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

GB/T 15878-2015

Replacing GB/T 15878-1995

**Semiconductor integrated circuits - Specification of leadframes
for small outline package**

半导体集成电路 小外形封装引线框架规范

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard replaces GB/T 15878-1995 "small outline package leadframe norms." This standard and GB/T 15878-1995 compared to the main changes are as follows:

--- According to the standard range, the standard name of the original standard was revised to "small outline integrated circuit semiconductor package leadframe specification";

--- About Normative references. increase the introductory phrase; sampling standards set by GB/T 2828.1-2012 instead of SJ/Z9007-87; increase Plus references GB/T 2423.60-2008, SJ20129;

4.1 standard from "Design" to "lead frame size", about the content of the original standard fine tune the depth and metal gap Rounded to 4.2, and the original standard "fine nip" of the contents are incorporated into the "coining depth" articles;

--- Of the standard "

4.2 leadframe shape and position tolerances" in the corresponding provisions of the order have been adjusted, and increases the chip bonding area Subsidence and the relevant

requirements of the lead frame inside position tolerances;

--- Revised standard for "scoliosis" requirements (see 4.2.1). the original standard specifies only 150mm in length direction, does not exceed Over 0.5mm, this standard over the entire length of the predetermined nominal;

--- Revised standard on the "curl" requirements (see 4.2.2). the original standard specifies only texturized less than 0.5mm, the root of this standard According to the thickness of the material were carried out provision;

--- Modify the requirements of the standard "twisted strip" (see 4.2.4). the original standard specifies only twist on every frame does not exceed 0.51mm, this standard will be revised to frame twist twisted strips, and were based on a predetermined thickness of the material;

--- Revised standard on the "twisted wire" requirements (see 4.2.5). the original standard specifies the lead angle and twisted lead width The maximum offset this standard removed the lead predetermined maximum width offset;

--- Original standard does not consider the effect of depth on the coining coining width simply specifies the size range coining depth. The revised standard It is. to ensure the coining width not less than 90% lead width conditions, the coining depth of no more than 30% of the material thickness, and its reference Value 0.015mm ~ 0.06mm (see 4.2.6);

--- The "metal gap" to "insulation gap" and revised the standard for "insulating gap" requirements (see 4.2.7). The original standard gauge Set "between the respective inner leads of the lead frame, the chip and the distance between the inner lead bonding area is not less than

0.152 mm", this modified standard To "nip spacing and fine finishing two adjacent nip between the endpoints and the endpoint chip bonding interval interval is greater than 0.076mm";

--- Revised standard on the "die attach area slope" requirements (see 4.2.9). the original standard were provided for in the fight and did not play the concave recess Maximum slope member under the provisions of the standard uniform for the maximum inclination in the length or width of each size 2.54mm 0.05mm;

1 Scope

GB/T 15878-2015 is the Chinese national standard on semiconductor integrated circuits - specification of leadframes for small outline package, in the field of electronics. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 15 May 2015 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 January

2016. Classification: ICS 31.200, CCS L56. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the semiconductor integrated circuit small outline package (SOP) of the lead frame (hereinafter referred to as the lead frame) of technical requirements and test rule. This standard is applicable to a semiconductor integrated circuit small outline package stamped leadframe.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 2423.60-2008 Environmental testing for electric and electronic products Part 2. Test methods - Test U. Robustness of terminations and integral security Attachments strength

GB/T 2828.1-2012 Sampling procedures for inspection - Part 1. by acceptance quality limit (AQL) retrieval batch test sample plan

GB/T 7092 semiconductor integrated circuit Dimensions

GB/T 14112-2015 semiconductor integrated circuit packaging plastic dual-stamped leadframe specification

GB/T 14113 semiconductor integrated circuit package terminology SJ20129 metal plating layer thickness measurement method

3 Terms and Definitions

Terms and definitions GB/T 14112-2015 and GB/T 14113 apply as defined in this document. 4. Technical Requirements

4.1 leadframe size Lead frame dimensions should be consistent with the relevant provisions of GB/T 7092, and to comply with the lead frame design.

4.2 leadframe shape and position tolerances

4.2.1 scoliosis Scoliosis over the entire length of no more than a nominal 0.05mm.

4.2.2 curl When the thickness of the material is not more than 0.152mm, crimped

2.5 times the material thickness; when the thickness of the material is greater than 0.152mm, the crimp material 2 times the thickness.