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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 28869.2-2023

Replacing GB/T 9632.1-2002

**Cores made of soft magnetic materials - Measuring methods -
Part 2: Magnetic properties at low excitation level
(English Translation)**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is Part 2 of GB/T 28869 "Measurement Methods for Magnetic Cores Made of Soft Magnetic Materials": GB/T 28869 has been released the following parts:

- Part 1: General specifications;
- Part 2: Magnetic properties at low excitation levels;
- Part 3: Magnetic properties at high excitation levels:

This document partially replaces GB/T 9632.1-2002 "Measurement Methods for Magnetic Cores of Inductors and Transformers for Telecommunications" and is consistent with GB/T 9632.1-Compared with:2002, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- Changed the scope of the file (see Chapter 1, Chapter 1 of the:2002 edition);
- Added terms and definitions (see Chapter 3);
- Added symbols (see Chapter 4);
- Changed the content of third harmonic distortion (see Chapter 13, Chapter 12 of the:2002 edition);
- Added the measurement method of Curie temperature (see Chapter 14);
- Added nominal impedance, parallel conductance and insertion loss (see Chapter 15):

This document is equivalent to IEC 62044-2:2005 "Measurement methods for magnetic cores made of soft magnetic materials - Part 2: Low excitation levels" Magnetic Properties":

This document has made the following minimal editorial changes:

- Incorporated the errata content of IEC 62044-2:2005/COR1.2021, the outer margins of the involved clauses are marked with vertical Straight double lines (||) are marked;
- Changed the errors in 9:5:3 and 9:5:5b), changing "Chapter 6" to "Chapter 5";
- Added references:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

GB/T 9632.1-2002 "Measurement Method for Magnetic Cores of Inductors and Transformers for Communications", as the basic standard of the soft magnetic industry, is

widely used by enterprises:

Widely adopted: GB/T 9632.1-2002 is equivalent to IEC 60367-1:1982, which has been replaced by IEC 62044 series standard, so it is revised according to the structural relationship of the new IEC standard: IEC 62044-1:2002 has been converted into GB/T 28869.1-2012: GB/T 28869 "Measurement Method for Magnetic Cores Made of Soft Magnetic Materials" consists of three parts:

---Part 1: General specifications: The purpose is to establish the general rules to be followed for the various possible measurement methods of magnetic cores made of soft magnetic materials:

Use principles:

---Part 2: Magnetic properties at low excitation levels: The purpose is to establish the magnetic and electrical properties of cores operating at low excitation levels Normative guidelines for energy measurement methods:

---Part 3: Magnetic properties at high excitation levels: The purpose is to specify the power dissipation and amplitude magnetism of closed-circuit cores at high excitation levels:

conductivity measurement method:

The revision of GB/T 28869 is conducive to the test methods of magnetic cores made of soft magnetic materials being in line with international standards, and the test results are internationally recognized:

And expand export trade of related products:

Measurement method for magnetic cores made of soft magnetic materials Part 2: Magnetic properties at low excitation levels

1 Scope

This document applies to magnetic cores made of magnetic oxides or metal powders used primarily in communications equipment and similar technologies Inductors and transformers in electronic instruments that operate at low excitation levels:

Some of the methods described in this document are also applicable to cores used in other electronic components:

This document gives normative guidelines for drafting methods for measuring the magnetic and electrical properties of magnetic cores: This document is limited to various possible tests the general principles followed by the method and list the factors to be considered when describing the test method in the technical specification:

Note: All formulas in this document are in International System of Units (SI) units: When using multiples and divisors, it is advisable to introduce powers of 10, inductance and inductance factor