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

**GB/T 11441.1-2012**

Replacing GB/T 11441-1989

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**Laminations for transformers and inductors for use in  
telecommunication and electronic equipment -- Part 1:  
Mechanical and electrical characteristics**

通信和电子设备用变压器和电感器铁心片 第1部分：机械和电性能

**(English Translation)**

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## Foreword

GB/T 11441 "in telecommunication and electronic equipment - transformers and inductors core piece" is divided into two parts.

--- Part 1. mechanical and electrical properties;

--- Part 2. Soft metal laminations lowest permeability specifications.

This section GB/T 11441 Part 1.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This Part replaces GB/T 11441-1989 "telecommunication and electronic equipment transformers and inductors laminations." this section compared with the GB/T 11441-1989, the main changes are as follows.

--- Increasing the stacked core with the provisions (see Chapter 5);

--- Increasing the stacked core with YS, YSUI1, YSUI2 and stacked laminations YEx4, YEE2-L model (see para.

Chapter 13);

--- Expands the size YEI1 (see Chapter 13);

- Canceled model YED2, YEE4, YEF4 of stacked laminations (see Chapter 13);
- Provisions of the stacked core electrical characteristics (see Chapter 14);
- Increase the mechanical properties of the stacked core (see Chapter 17);
- Increased YEI1, YUI1, YUI2, YM1 openings (see Chapter 13);
- Added Appendix A. In Appendix A, we describe the magnetic polarization and magnetic field strength H and J units total apparent power change Operators relationship, the provisions of the reactive power and active power loss characteristics, related factors and formulas.

This section identical with IEC 60740-1:2005 "communication and electronic equipment laminations for transformers and inductors - Part 1. mechanical and Electrical properties. " this part of IEC 60740-1:2005, compared also made the following editorial changes.

- With "this Part" instead of "this International Standard";
- Normative references, the guide word press GB/T 1.1-2009 requirements;
- References in some of the standard replaced by the use of international standards to national standards or industry standards;
- With a decimal point instead of the IEC standard as decimal point ", ". ";
- In the calculation formula, the value is multiplied by the multiplication sign "x" dot instead of "\*";
- Remove the IEC standard foreword.

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

This part of the National Magnetic components and ferrite materials Standardization Technical Committee (SAC/TC89) centralized.

This section drafted by. Device Technology Co., Ltd. Sichuan Changhong.

## 1 Scope

This section GB/T 11441 specifies the characteristics of core pieces.

This section applies to laminations mainly used in transformers and inductors. These laminations with IEC 60404-8-4:1998 and IEC 60404-8-7:1998 predetermined magnetic electrical steel sheet (strip) made.

## 2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 21219-2007 magnetic classification (IEC 60404-1:2000, IDT) IEC 60050-221:1990 Electrotechnical terminology Magnetic materials and components [Internationalelectrotechnicalvocabulary (IEV) chapter221. Magneticmaterialsandcomponent] IEC 60404-8-4:1998 Magnetic materials - Part 8. Specifications for individual materials - Section 4. The whole process of cold rolled non-state delivery Oriented electrical steel (belt) (Magneticmaterials-Part 8-4. Specificationsforindividualmaterialscold-rolled electricalsteelsheetandstripdeliveredinthefully-processedstate) IEC 60404-8-7:1998 Magnetic materials - Part 8. Specifications for individual materials Section 7. The whole process of cold-rolled grain delivery status Grain oriented electrical steel sheet (strip) (Magneticmaterials-Part 8-7. Specificationsforindividualmaterialscold-rolled gain-orientedelectricalsteelsheetandstripdeliveredinthefully-processedstate) IEC 60404-11:1999 electrical steel sheet (strip) surface insulation resistance, coating adhesion test method (Magneticmaterials-Part 11. Mathodoftestforthedeterminationofsurfaceinsulationresistenceofmagneticsheetand strip) IEC 61021-1:1990 communications and electronic equipment for transformers and inductors Laminated core packages - Part 1. Dimensions (Laminatedcorepackagesfortransformersandinductorsintelecommunicationandelectronicequ i-ment-Part 1. Demensions) IEC 61021-2:1995 communications and electronic equipment transformers and inductors laminated core packages - Part 2. YEE2 laminations Core electrical properties (Laminatedcorepackagesfortransformersandinductorsintelecommunicationandelec-troniceq uipment-Part 2. ElectricalcharacteristicsforcoringYEE2laminations) ISO 286-1. 1988 ISO system of limits and fits - Part 1. Tolerances, deviations and fits basis (ISO systemoflimits andfits-Part 1. Basesoftolerancesdeviationsandfita)

## 3 Terms, definitions and symbols

IEC 60050-221:1990 and defined the following terms and definitions, symbols apply to this document.

Lamination laminations One kind of magnetic sheet steel or alloy electrician, usually from a single composition or a few slices of halves together to form iron inserts hearts End