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

**GB 19212.5-2011**

Replacing GB 19212.5-2006

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**Safety of transformers, reactors, power supply units and similar products for supply  
voltages up to 1 100 V - Part 5: Particular requirements and tests for isolating  
transformers and power supply units incorporating isolating transformers**

电源电压为1 100 V及以上的变压器、电抗器、电源装置和类似产品的安全 第5部  
分：隔离变压器和内装隔离变压器的电源装置的特殊要求和试验

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## 1 Scope

This clause of GB 19212.1-2008 is replaced by the following content.

The part sets the safety requirements for general purpose isolating transformers and for power supply units incorporating general purpose isolating transformers. Transformers with electronic circuits are also included. A note states that electrical, thermal and mechanical safety are covered.

Unless otherwise specified, the word transformer below covers general purpose isolating transformers and power supply units incorporating general purpose isolating transformers. A second note states that the part applies to linear power supply units, and that for switch mode power supply units both IEC 61558-2-16 and the part apply.

The part applies to stationary or portable, single-phase or polyphase, air-cooled, either naturally or forced, dry-type transformers for independent or associated use, whose windings may be encapsulated or non-encapsulated.

The rated supply voltage does not exceed 1 100 V a.c., and the rated frequency and the internal operating frequency do not exceed 500 Hz.

The rated output does not exceed 25 kVA for single-phase transformers and 40 kVA for polyphase transformers. Where the purchaser and the manufacturer agree otherwise, the part also applies to transformers with no limit on the rated output. A note states that the scope does not cover transformers intended for distribution networks.

The no-load output voltage or the rated output voltage exceeds 50 V a.c. or 120 V ripple-free d.c. and, where applicable, does not exceed 500 V a.c. or 708 V ripple-free d.c. In particular cases the no-load output voltage or the rated output voltage may be as high as 1 000 V a.c. or 1 415 V ripple-free d.c.

The part does not apply to the external circuits and their components that are intended to be connected to the input and output terminals of the transformer. It does apply to transformers for which the insulation between circuits is required to be double or reinforced insulation by the installation rules or the equipment specification.

A further note draws attention to the following: additional requirements may be needed for transformers intended for use in vehicles, on board ships or in aircraft, in accordance with the applicable standards and national regulations; measures to protect the enclosure and the components inside it from external influences such as mould, insects, termites, solar radiation and icing should also be considered; the different conditions of transport, storage

and operation of the transformer should also be considered; and for transformers intended for special environments, such as tropical environments, additional requirements complying with other applicable standards and national regulations may be adopted. A final note states that as transformer technology develops, the upper frequency limit may need to be raised, and that until then the part may be used as a guide.

## 2 Normative references

Apart from the reference listed below, this clause of GB 19212.1-2008 applies.

The clause adds the following reference: GB 19212.1-2008, Safety of power transformers, power supply units, reactors and similar products - Part 1: General requirements and tests, together with its amendment number 1.

## 3 Terms and definitions

This clause of GB 19212.1-2008 applies.

## 4 General requirements

This clause of GB 19212.1-2008 applies.

## 5 General notes on tests

This clause of GB 19212.1-2008 applies.

## 6 Ratings

Apart from the subclauses listed below, this clause of GB 19212.1-2008 applies. The clause adds the following subclauses.

The rated output voltage is to exceed 50 V a.c. or 120 V ripple-free d.c., but is not to exceed: 250 V a.c. for portable single-phase transformers; 400 V a.c. for portable polyphase transformers; and 500 V a.c. or 708 V ripple-free d.c. for other transformers. In the last case the rated output voltage may be as high as 1 000 V a.c. or 1 415 V ripple-free d.c. in order to comply with national wiring rules or for special purposes, and this output voltage limit also applies where output windings that are not intended to be interconnected are connected in series.

The rated output is not to exceed 25 kVA for single-phase transformers and 40 kVA for polyphase transformers. Where the purchaser and the manufacturer agree otherwise, the rated output need not be limited.

The rated supply frequency and the internal operating frequency are not to exceed 500 Hz, and the rated supply voltage is not to exceed 1 100 V a.c.

Compliance with these requirements is checked by visual inspection of the marking.

## 7 Classification

This clause of GB 19212.1-2008 applies.

## 8 Marking and other information

Apart from the subclauses listed below, this clause of GB 19212.1-2008 applies.

In item h) of 8.1 the first sentence is replaced by the following: the relevant graphical symbol shown in 8.11 that denotes this kind of transformer.

Subclause 8.11 has content added to it. That added content falls outside the pages available.

### Note on the standard designation

The cover of the document carries the designation GB 19212.5-2011/IEC 61558-2-4:2009, without the letter T. The foreword confirms this by stating that the whole of the technical content of this part of GB 19212 is mandatory. The document is therefore a mandatory GB standard and not a recommended GB/T standard, and the code field above follows the cover.

The catalogue key used for this record, GBT19212.5-2011, is the one under which the source pages were supplied and has been left unchanged so that the record can still be traced back to them.

### Relationship to previous standards and to IEC 61558-2-4:2009

The foreword states that GB 19212, Safety of power transformers, power supply units, reactors and similar products, is divided into a number of parts, and lists parts 1 to 10, 13 to 18, 20, 21 and 24; other parts are under consideration. This document is part 5 of GB 19212 and was drafted according to the rules given in GB/T 1.1-2009.

A footnote to the list records an inconsistency in the series: some parts are published under the title Safety of power transformers, power supply units, reactors and similar products, others under the title Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V, and the title of the series may be modified again in future publications.

The part was drawn up on the basis of GB 19212.1-2008 and is to be used together with GB 19212.1-2008 and its amendment. It supplements and modifies the corresponding clauses and subclauses of GB 19212.1-2008 so as to convert the content of GB 19212.1-2008 into the content of this part, and the content newly added by this part with