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

GB/T 44069.12-2026

Replacing GB/T 9634.4-2007, GB/T 28868-2012

**Ferrite cores - Guidelines on dimensions and the limits of
surface irregularities - Part 12: Ring-cores**

铁氧体磁心 尺寸和表面缺陷极限导则 第12部分：环形磁心

(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 12 of GB/T 44069, "Limits and Limits for Dimensions and Surface Defects of Ferrite Cores". GB/T 44069 has been...

The following sections were published.

- Part 4: RM type magnetic core;
- Part 5: EP type magnetic cores and accessories for inductors and transformers;
- Part 6: ETD type magnetic cores for power supplies;
- Part 9: Planar Magnetic Cores;
- Part 10: PM Type Magnetic Cores and Accessories;
- Part 12: Toroidal Core;
- Part 14: EFD type magnetic core.

This document supersedes GB/T 9634.4-2007 "Guidelines for Limiting Surface Defects in Ferrite Cores Part 4: Toroidal Cores" and GB/T 28868-2012 "Dimensions of Uncoated Magnetic Oxide Toroidal Cores", and GB/T 9634.4-2007 and Compared with GB/T 28868-2012, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- Added information regarding the core dimensions after coating (see 4.3);
- Added information on surface defects of crystal spots (see 5.1.4);
- Added content related to surface defects of pores (see 5.1.5);
- Added information on core defects after coating (see 5.2).

This document is equivalent to IEC 63093-12:2019 "Limits and limits for dimensional and surface defects in ferrite cores - Part 12: Toroidal cores".

core".

The following minimal editorial changes have been made to this document.

- Notes have been added to Table 3 to explain the source of the parameters.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This document is under the jurisdiction of the National Technical Committee on Standardization of Magnetic Components and Ferrite Materials (SAC/TC89).

Introduction

Due to the manufacturing process and the physical characteristics of the product, ferrite cores may exhibit certain physical defects, such as chipping, irregular edges, etc.

Cracks and adhesion. The tolerance for these surface defects depends primarily on the type, location, and size of the defect, as well as the structure of the magnetic core. GB/T 44069 the "Guidelines on Limits of Ferrite Core Dimensions and Surface Defects" mainly specifies the core series (such as RM type cores, pot cores, E type cores, and toroidal cores).

The limits of size and surface defects (such as shaped magnetic cores). GB/T 44069 is proposed to consist of the following parts.

---Part 1: General Specifications. The purpose is to establish general principles for the dimensional description and surface defect constraints of ferrite cores.

---Part 2: Pot Cores for Communication, Power Supply, and Filtering. The aim is to establish the dimensional and surface defect tolerances for pot cores.

limit.

---Part 3: Ferrite Semi-Canister Cores for Inductive Proximity Switches. The purpose is to determine the dimensions and surface defects of the semi-canister cores.

Permissible limits.

---Part 4: RM Type Cores. The purpose is to establish the dimensional and surface defect tolerance limits for RM type cores.

---Part 5: EP-type magnetic cores and accessories for inductors and transformers. The purpose is to establish the dimensions and surface defects of EP-type magnetic cores.

Trapped to the limit.

---Part 6: ETD type magnetic cores for power supplies. The purpose is to establish the dimensional and surface defect tolerance limits for ETD type magnetic cores.

---Part 7: EER Type Cores. The purpose is to establish the dimensional and surface defect tolerance limits for EER type cores.

---Part 8: Type E Cores. The purpose is to establish the dimensional and surface defect tolerance limits for Type E cores.

---Part 9: Planar Magnetic Cores. The purpose is to establish the dimensions and permissible limits for surface defects in planar magnetic cores.

---Part 10: PM Type Cores and Accessories. The purpose is to establish the dimensional and surface defect tolerance limits for PM type cores.

---Part 11: EC type magnetic cores for power supplies. The purpose is to establish the dimensional and surface defect tolerance limits for EC type magnetic cores.

---Part 13: PQ Type Cores. The purpose is to establish the dimensional and surface defect tolerance limits for PQ type cores.

---Part 14: EFD Type Cores. The purpose is to establish the dimensional and surface defect tolerance limits for EFD type cores.

---Part 15: U-shaped cores. The purpose is to establish the dimensional and surface defect tolerance limits for U-shaped cores.

---Part 16: SQ Type Core. The purpose is to establish the dimensional and surface defect tolerance limits for SQ type cores.

---Part 17: Balun Cores. The purpose is to establish the dimensional and surface defect tolerance limits for balun cores.

A toroidal magnetic core is a simple closed-circuit magnetic core with low manufacturing and assembly costs. It features high output power, low leakage flux, and strong anti-interference capabilities.

Due to its superior properties such as high strength, toroidal cores are mainly used as magnetic cores for pulse transformers, chokes, drive transformers, and inductors. However, the size specifications of toroidal cores are complex.

Numerous defects can hinder manufacturing management and optimal design processes. Surface defects such as cracks, spalling, and porosity generated during production can negatively impact the final product.

Electromagnetic properties, thus affecting the final performance of magnetic devices. This document mainly specifies the dimensions of toroidal magnetic cores and the permissible limits for surface defects.

This initiative aims to help companies in this field improve their technical specifications, enhance product quality, standardize production and trading practices, and promote the healthy development of enterprises and the industry as a whole.

develop.

Ferrite core dimensions and surface defects Limiting Guidelines Part 12: Toroidal Cores

1 Scope

This document specifies the key dimensions related to the mechanical interchangeability of preferred series of toroidal cores, as well as the effective parameter values used in calculations.

This document provides guidelines for the permissible limits of surface defects in toroidal magnetic cores.

This document serves as a sub-guideline in negotiations between core manufacturers and users regarding surface defects.