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

GB/T 18802.321-2007

**Components for low-voltage surge protective devices -- Part
321: Specifications for avalanche breakdown diode (ABD)**

低压电涌保护器件 第321部分：雪崩击穿二极管（ABD）规范

(English Translation)

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Foreword

GB/T 18802 "Low Voltage Surge Protector (SPD)" series of standards structure and name are expected as follows.

- Low-voltage distribution systems with a surge protector (SPD) - Part 1. Performance requirements and test methods (GB 18802.1-2002 /IEC 61643-1:1998);
- Low-voltage distribution systems with a surge protector (SPD) - Part 12. Guidelines for selection and use;
- Low-voltage surge protective devices - Part 21. telecommunications and signaling networks using low-voltage surge protection device (SPD) --- Performance requirements and tests the method (GB/T 18802.21-2004/IEC 61643-21:2000);
- Low voltage surge protector Part 22. telecommunications and signaling networks using low-voltage surge protection device (SPD) --- selection and use Guidelines;
- Voltage surge protective devices - Part 311. Gas Discharge Tubes (GDT) specification;
- Voltage surge protective devices - Part 321. avalanche breakdown diode (ABD) specification (GB/T 18802.321-2007 /IEC 61643-321:2001);
- Voltage surge protective devices - Part 331. varistor (MOV) specification;
- Voltage surge protective devices - Part 341. thyristor surge suppression (TSS) specification.

This section identical with IEC 61643-321:2001 "low-voltage surge protection device avalanche breakdown diode specification." In the technical content and the structure of the text and IEC 61643-321:2001 same.

IEC 61643-321:2001 Normative standards listed in the document, although some parts of the country have been transformed into national standards, but conversion Complexity, inconvenience references, so this part is still using the IEC standard.

For ease of use, this section made the following editorial changes.

- a) with a decimal point ' '. Instead of a comma as the decimal point, ' ';
- b) Remove the preface to international standards.

This part is proposed by the China Electrical Equipment Industrial Association.

This part of the National Standardization Technical Committee arrester (SAC/TC81) centralized.

This section is drafted. Ceramic Institute, Xi'an, Xi'an Power Electronics Research Institute.

1 Scope

This section applies to surge protective devices (abbreviated SPDC) avalanche breakdown diode (ABD). Design and manufacture of surge protectors and low-voltage distribution systems, transmission systems, communication network connected to the system.

This section applies to a single test specification ends ABD. ABD can be packaged in a plurality of the envelope as a single diode unit Member. The components of each diode can be tested in accordance with this section.

This section contains a series of test methods for electrical properties of ABD. This part of the test method used to verify or measure specific package Ratings and characteristics of the design value of ABD.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this section, however, encourage the parties to this part of the research agreement Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

Environmental testing IEC 60068 (all parts) Electrical installations of buildings IEC 60364 (all parts) IEC 60364-3:1993 Electrical installations of buildings - Part 3. General features Assessment Classification of environmental conditions IEC 60721 (all parts) IEC 60747-2:2000 Semiconductor devices - Discrete devices and integrated circuits - Part 2.

Rectifier diodes IEC 60749:1996 Semiconductor devices - Mechanical and climatic test methods

3 Terms, definitions and symbols

The following terms, definitions and letter symbols apply to this section.

Note: This chapter applies to the definition of the SPDC ABD, having symmetrical and asymmetrical voltage - current (V_p - I) characteristics. This chapter defines the terms for a one-way device (See Figure 1), in consideration of bidirectional ABD, concerning the definition of the third quadrant is applicable to both directions V_p - I characteristic curve.

Used to suppress transient voltage and surge current shunt device. It may also be encapsulated together by a plurality of devices having a common terminal both ends of the diode.

V_p C

When applying a predetermined peak pulse current IPP waveform, ABD peak voltage measured across.

Note: Due to the heat, the reaction force or other effects, peak voltage and peak pulse current position does not have to coincide in time. Also represented by V_p CL.

IPPM

It can be applied without causing failure of the diode peak pulse current IPP rated maximum.

Note: Unless otherwise specified, the surge waveform for the diode characteristics of 10/1000 μ s.

GB/T 18802.321-2007/IEC 61643-321:2001