

INTERNATIONAL STANDARD

IEC
60068-2-77

First edition
1999-01

Environmental testing –

Part 2-77:

Tests – Test 77 – Body strength and impact shock

Essais d'environnement –

Partie 2-77:

Essais – Essai 77 – Résistance du corps et résistance au choc par impact



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For general terminology, readers are referred to IEC 60050: *International Electrotechnical Vocabulary* (IEV).

For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams*.

* See web site address on title page.

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International Electrotechnical Commission

Telefax: +41 22 919 0300

3, rue de Varembé Geneva, Switzerland

e-mail: inmail@iec.ch

IEC web site: <http://www.iec.ch>



Commission Electrotechnique Internationale
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENVIRONMENTAL TESTING –

Part 2-77: Tests – Test 77: Body strength and impact shock

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60068-2-77 has been prepared by IEC technical committee 50: Environmental testing, and is published by IEC technical committee 91: Surface mounting technology.

The text of this standard is based on the following documents:

FDIS	Report on voting
91/155/FDIS	91/162/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annex A is for information only.

ENVIRONMENTAL TESTING –

Part 2-77: Tests – Test 77: Body strength and impact shock

1 Scope and object

This part of IEC 60068 provides test methods applicable to surface mounting devices (SMDs) made of glass or sintered materials such as capacitors, resistors and inductors incorporating ferrites. Two test methods exist: body strength and impact shock.

The object of both tests is to evaluate the mechanical stresses applied to SMDs during and after mounting; these tests look at different mechanical stresses. The relevant component specification shall specify which test method or methods are applicable.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of IEC 60068. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 60068 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60194:—, *Terms and definitions for printed circuits*

3 Terms and definitions

For the purpose of this part of IEC 60068, the terms and definitions given in IEC 60194 apply.

4 Test methods

4.1 Body strength

This test evaluates the strength of the body of the SMD against external static forces which are applied to them during mounting, in the direction perpendicular to the printed board on which the SMDs are mounted.

NOTE – The test evaluates the sturdiness of the body of the SMDs and not the adhesive strength at the interface between the termination and solder of the body. These latter tests are described in IEC 60068-2-21.

This test simulates the static force applied to SMDs during picking up and centering in a placement process with a rather slow speed mounting machine in which the forces are mainly of a static nature.

A static force can have a different influence on a device from that of a dynamic force, whose effects can be evaluated by a test separately described as an impact shock test. This simulates the mechanical stress applied to the SMDs, during and after mounting the SMDs on a printed board. This test shall be referred to in the relevant detail specification.