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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 15879.5-2018

Replacing GB/T 15879-1995

Mechanical standardization of semiconductor devices -- Part 5: Recommendations applying to tape automated bonding (TAB) of integrated circuits

Issued on: September 17, 2018 **Implemented on: April 1, 2019**

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Foreword

The Mechanical Standardization of Semiconductor Devices has been or is planned to be released as follows.

--- Part 1. General rules for drawing outlines of discrete device packages;

--- Part 2. Size;

--- Part 3. General rules for the drawing of outline drawings of integrated circuits;

--- Part 4. Classification and coding system for the outline of semiconductor device packages;

---Part 5. Recommended values for automated tape carrier integrated soldering (TAB);

--- Part 6. General rules for drawing outlines of surface mount semiconductor device packages.

This part is the fifth part of "Mechanical Standardization of Semiconductor Devices".

This part uses the translation method equivalent to IEC 60191-5.1997 "Mechanical standardization of semiconductor devices Part 5. Using carrier tapes

Recommended values for integrated circuit packages for dynamic soldering (TAB).

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 15879-1995 "Mechanical standardization of semiconductor devices - Part 5.

(TAB) recommended value. Compared with GB/T 15879-1995, the main technical changes are as follows.

--- Increase in the scope "This section applies to the finished unit of the manufacturer to supply the user, the interconnection of the integrated circuit (IC) to the frame (introduction

Wire welding) is not explicitly required" (see Chapter 1);

---Remove the terms of guide hole, inner lead soldering, outer lead soldering, isolation strip, lead, sliding carrier, cutting, lead forming, etc.

Wheel holes, inner leads, outer leads or cut windows, support rings, body dimensions, outer leads, alignment holes, test pads, etc. (see

Chapter 2, version 2.2 of the.1995 edition;

---The carrier tape width is changed from "8mm, 16mm, 19mm, 35mm" (see 3.1 in GB/T 15879-1995) to "35mm,

48mm and 70mm" (see 4.1, 3.1 of the.1995 edition);

--- Increase the size and tolerances associated with film specifications, alignment holes, body dimensions and tolerances, pad patterns related dimensions and tolerances, external references

Line pitch related dimensions and tolerances, maximum number of lead combinations (see Chapter 4);

--- Increase the variable combination code (see Chapter 5);

--- Increase the internal and external lead welding requirements (see Chapter 6);

--- Increase the recommended value of ultra-large TAB package, wide body TAB package recommended value, outer lead number, test pad number (see this section)

Appendix A, Appendix B, Appendix C, Appendix D).

This section has the following editorial changes.

---Modified standard name;

--- Modified the error in the header of Table 2, the body size identification letters from A, B, C, D, F, G, H, J, K, corrected to A, B, C,

D, E, F, G, H, J, K;

--- Modified the error in the header of Table 5, the number of test pads in the header of

Table 5 are all M1, according to the film specifications, test pad pitch

The difference is M1, M2, M3, M4;

---Modify the error in Table A.1, correct the outer lead pitch of BB-26 from 0.4mm to 0.15mm, and BB-36 from 0.4mm.

Positive 0.15mm, BD-46 is corrected from 0.16mm to 0.15mm;

--- Appendix B removes the completely repeated EH-46, and the wrong size EJ-46 of the body size (40mm x 40mm).

This part was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This part is under the jurisdiction of the National Semiconductor Device Standardization Technical Committee (SAC/TC78).

This section drafted by. China Electronics Technology Standardization Institute, China Electronics Technology Group Corporation, 58th Institute, Sichuan Jiejie

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1 Scope

This part of the "Mechanical Standardization of Semiconductor Devices" specifies the use of tape automated bonding (TAB) as the main component of the structure and interconnection.

Recommended values for integrated circuit packages.

This section applies to the finished unit supplied by the manufacturer to the user. The interconnection of the integrated circuit (IC) to the carrier tape (internal lead soldering) is not clear.

Claim.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1

Chip (or die) chip(ordie)

At least one integrated circuit is included from a silicon wafer containing an array of devices.

2.2

Tape carrier tapecarrier(tape)

A strip of mechanical support and electrical connection of the chip formed by laminating an insulating material and a conductive material having a certain pattern. Strip pack

Contains a series of graphics, each of which is a unit of the strip.

Note. When there is no confusion, the "band carrier" can be abbreviated as "carrier tape".

2.3

Chain gear hole sprockethole

The carrier carries a row of side holes on each side, through which the device transports the carrier tape, or for coarse adjustment of the carrier tape position.

2.4

Lead pattern leadpattern

After etching, the carrier tape has conductive material patterns including inner and outer leads and test pads.

2.5

Inner lead innerlead

The innermost conductor of the lead pattern connected to the chip.

2.6

Device window

Located in the center of the carrier unit, the chip and inner leads are placed in the holes.

2.7

Outer lead or cut window outerleadorexcisewindow

Each side of the carrier unit is suspended from a rectangular hole above the conductor pattern. These holes will form a continuous opening around each unit of the carrier tape.

mouth. The bonded circuit is typically cut away from the carrier tape in the opening.

2.8

Support ring

An insulating film that supports the conductor pattern between the device window and the outer lead window.

2.9

Body size bodysize

The outer dimensions of the support ring.