

INTERNATIONAL STANDARD

NORME INTERNATIONALE

High frequency inductive components – Electrical characteristics and measuring methods –

Part 2: Rated current of inductors for DC-to-DC converters

Composants inductifs à haute fréquence – Caractéristiques électriques et méthodes de mesure –

Part 2: Courant assigné des bobines d'inductance pour les convertisseurs continu-continu



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HIGH FREQUENCY INDUCTIVE COMPONENTS –
ELECTRICAL CHARACTERISTICS AND MEASURING METHODS –****Part 2: Rated current of inductors for DC-to-DC converters**

FOREWORD

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IEC 62024-2 has been prepared by IEC technical committee 51: Magnetic components, ferrite and magnetic powder materials. It is an International Standard.

This third edition cancels and replaces the second edition published in 2020. This edition constitutes a technical revision.

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

- a) extension of scope by increase of range of rated current from 22 A to 125 A;
- b) extension of scope by increase of footprint limitation from 12 mm × 12 mm to 625 mm²;
- c) addition of upper current limitation for $I_{\text{class B}}$, $I_{\text{class C}}$ and $I_{\text{class D}}$ board to Table 1;
- d) revised application examples for Table 1;

- e) addition of wire size references for current ranges between $22\text{ A} \leq I \leq 125\text{ A}$ to Table 2;
- f) addition of crimp terminal references to Table 2;
- g) addition of thermal camera method.

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

Draft	Report on voting
51/1522/FDIS	51/1532/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts of IEC 62024 series, published under the general title *High frequency inductive components – Electrical characteristics and measuring methods* can be found on the IEC website.

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

- reconfirmed,
- withdrawn, or
- revised.

HIGH FREQUENCY INDUCTIVE COMPONENTS – ELECTRICAL CHARACTERISTICS AND MEASURING METHODS –

Part 2: Rated current of inductors for DC-to-DC converters

1 Scope

This part of IEC 62024 specifies the measuring methods of the rated DC limits for inductors as defined below.

Standardized measuring methods for the determination of ratings enable users to accurately compare the current ratings given in various manufacturers' data books.

This document is applicable to leaded and surface mount inductors with dimensions according to IEC 62025-1 and generally with rated current less than 125 A, although inductors with rated current greater than 125 A are available that fall within the dimension restrictions of this document (no larger than a 625 mm² footprint). These inductors are typically used in DC-to-DC converters built on printed circuit boards (PCBs), for electronic and telecommunication equipment, and small size switching power supply units.

The measuring methods are defined by the saturation and temperature rise limitations induced solely by direct current (DC).

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

direct saturation limited current (DC)

allowable value of direct current (DC) for which the decrease of the inductance is within the specified value

3.2

temperature rise limited current

allowable value of direct current (DC) for which the self-generation heat of the inductor results in temperature rise within the specified value