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Power semiconductor converters — Electrical test methods

半导体电力变流器电气试验方法

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Power semiconductor converters — Electrical test methods

1 Subject content and scope of application

This standard specifies test conditions, test general provisions and test procedures for the semiconductor current transformer electrical test methods.

This standard is used for various types of current transformer (including rectifiers, inverters and current transformer combined with these two operation modes and all kinds of electronic power switches) test methods, as for test project should be carried out should be specified respectively in respective product standards inspection rules.

This standard set up provision on common problems for various current transformer electrical tests, special problems concerning various current transformers can be specified in such current transformer classification standards or other standards.

This standard does not apply to current transformer for vehicles and onboard current transformer for aircraft electric equipment.

2 Normative reference

GB 3859 Power semiconductor converters

GB 7678 Semiconductor self commutated current transformer

GB 2900.33 Electrotechnical terminology Current transformer

GB 4064 Safety design guideline of electrical equipment

3 Terms

3.1 d. c. ripple factor

It is the ratio of the half difference between the maximum and minimum of pulsating flow straight to its average value.

3.2 Distortion factor (relative harmonic content) (GB 2900. 33 Article 6.14)

It is the ratio of root-mean-square value of harmonic content to root-mean-square value of alternating quantity.

3.3 Harmonic content (GB 7678 Article1.6.4)

The amount obtained by subtracting fundamental component from alternating quantity.

3.4 (Power) efficiency

It is the ratio of output (active) power to input (active) power.

Note: When the rectifier (power) efficiency is calculated, the power generated by DC side ripple current should be included in the DC power. The variable flow factor does not consider the power generated by the ripple current. Thus, in terms of AC-DC conversion, variable flow factor ratio is less than (power) efficiency.

3.5 Conversion factor

Ratio of product of fundamental wave output power or DC output voltage and the current average value to product of AC side fundamental wave power or DC input voltage and the current average value.

3.6 Unbalance factor (GB 7678 Article 1.29)

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