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

**GB/T 19212.17-2019**

Replacing GB/T 19212.17-2013

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**Safety of transformers, reactors, power supply units and similar products for supply  
voltages up to 1 100 V -- Part 17: Particular requirements and tests for switch mode power  
supply units and transformers for switch mode power supply units**

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### Foreword

GB/T 19212 "Safety of transformers, reactors, power supply units and their combinations"  
1) consists of the following parts.

1) In GB/T 19212, some parts are under the heading "Safety of Power Transformers, Power Sources, Reactors and Similar Products", and some parts are in "Power Supply Voltage".

Under the heading "Safety of transformers, reactors, power supply units and similar products of 1100V and below", some parts are in "Transformers, Reactors, Electricity".

Under the heading "Safety of Source Devices and Their Combinations", the title of the future GB/T 19212 may be revised.

- Part 1. General requirements and tests;
- Part 2. Particular requirements and tests for power supply for general purpose separation transformers and built-in separation transformers;
- Part 3. Particular requirements and tests for controlling the power supply of transformers and built-in control transformers;
- Part 4. Particular requirements and tests for gas and oil burner ignition transformers;
- Part 5. Particular requirements and tests for power supply units for isolating transformers and built-in isolating transformers;
- Part 6. Special requirements and tests for razor transformers, power supply units for razors and razor supply units;
- Part 7. Particular requirements and tests for safety isolating transformers and power supply units with built-in safety isolating transformers;
- Part 8. Special requirements and tests for transformers and power supplies for toys;
- Part 9. Special requirements and tests for transformers and power supply units for electric bells and clocks;
- Part 10. Particular requirements and tests for transformers and power supply units for Class III portable tungsten lamps;

- Part 13. Special requirements for constant voltage transformers;
- Part 14. Particular requirements and tests for autotransformers and power supply units with built-in autotransformers;
- Part 15. Particular requirements and tests for power supply units for voltage regulators and built-in regulators;
- Part 16. Special requirements and tests for isolation transformers for power supply in medical facilities;
- Part 17. Particular requirements and tests for transformers for switch-type power supply units and switch-type power supply units;
- Part 20. Particular requirements for interference attenuation transformers;
- Part 21. Special requirements and tests for small reactors;
- Part 24. Particular requirements for transformers for construction sites;
- Part 27. Particular requirements and tests for transformers and power supply units for energy and other purposes.

This part is the 17th part of GB/T 19212. This part is based on GB/T 19212.1-2016, this part

It must be used in conjunction with GB/T 19212.1-2016. This section supplements and repairs the corresponding chapters and articles of GB/T 19212.1-2016.

Change to convert the contents of GB/T 19212.1-2016 into the content of this section. This section is for GB/T 19212.1-2016

The added content is numbered starting from 101, and the newly added appendix numbers are AA, BB, etc.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 19212.17-2013 "Transformers, reactors, power supply units and classes with a supply voltage of 1100V and below"

Safety of products - Part 17. Particular requirements and tests for transformers for switch-type power supply units and switch-type power supply units. versus

Compared with GB/T 19212.17-2013, the main technical changes are as follows.

- Added "Introduction";
- Modified normative references (see Chapter 2);
- Added terms and definitions (see Chapter 3);
- Increased the requirements for voltage coefficient requirements of dielectric strength test

for different structural products (see 18.3);

--- Added provisions for partial discharge testing using FIW winding wire products (see 18.102);

--- Revised the structure of the provisions (see Chapter 19);

--- Increased creepage distance, clearance and penetration distance (see Chapter 26);

--- Added Appendix K (see Appendix K).

This section uses the redrafting method to modify the IEC 61558-2-16:2013 "power supply voltage of 1100V and below transformers, electricity

Safety of equipment, power supply units and similar products - Part 2-16. Particulars of transformers for switch-type power supply units and switch-type power supply units

Requirements and Tests.

The technical differences between this part and IEC 61558-2-16:2013 and their reasons are as follows.

---About the normative reference documents, this part has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

\* Retained the technical differences between GB/T 19212.1-2016 and IEC 61558-1:2009 in Chapter 2, so that

Used in conjunction with GB/T 19212.1-2016;

\* Replace IEC 60950-1 with GB 4943.1 modified to international standards (see Chapter 1);

\* Removed IEC 60227 (all parts);

\* Added GB/T 19212.1-2016 (see Chapters 14 and 19.1) and GB/T 16935.5-2008 (see Chapter 26) to

Easy to use.

--- Change the three voltage multiples of the international standard 19.1.1.3 to 1.06 to 1.1 in order to meet the actual situation in China.

This section also made the following editorial changes.

--- In order to meet the unified numbering of GB/T 19212 series standard, change the standard name to "change of power supply voltage of 1100V and below"

Safety of compressors, reactors, power supply units and similar products - Part 17.

Switching power supply units and switching power supply units

Special requirements and tests for transformers;

--- Adjusted the table and figure number of the international standard;

--- Removed the headings of international standards 26.105 and 26.106 to unify the standard structure;

--- References added IEC 60851-5.1988 and IEC 61558-2-17.1997.

This part was proposed by China Electrical Equipment Industry Association.

This part is composed of the National Standardization Technical Committee for Small Power Transformers, Reactors, Power Supply Units and Similar Products (SAC/TC418).

Return to the mouth.

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## Introduction

This section will allow the use of fully insulated winding wires (FIW wires) in a switched-mode power supply unit (SMPS).

Manufacturers should be aware that the FIW line may be damaged during production and transportation.

Transformer with a power supply voltage of 1100V or less,

Safety of reactors, power supplies and similar products

Part 17. Switching power supply units and switch type

Special requirements and tests for transformers for power supply units

## 1 Scope

This chapter of GB/T 19212.1-2016 is replaced by the following.

This part of GB/T 19212 specifies the safety requirements for transformers for switched-mode power supplies and switch-mode power supplies. With electronics