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# INTERNATIONAL STANDARD

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**Inductive components – Reliability management**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### INDUCTIVE COMPONENTS – RELIABILITY MANAGEMENT

#### FOREWORD

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International Standard IEC 62211 has been prepared by IEC technical committee 51: Magnetic components, ferrite and magnetic powder materials.

This second edition cancels and replaces the first edition published in 2003. This edition constitutes a technical revision.

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

- a) continuous shock and mechanical shock are integrated in the test conditions;
- b) the normative references in Table 3 are changed.

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

FDIS	Report on voting
51/1150/FDIS	51/1158/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.

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

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

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- withdrawn,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

A bilingual version of this publication may be issued at a later date.

## INDUCTIVE COMPONENTS – RELIABILITY MANAGEMENT

### 1 Scope

This document is applicable to inductive components (chokes and transformers) based on magnetically soft materials. These are components based especially on laminated iron sheets, iron powder materials (including alloys), as well as ferrites and amorphous or crystalline metal band cores.

Winding assemblies mean wire winding assemblies as well as multilayer and stacking technologies of planar technology including coils based on non-magnetic materials. Discrete type components and the different types of surface mount inductive components (SMD) are also considered in this document.

The reliability of assemblies of inductive components based on several technologies such as glued types, types with clamps (clips), impregnated (varnished) types as well as (vacuum) potted types can also be checked with this document.

The subsequent determinations can be applied either for the primary qualification of inductive components or for all manners of requalification examinations (design, process, change of production facility). They can also be applied for the monitoring of products out of actual manufacturing processes.

This document sets up a broad basis of electric and mechanical criteria of failure test procedures.

If manufacturers advertise compliance with this standard in their data sheets, customers can request data to demonstrate compliance with this standard. The customers can also request the product to be in compliance with this standard by a recognised body.

Customers and manufacturers can elect to perform additional testing and acceptance criteria different than those defined in this standard.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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: Tests – 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 60068-2-58, *Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

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

IEC 60424 (all parts), *Ferrite cores – Guidelines on the limits of surface irregularities*

IEC 61007:1994, *Transformers and inductors for use in electronic and telecommunication equipment – Measuring methods and test procedures*

IEC 61248 (all parts), *Transformers and inductors for use in electronic and telecommunication equipment*