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

GB/T 15876-2015

Replacing GB/T 15876-1995

**Semiconductor integrated circuits - Specification of leadframes
for plastic quad flat package**

半导体集成电路 塑料四面引线扁平封装引线框架规范

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Table of Contents

1 Scope	1
2 Normative references	1
4.2 leadframe shape and position tolerances of	1
4.3 appearance of the lead frame	3
4.4 leadframe plating	3
4.5 intensity of the lead frame outer leads	3
4.6 copper peel test	3
4.7 silver peel test	3
5.1 Inspection Lot	4
5.2 Qualification approval procedures	4
5.3 Quality conformance inspection 4	6
7 Ordering Information 7 signs, packaging, transportation and storage	7
7.1 logo and packaging	7
7 Appendix A (normative) mechanical measuring lead frame	8

Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard replaces GB/T 15876-1995 "surrounded by plastic lead frame lead flat package specification." This standard and GB/T 15876-1995 compared to the main changes are as follows:

--- According to the standard range, the standard name of the original standard was revised to "lead a semiconductor integrated circuit is surrounded by a plastic flat package Leadframe norms";

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

4.1 standard from "Design" to "lead frame size", and the original standard wire bonding zone width, the depth and precision metal Related Content gap was adjusted to 4.2;

--- 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 related

requirements;

--- Revised standard on the "curl" requirements (see 4.2.2). the original standard specifies only texturized less than 0.51mm, this standard Carried out according to a predetermined thickness of the material, respectively;

--- Revised standard on the "horizontal bend" requirements (see 4.2.3). the original standard specifies only the number of leads 52 ~ 100, 132 ~ 164, 196 ~ 244 within three horizontal bend value range, expanding the scope of this standard covers the number of leads;

--- Revised standard on the "strip twisted" requirements (see 4.2.4). the original standard only provides a framework twist of not more than 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;

--- Revised standard on the "depth coined" requirements (see 4.2.6). Standard on original coining coining width to depth is not considered, Jane Single predetermined size range coining depth. This standard is revised as follows: ensuring the coining width not less than 90% lead width of the strip Under parts, coining depth of no more than 30% of the thickness of the material, its reference value 0.015mm ~ 0.06mm;

--- The "metal gap" to "insulation gap" and revised the standard for "insulating gap" requirements (see 4.2.7). The original standard gauge Given "the gap between metals shall be subject to the limits for metals clearance on each side projecting pressure does not exceed the maximum fine 0.051mm", this standard Quasi changed to "nip spacing interval and the fine end of the chip bonding interval between two adjacent fine nip between the endpoints is greater than 0.076mm";

--- Revised standard on the "coining lead terminal coplanarity" requirements (see 4.2.8). the tolerance range specified in the standard as the original $\pm 0.15\text{mm}$, $\pm 0.2\text{mm}$, this standard taking into account the limiting case of a negative difference to -0.1mm ;

--- 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 15876-2015 is the Chinese national standard on semiconductor integrated circuits - specification of leadframes for plastic quad flat 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 is surrounded by a plastic lead frame lead flat package (hereinafter referred to as the lead frame) and the technical requirements Inspection rules. This standard applies to the semiconductor integrated circuit is surrounded by a plastic lead flat package stamped leadframe. Four lead plastic flat package engraved Erosion can also refer to the use of the lead frame.

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 Size

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

4.2 leadframe shape and position tolerances

4.2.1 scoliosis Scoliosis over the entire length of no more than a nominal 0.05mm, test method according to GB/T 14112-2015 Appendix A of.

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 of the test method according to GB/T 14112-2015 provisions of Appendix A of.

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