

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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CONTENTS

FOREWORD.....	6
1 Scope.....	8
2 Normative references	8
3 Terms and definitions	9
4 Test procedures	13
4.1 Test and measurement conditions.....	13
4.1.1 General	13
4.1.2 Measurement uncertainty.....	16
4.1.3 Alternative test methods	17
4.2 Visual inspection.....	16
4.2.1 General	16
4.2.2 Safety screen position	16
4.2.3 Quality of joints	16
4.3 Dimensioning and gauging procedure.....	19
4.4 Electrical test procedures	19
4.4.1 Winding resistance	19
4.4.2 Insulation tests.....	20
4.4.3 Losses.....	23
4.4.4 Inductance.....	27
4.4.5 Unbalance	27
4.4.6 Capacitance	32
4.4.7 Transformation ratios.....	35
4.4.8 Resonant frequency	41
4.4.9 Signal transfer characteristics	42
4.4.10 Cross-talk.....	46
4.4.11 Frequency response	47
4.4.12 Pulse characteristic	48
4.4.13 Voltage-time product rating.....	49
4.4.14 Total harmonic distortion.....	50
4.4.15 Voltage regulation	51
4.4.16 Temperature rise.....	52
4.4.17 Surface temperature	53
4.4.18 Polarity	54
4.4.19 Screens	56
4.4.20 Noise	57
4.4.21 Corona tests	58
4.4.22 Magnetic fields.....	58
4.4.23 Inrush current	61
4.5 Environmental test procedures.....	61
4.5.1 General.....	61
4.5.2 Soldering	61
4.5.3 Robustness of terminations and integral mounting devices	61
4.5.4 Shock	61
4.5.5 Bump.....	62
4.5.6 Vibration (sinusoidal).....	62
4.5.7 Acceleration, steady state.....	62
4.5.8 Rapid change of temperature (thermal shock in air).....	62

4.5.9	Sealing	62
4.5.10	Climatic sequence	62
4.5.11	Damp heat, steady state	62
4.5.12	Dry heat	63
4.5.13	Mould growth	63
4.5.14	Salt mist, cyclic (sodium chloride solution)	63
4.5.15	Sulphur dioxide test for contacts and connections	63
4.5.16	Fire hazard	63
4.5.17	Immersion in cleaning solvents	63
4.6	Endurance test procedures	63
4.6.1	Short-term endurance (load run)	63
4.6.2	Long-term endurance (life test)	64
Annex A (normative) DC resistance test		65
A.1	General	65
A.2	Resistance values under 1 Ω – Kelvin double-bridge method	65
A.3	Resistance values from 1 Ω to many kilo-ohms	66
A.3.1	General	66
A.3.2	Ammeter and voltmeter method	66
A.3.3	Substitution method	67
A.3.4	Wheatstone bridge	68
A.3.5	Ohmmeter	69
A.4	Digital ohmmeter – Resistance values from under 1 Ω to many kilo-ohms	70
Annex B (normative) Dielectric voltage withstand test		71
Annex C (normative) Induced voltage test		73
C.1	Induced voltage test	73
C.2	General test conditions	73
C.3	General test methods	73
C.4	Induced excitation voltage and frequency	75
C.5	Repeated induced voltage testing	75
C.6	Excitation current	75
Annex D (normative) No-load loss		76
D.1	General	76
D.2	Excitation waveform	76
D.2.1	General	76
D.2.2	Sine-voltage (sine-flux) excitation	76
D.2.3	Sine-current excitation	77
D.2.4	Square-wave voltage excitation	77
D.3	Test method and instrumentation	78
D.3.1	General	78
D.3.2	Wattmeter	78
D.3.3	Ammeters	79
D.3.4	Voltmeters	79
D.4	Test specifications and results	79
Annex E (normative) Quality factor, Q		80
E.1	General	80
E.2	Accuracy	80
E.3	Generators	80
E.3.1	Signal generator	80

E.3.2	Pulse generator	80
E.3.3	Antenna	80
E.4	Capacitor	81
E.5	Measuring circuit.....	81
E.5.1	Oscilloscope	81
E.5.2	Probe	81
E.6	Measuring procedure	81
E.7	Calculation.....	82
Annex F (normative)	Electrostatic shielding	84
F.1	Symbols.....	84
F.2	Theoretical discussion	86
F.3	Measurement methods.....	87
F.3.1	Indirect method.....	87
F.3.2	Direct method	88
Annex G (normative)	Corona test.....	89
G.1	Detection of corona.....	89
G.2	Analysis of corona	89
G.3	Test conditions and specifications.....	90
Bibliography.....		91
Figure 1	– Pulse waveform parameters	11
Figure 2	– Examples of good solder joints.....	17
Figure 3	– Examples of defective joints.....	18
Figure 4	– No-load current test schematic.....	24
Figure 5	– No-load loss test schematic	24
Figure 6	– Simplified diagram for short-circuit power test	26
Figure 7	– Circuit for measuring capacitance unbalance	28
Figure 8	– Circuit for determining common mode rejection ratio	28
Figure 9	– Circuit for measuring impedance unbalance	29
Figure 10	– Circuit for determining cross-talk attenuation.....	30
Figure 11	– Schematic diagram of phase unbalance and amplitude unbalance	32
Figure 12	– Typical graph for determining self-capacitance.....	34
Figure 13	– Circuit for determining inter-winding capacitance	35
Figure 14	– Circuit for measurement of voltage transformation ratio.....	38
Figure 15	– Circuit for measuring current transformation ratio and phase displacement	39
Figure 16	– Measuring circuit of current transformation ratio and phase displacement	40
Figure 17	– Circuit for determining parallel self-resonant frequency	41
Figure 18	– Circuit for determining resonant frequency of resonant assemblies	42
Figure 19	– Circuit for determination of insertion loss	43
Figure 20	– Use of two identical transformers when the transformation ratio is not unity and/or a DC bias is required	44
Figure 21	– Illustration of return loss.....	45
Figure 22	– Basic return loss test circuit	46
Figure 23	– Circuit diagram for measuring the crossover interference between two transformer coils.....	47
Figure 24	– Impulse waveform measuring circuit.....	49

Figure 25 – Non-linearity of magnetizing current	50
Figure 26 – Voltage regulation test schematic	51
Figure 27 – Phase (polarity) test using voltage measurement	54
Figure 28 – Series connection method	55
Figure 29 – Helmholtz structure	59
Figure A.1 – Measurement of low resistance	65
Figure A.2 – Kelvin double-bridge method of measuring low resistance	66
Figure A.3 – Ammeter and voltmeter method of resistance measurement	67
Figure A.4 – Measurement of resistance by substitution	68
Figure A.5 – Connections of Wheatstone bridge	68
Figure A.6 – Principle of series ohmmeter	69
Figure A.7 – Digital ohmmeter method of resistance measurement	70
Figure B.1 – Typical high-potential test, showing section 1 under test	71
Figure B.2 – Typical high-potential test of inductor	71
Figure C.1 – Block diagram of induced voltage surge test	73
Figure D.1 – Triangular flux-density variation in transformer core	78
Figure D.2 – Test circuit for transformer no-load losses	78
Figure E.1 – Damped oscillation method	80
Figure E.2 – Oscilloscope sweep for damped oscillation method	82
Figure F.1 – Shielded single winding, core floating	84
Figure F.2 – Basic electrostatic symbol	84
Figure F.3 – Multiple-shielded single winding, core terminal (lead) provided	84
Figure F.4 – Shielded two-winding secondary, core grounded	85
Figure F.5 – Shielded group of windings, core floating	85
Figure F.6 – Multiple-shielded group of windings, core terminal (lead) provided	85
Figure F.7 – Combination of shielding conditions	86
Figure F.8 – Typical two-winding shielded transformer	86
Figure F.9 – Simplified representation of Figure F.8	86
Figure F.10 – Indirect measuring method for electrostatic shielding	87
Figure G.1 – Typical circuit for corona measurement (circuit 1)	89
Figure G.2 – Typical circuit for corona measurement (circuit 2)	90
Table 1 – Recommended tests and specifications for specific transformer and inductor groups	14
Table 2 – Voltage of dielectric withstanding voltage test	20
Table 3 – Sound-level corrections for audible noise tests	57
Table 4 – Cube dimensions, together with corresponding search coil data	60

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*