



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

GB/T 2423.6-1995

**Environmental testing for electric and electronic products - Part
2: Test methods - Test Eb and guidance: Bump
(English Translation)**

Issued on: August 29, 1995

Implemented on: August 1, 1996

Issued by: State Bureau of Technical Supervision

Table of Contents

Foreword...	3
IEC Foreword...	5
Introduction...	7
1 Object...	7
2 General description...	7
3 Definitions...	8
4 Description of test apparatus...	9
5 Severities...	11
6 Pre-conditioning...	12
7 Initial measurements...	12
8 Conditioning...	12
9 Recovery...	13
10 Final measurements...	13
11 Information to be given in the relevant specification...	13
Annex A (Standard) Guidance...	15
Annex B (Informative) Comparisons between impact tests...	21

Foreword

This Standard identically uses IEC 68-2-29 Environmental testing procedures Part 2.Tests - Test Eb and guidance. Bump (Second Edition of 1987),a standard of National Electrotechnical Commission.

This shall allow this national standard to be aligned with the international standard, so as to accommodate the needs of international trade, technology and economic exchange.

This Standard replaces GB 2423.6-81 Basic environmental testing procedures for electric and electronic products - Test Eb. Collision test method and GB 2424.4-81 Basic environmental testing procedures for electric and electronic products - Guidance for impact tests.

GB 2423.6-81 and GB 2424.4-81 were drafted based on IEC 68-2-29 (First

Edition of 1968) Basic environmental testing procedures Part 2. Tests - Test Eb and guidance. Bump. In addition to the differences in content and text arrangement between these two, the main differences are as follows.

- added three grades. 50 m/s², 16 ms; 50 m/s², 11 ms; 100 m/s², 11 ms in severe rating;
- divided the text and annexes of IEC 68-2-29 into two standards. Methods for impact test and Guidance for impact tests;
- added test requirements for test specimens of which structure and performance are completely symmetrical.

This Standard is identical to the second edition of IEC 68-2-29 (1987) in technical content, writing format and rules. The main differences between this Standard and the previous edition are as follows.

- added Foreword;
- added Clause 3 Definitions;
- modified pulse waveform and tolerance of impact test;
- modified requirements for frequency characteristics of measurement system;
- deleted three grades. 50 m/s², 16 ms; 50 m/s², 11 ms; 100 m/s², 11 ms from severe rating; added two grades. 150 m/s², 6 ms; 1000 m/s², 2 ms; modified the number of impact and test methods;
- divided one annex in the previous standard into two annexes, i.e., Annex A and Annex B and made supplement and modifications in content.

This Standard was drafted based on GB/T 1.1-93 Directives for the work of standardization. Unit 1. Drafting and presentation of standards. Part 1. General rules for drafting standards. It keeps the foreword of the International standard and added the "Foreword".

The following four standards together with this Standard all belong to impact test category. Relevant norms shall, according to product's use and the actual

conditions of transport, select appropriate test method (See Annex B).

- GB/T 2423.5-1995 Environmental testing for electric and electronic products Part 2.Test methods Test Ea and guidance. Shock

- GB/T 2423.7-1995 Environmental testing for electric and electronic products - Part 2.Test methods Test Ec and guidance. Drop and topple
Primarily for equipment-type specimens

- GB/T 2423.8-1995 Environmental testing for electric and electronic products Part 2.Test methods Test Ed. Free fall

- GB 2423.39-90 Environmental testing for electric and electronic products - Part 2.Test methods - Test Ee. Bounce

Annex A of this Standard is a standard annex;

Annex B of this Standard is an informative annex.

This Standard was proposed by Ministry of Electronics Industry of the People's Republic of China.

This Standard shall be under the jurisdiction of National Technical Committee on Environmental Conditions And Environmental Testing of Electric and Electronic Products of Standardization Administration of China.

The drafting organizations of this Standard. The 7th Standardization Room of China Shipbuilding Industry Corporation.

Main drafters of this Standard. Huang Shufu, Sheng Zurao, Chen Henian, Jin Baogen, Xu Liyi, Wang Shurong.

Environmental testing for electric and electronic products - Part 2.Test methods
Test Eb and guidance. Bump

Introduction

This test is applicable to components, equipment and other electrotechnical products, hereinafter referred to as "specimens", which, during transportation or in use, may be subjected to repetitive shocks. The bump test may also be

used as a means of establishing the satisfactory design of a specimen in so far as its structural integrity is concerned and as a means of quality control. It consists basically of subjecting, on a bump tester, a specimen to repetitive shocks of a standard pulse shape with specified peak acceleration and duration.

NOTE The term "bump tester" is used throughout this Standard but other means of applying "bumps" are not excluded.

Specification writers will find in Clause 11 a list of details to be considered for inclusion in specifications and in Annex A the necessary guidance.

1 Object

To provide a standard procedure for determining the ability of a specimen to withstand specified severities of bump.

2 General description

This Standard is written in terms of a prescribed number of repetitive half-sine pulses with given peak acceleration and duration.

The purpose of the test is to reveal the accumulated damage or degradation caused by repetitive shocks, and to use the information, in conjunction with the relevant specification, to decide whether a specimen is acceptable or not. It may also be used, in some cases, to determine the structural integrity of specimens or as a means of quality control (see Clause A3).

This test is primarily intended for unpackaged specimens and for items in their transport case when the latter may be considered as part of the specimen itself.

.....