部分：微波集成电路 开关

(English Translation)

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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 is Part 4 of GB/T 20870 "Semiconductor devices". GB/T 20870 has published the following parts.

- Part 16-1.Microwave integrated circuit amplifiers;
- Part 16-2.Microwave integrated circuit prescalers;
- Part 16-4.Microwave integrated circuit switches;
- Part 16-5.Microwave integrated circuit oscillators;
- Part 16-10.Acceptable procedures for monolithic microwave integrated circuit technology.

This document is equivalent to IEC 60747-16-4:2017 "Semiconductor devices - Part 16-4.Microwave integrated circuit switches".

For ease of use, the following minimal editorial changes have been made to this document.

- Corrected the figure numbers in the document and added figure introductions.

Introduction

Microwave integrated circuits are common basic products in the electronics industry chain and are the most basic units in electronic systems. GB/T 20870 "Semiconductor Device Microwave Integrated Circuits" is the basis for establishing parameters and test methods for microwave integrated circuits. It is intended to consist of 10 parts.

- Part 16-1.Microwave integrated circuit amplifiers. The purpose is to specify the terminology, basic ratings, and Values, characteristics, and test methods.
- Part 16-2.Microwave integrated circuit prescaler. The purpose is to define the terms and letters of microwave integrated circuit prescaler Symbols, basic ratings, characteristics, and test methods.
- Part 16-3.Microwave integrated circuit frequency converters. The purpose is to specify the terminology, basic ratings, and Values, characteristics, and test methods.
- Part 16-4.Microwave integrated circuit switches. The purpose is to specify the terminology, basic ratings, characteristics, properties and test methods.
- Part 16-5.Microwave integrated circuit oscillators. The purpose is to specify the terminology, basic ratings and Values, characteristics, and test methods.
- Part 16-6.Microwave integrated circuit frequency multipliers. The purpose is to specify the terminology, basic ratings and Values, characteristics, and test methods.
- Part 16-7.Microwave integrated circuit attenuators. The purpose is to specify the terminology, basic ratings, and Values, characteristics, and test methods.
- Part 16-8.Microwave integrated circuit limiters. The purpose is to specify the terminology, basic ratings, and Values, characteristics, and test methods.
- Part 16-9.Microwave integrated circuit phase shifters. The purpose is to specify the

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

--- Part 16-10. Monolithic microwave integrated circuit technology acceptance procedures. The purpose is to specify the design, Terms, definitions, symbols, quality systems, testing, evaluation, verification methods and other requirements for manufacturing and delivery.

This series of standards is equivalent to the IEC 60747-16 series of standards, ensuring that the semiconductor device test methods are consistent with international standards.

The establishment of this standard can determine unified test parameters, test methods and test procedures, which will have a great impact on the development, production, inspection and use of microwave integrated circuits.

It is of great significance.

semiconductor devices Part 16-4. Microwave integrated circuit switches

1 Scope

This document defines terms and definitions, specifies ratings and characteristics, and describes test methods for microwave integrated circuit switches.

The RF ports of the switch have various combinations, such as single-pole single-throw (SPST), single-pole double-throw (SPDT), single-pole three-throw (SP3T), double-pole double-throw (DPDT), and single-pole single-throw (SPST).

(DPDT), etc. This document is based on SPDT type switches, and other types of switches are also applicable.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

Created devices-Part 1: General) IEC 60747-1:2006/AMD1.2010 Note. GB/T 20516-2006 Semiconductor devices Discrete devices Part 4: Microwave devices (IEC 60747-4:2001, IDT) IEC 60747-16-1:2001/AMD1.2007 IEC 60747-16-1:2001/AMD2.2017 Note. GB/T 20870.1-2007 Semiconductor devices Part 16-1. Microwave integrated circuit amplifiers (IEC 60747-16-1:2001, IDT) Note. GB/T 17574-1998 Semiconductor device integrated circuits Part 2: Digital integrated circuits (idt IEC 748-2.1985) Note. GB/T 17940-2000 Semiconductor device integrated circuits Part 3: Analog integrated circuits (idt IEC 748-3.1986) Note. GB/T 18500-2001 Semiconductor device integrated circuits Part 4: Interface integrated circuits (IEC 60748-4:1993, IDT) IEC 61340-5-1:2016 Electrostatics

Part 5-1.General requirements for protection of electronic equipment against electrostatic phenomena ments) Note. GB/T 37977.51-2023 Electrostatics Part 5-1.General requirements for electrostatic protection of electronic devices (IEC 61340-5-1:2016, IDT) IEC TR61340-5-2:2018 Electrostatics Part 5-2.Protection of electronic equipment against electrostatic phenomena User's guide