

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Transformers and inductors for use in electronic and telecommunication
equipment – Measuring methods and test procedures**

**Transformateurs et inductances utilisés dans les équipements électroniques et
de télécommunications – Méthodes de mesure et procédures d'essais**





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TRANSFORMERS AND INDUCTORS FOR USE IN ELECTRONIC AND TELECOMMUNICATION EQUIPMENT – MEASURING METHODS AND TEST PROCEDURES

FOREWORD

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International Standard IEC 61007 has been prepared by IEC technical committee 51: Magnetic components, ferrite and magnetic powder materials.

This third edition cancels and replaces the second edition published in 1994. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) scope: the application of the scope of IEC 61007 was extended;
- b) Clause 2: added new references and updated the references;
- c) Clause 3: new definitions were added in 3.3, and in 3.7 the voltage-time product was redefined;

d) test procedures were updated:

1) addition of test method:

AC resistance (in 4.4.1.2); short-circuit power test (in 4.4.3.4); efficiency (in 4.4.3.5); phase unbalance (in 4.4.5.7); amplitude unbalance (radio frequency) (in 4.4.5.8); transformation ratio by impedance (in 4.4.7.1); coefficient of coupling (in 4.4.7.2); cross-talk (in 4.4.10);

2) modification of test method:

Insulation resistance (an error range of the testing voltage, in 4.4.2.3);

3) deletion of test method:

Effective resistance;

e) environmental test procedures: new references were added;

f) Annexes A to G were added.

The text of this International Standard is based on the following documents:

CDV	Report on voting
51/1319/CDV	51/1339/RVC

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

TRANSFORMERS AND INDUCTORS FOR USE IN ELECTRONIC AND TELECOMMUNICATION EQUIPMENT – MEASURING METHODS AND TEST PROCEDURES

1 Scope

This document describes a number of tests for use in determining the significant parameters and performance characteristics of transformers and inductors for use in electronics and telecommunication equipment. These test methods are designed primarily for transformers and inductors used in all types of electronics applications that can be involved in any specification for such components. Even though these tests can be useful to the other types of transformers used in power distribution applications in utilities, industry, and others, the tests discussed in this document can supplement or complement the tests but are not intended to replace the tests in standards for transformers. Some of the tests described are intended for qualifying a product for a specific application, while others are test practices used for manufacturing and customer acceptance testing. The test methods described here include those parameters most commonly used in the electronics transformer and inductor industry: electric strength, resistance, power loss, inductance, impedance, balance, transformation ratio and many others used less frequently.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050 (all parts), *International Electrotechnical Vocabulary (IEV)* (available at www.electropedia.org)

IEC 60068-1: 2013, *Environmental testing – Part 1: General and guidance*

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

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Tests 8: Dry heat*

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

IEC 60068-2-7, *Basic environmental testing procedures – Part 2-7: Tests – Test Ga and guidance: Acceleration, steady state*

IEC 60068-2-10, *Environmental testing – Part 2-10: Tests – Test J and guidance: Mould growth*

IEC 60068-2-13, *Basic environmental testing procedures – Part 2-13: Tests – Test M: Low air pressure*

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

IEC 60068-2-17, *Basic environmental testing procedure – Part 2-17: Tests – Test Q: Sealing*

IEC 60068-2-20, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*