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GB/T 2423.35-2019 / IEC 60068-2-53:2010

Replacing GB/T 2423.35-2005, GB/T 2423.36-2005, GB/T 2424.22-1986

Environmental Testing - Part 2: Tests and Guidance - Combined Climatic (temperature/humidity) and Dynamic (vibration/shock) Tests

环境试验 第 2 部分：试验和导则

气候（温度、湿度）和动力学（振动、冲击）综合试验

[IEC 60068-2-53:2010, Environmental Testing - Part 2-53: Tests and Guidance - Combined Climatic (temperature/humidity)] and Dynamic (vibration/shock) Tests, IDT]

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Foreword

In accordance with test methods, GB/T 2423 *Environmental Testing - Part 2: Tet Methods* is divided into several parts.

This is the 35th part of GB/T 2423.

This Part was drafted in accordance with the rules in GB/T 1.1-2009.

This Part serves as a replacement of GB/T 2423.35-2005 *Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Test Z/AFc: Combined Cold/vibration (sinusoidal) Tests for Both Heat-dissipating and Non-heat-dissipating Specimens*; GB/T 2423.36-2005 *Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Test Z/BFc: Combined Dry Heat/vibration (sinusoidal) Tests for Both Heat-dissipating and Non-heat-dissipating Specimens*; GB/T 2424.22-1986 *Basic Environmental Testing Procedures for Electric and Electronic Products - Guidance for Combined Temperature (cold and heat) Vibration (sinusoidal) Tests*. This Part integrates the content in GB/T 2423.35-2005, GB/T 2423.36-2005 and GB/T 2424.22-1986. In comparison with these standards, the main technical changes are as follows:

---The scope of application of tests is extended: combined tests may be conducted under different vibrational excitations (sinusoidal, random, mixed mode or shock) and different climatic conditions (cold, dry heat, temperature variation, cyclic or constant damp heat).

---The previous standard's specific details of test requirements are not specifically described in this Part.

This Part adopts translation method and equivalently adopts IEC 60068-2-53:2010 *Environmental Testing - Part 2-53: Tests and Guidance - Combined Climatic (temperature/humidity)] and Dynamic (vibration/shock) Tests*.

Chinese documents that have consistent correspondence with the international documents that are normative references in this Part are as follows:

---GB/T 2421.1-2008 *Environmental Testing for Electric and Electronic Products - General and Guidance* (IEC 60068-1:1988, IDT);

---GB/T 2423.1-2008 *Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Tests A: Cold* (IEC 60068-2-1:2007, IDT);

---GB/T 2423.2-2008 *Environmental Testing for Electric and Electronic Products - Part 2: Test Methods - Tests B: Dry Heat* (IEC 60068-2-2:2007, IDT);

---GB/T 2423.3-2016 *Environmental Testing - Part 2: Testing Method - Test Cab:*

Damp Heat, Steady State (IEC 60068-2-78:2012, IDT);

---GB/T 2423.4-2008 *Environmental Testing for Electric and Electronic Products - Part 2: Test Method - Tests Db: Damp Heat, Cyclic (12 h + 12 h cycle)* (IEC 60068-2-30:2005, IDT);

---GB/T 2423.5-2019 *Environmental Testing - Part 2: Test Methods - Test Ea and Guidance: Shock* (IEC 60068-2-27:2008, IDT);

---GB/T 2423.10-2019 *Environmental Testing - Part 2: Tests Methods - Test Fc: Vibration (sinusoidal)* (IEC 60068-2-6:2007, IDT);

---GB/T 2423.22-2012 *Environmental Testing - Part 2: Test Methods - Test N: Change of Temperature* (IEC 60068-2-14:2009, IDT);

---GB/T 2423.56-2018 *Environmental Testing - Part 2: Test Methods - Test Fh: Vibration, Broadband Random and Guidance* (IEC 60068-2-64:2008, IDT);

---GB/T 2423.58-2008 *Environmental Testing for Electric and Electronic Products - Part 2: Tests Methods - Test Fi: Vibration - Mixed Mode* (IEC 60068-2-80:2005, IDT).

In order to make it convenient to be used, this Part makes the following editorial modifications:

---The title of the Standard is modified.

---In Table 1, "√" is used to replace "×".

This Part was proposed by and shall be under the jurisdiction of National Technical Committee 8 on Environmental Conditions of Electric and Electronic Products and Environmental Test of Standardization Administration of China (SAC/TC 8).

The drafting organizations of this Part: CEPREI; Shanghai Institute of Quality Inspection and Technical Research; BEIHANG University.

The main drafters of this Part: Chang Shaoli, Xiehe, Jiangcan, Lu Zhaoming, Wusa.

The issuing of the previous versions of the standard replaced by this Part is as follows:

---GB/T 2423.35-1986, GB/T 2423.35-2005;

---GB/T 2423.36-1986, GB/T 2423.36-2005;

---GB/T 2424.22-1986.

Environmental Testing - Part 2: Tests and Guidance - Combined Climatic (temperature/humidity) and Dynamic (vibration/shock) Tests

1 Scope

This Part of GB/T 2423 provides a description of test methods and guidance for testing equipment or components under combined climatic and dynamic conditions.

The purpose of combined testing is to investigate to what extent the equipment or components are affected by combined climatic and dynamic tests.

The method of combined tests detects electrical, mechanical or other physical variations.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

IEC 60068-1, *Environmental testing - Part 1: General and guidance*

IEC 60068-2-1, *Environmental testing - Part 2-1: Tests - Test A: Cold*

IEC 60068-2-2, *Environmental testing - Part 2-2: Tests - Test B: Dry heat*

IEC 60068-2-6, *Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14, *Environmental testing - Part 2-14: Test - Test N: Change of temperature*

IEC 60068-2-27, *Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock*

IEC 60068-2-30, *Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-64, *Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random (digital control) and guidance*

IEC 60068-2-78, *Environmental testing - Part 2-78: Tests - Test Cab: Damp heat,*

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