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

GB/T 32817-2016

**Semiconductor devices -- Micro-electromechanical devices --
Generic specification for MEMS**

半导体器件 微机电器件 MEMS总规范

(English Translation)

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Foreword

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

This standard uses the re-drafting method to modify the use of international standards IEC 62047-4.:2008 "Semiconductor Devices Microelectromechanical Devices Part 4 Points. MEMS general specification".

Compared with IEC 62047-4.:2008, the main technical changes are as follows.

- Removal of IEC 62047-4.:2008 "Microelectromechanical devices for semiconductor devices Part 4. General specification for MEMS" Chapter 1 "1MEMS classification and

terminology ", the classification and the current national standard GB/T 26111" micro-electromechanical system (MEMS) technology the term "is not completely uniform;

--- Change the name and corresponding section of IEC QC001002-3.:2005 to IEC Q03-3.:2013. IEC QC001002-3.

2005 has been discontinued and replaced by IEC Q03-3.:2013;

- "Submitted to NSI as required" in 6.3.1 to "Request to the relevant authorities as required" because NSI is an American institution;

--- delete the B.3.1 in the AS, this abbreviation easily lead to ambiguity;

- Adaptation of IEC 62047-1, "Semiconductor Devices Microelectromechanical Devices Part 1. Terminology and Definitions", in the normative reference document GB/T 26111 "Microelectromechanical System (MEMS) technical terminology" to ensure that this standard with the existing national standards in harmony;

On the normative reference documents, this standard has made a technical differences in the adjustment to meet China's technical conditions, adjust the situation set is reflected in Chapter 2, "normative reference documents", the specific adjustments are as follows.

- Replace the IEC 60068-2 (all parts) with GB/T 2423, see Appendix C for the degree of consistency between the standard parts;

- Replace the IEC 60068-2 (all parts) with GB/T 2424, see Appendix C for the degree of consistency between the standard parts;

- GB/T 4937 (all parts) In place of IEC 60749 (all parts), see Appendix C for the degree of consistency between the various parts of the standard.

For ease of use, this standard has been modified as follows.

--- Added 6.1, Chapter 6 other terms postponed;

--- to the international standard A.1.1 to A.2, the suspension section to extract the title as A.2.1, other chapter number extension;

--- B.3.1 and B.3.2 swap position;

- Change the standard name to "General specification for microelectromechanical devices for semiconductor devices".

This standard by the National Microelectromechanical Technology Standardization Technical Committee (SAC/TC336) proposed and centralized.

The main drafting unit of this standard. China Machine Productivity Promotion Center, China Electronics Technology Group Corporation Thirteenth Research Institute, North University, Nanjing Polytechnic University, Dalian University of Technology.

1 Scope

This standard describes the general specification for microelectromechanical systems (MEMS) manufactured by semiconductors, which specifies the quality of the IEC Q-CECC system the general rules of assessment give the general description of the electrical, optical, mechanical and environmental characteristics of the description and testing.

This standard applies to all types of MEMS devices [such as sensors, RF MEMS, but does not include optical MEMS, bio-MEMS, micro-(Micro-TAS) and micro-energy MEMS.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 2423 Environmental testing for electric and electronic products - Part 2 [IEC 60068-2 (all parts)] GB/T 2424 Environmental tests [IEC 60068-2 (all parts)] GB/T 2828.1 Sampling inspection procedures Part 1. Batch inspection sampling plan for retrieval by quality limit (AQL) (GB/T 2828.1-2012, ISO 2859-1, IDT) GB 3100 International System of Units and Applications (GB 3100-1993, eqvISO 1000) GB/T 4728 (all parts) Electrical diagrams Graphical symbols (IEC 60617, IDT) GB/T 4937 (all parts) Semiconductor devices Mechanical and climatic test methods [IEC 60749 (all parts)] GB/T 26111 terminology for microelectromechanical systems (MEMS) IEC 60027 (all parts) Electronic technology characters (Lettersymbolstobeusedinelectricaltechnology) IEC 60747-1.:2006 Semiconductor devices Part 1. General (Semiconductordevices-Part 1. General) IEC 61193-2 Quality assessment system - Part 2. Selection of sampling schemes for electronic components and packaging inspection assessmentsystems-Part 2. Selection and use of sampling plansforinspection ofelectronic componentsandpackages IEC Q03-3.:2013 IEC Electronic Components Quality Assessment System (IEC Q System) Rules of Procedure Part 3. Approval procedures, Related Materials and Components Planning [IEC QualityAssessmentSystemforElectronicComponents (IEC QSystem) -RulesofProcedure-Part 3. IEC QApprovedComponentProducts, RelatedMaterials Scheme]

3 Terms and definitions

The terms, units, figures and symbols defined in GB/T 26111, GB 3100 and IEC 60027 apply to this document.

Other specific terms, units and symbols referred to in this document shall be consistent with the relevant documents referred to in Chapter 2 or, in accordance with the above in the form of the provisions of the derived.

4 Standard environment

The standard environment of parameter test, test and working condition is. temperature $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$, relative humidity 25% ~ 85%, pressure 86kPa ~