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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 27746-2025

Replacing GB/T 27746-2011

Technical specification for metal oxide varistors (MOV) used in low-voltage apparatus

低压电器用金属氧化物压敏电阻器（MOV）技术规范

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Standardization Administration of the PRC

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 27746-2011 "Technical Specification for Metal Oxide Varistors (MOVs) for Low-Voltage Electrical Appliances" and is consistent with... Compared with GB/T 27746-2011, apart from structural adjustments and editorial changes, the main technical changes are as follows:

---Added the terms and definitions for "varistor voltage," "AC leakage current," and "DC leakage current" (see 3.1.11, 3.1.16, and 3.1.17);

---Added rated standard values for leaded high-voltage MOVs with nominal varistor voltages of 1400V, 1600V, and 1800V. (See Table 4);

---The temperature-voltage stress stability test has been removed (see

7.2.7 in the.2011 edition). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Electrical Equipment Industry Association. This document is under the jurisdiction of the National Technical Committee on Standardization of Low Voltage Electrical Appliances (SAC/TC189). This document was drafted by: Shanghai Electrical Apparatus Research Institute, Changzhou Chuangjie Lightning Protection Electronics Co., Ltd., and Suzhou Yieryi Electrical Manufacturing Co., Ltd. The company, Yunnan Xingsheng Electric Power Technology Co., Ltd., Hangzhou Breco Electric Co., Ltd., and Shanghai University of Electric Power. The main drafters of this document are. Jia Feng, Shu Jing, Li Chengli, Yao Guojun, Jiang Zhuangxian, and Bian Xiaoyan. The release history of this document and the document it replaces is as follows:

---First published in.2011 as GB/T 27746-2011;

---This is the first revision.

Low-voltage electrical appliances operate in circuits with a rated AC voltage of 1000V, DC voltage of 1500V and below, and are used for circuit switching and control. Electrical appliances that perform detection, protection, transformation, and regulation functions are fundamental components of complete sets of electrical equipment, used in large quantities and with wide applications. Low-voltage electrical... When used in a circuit, the device inevitably encounters lightning overvoltages, switching overvoltages, and electrostatic discharges conducted from the circuit. These overvoltages can... Overvoltage can cause arcing at electrical contacts, accelerate the aging and damage of device insulation, or interfere with adjacent circuits. Therefore, overvoltage suppression devices must be used to limit these overvoltages. Within safe limits. Currently, metal oxide varistors (MOVs) are

widely used and economical in low-voltage electrical appliances for suppressing overvoltages. Device. This document, based on the application environment and specific usage of low-voltage electrical appliances, proposes technical requirements for MOVs that meet the usage requirements of low-voltage electrical appliances. This document outlines requirements, test methods, and inspection rules. Its purpose is to provide technical guidance for manufacturers and users of MOVs for low-voltage electrical applications. The guide coordinates the requirements of both parties to ensure that the MOV can achieve the intended protection function in low-voltage electrical appliances. Metal oxide varistor for low-voltage electrical appliances Resistor (MOV) Technical Specifications

1 Scope

GB/T 27746-2025 is the Chinese national standard covering the varistor that absorbs surges - the clamping voltage and the energy it can take, the leakage current and the degradation with each surge absorbed, and the thermal runaway at end of life that is why a thermal disconnector is fitted with it. At 20,000 words. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 27746-2011.

This document applies to electrical equipment with AC voltage not exceeding 1000V (RMS), 50/60Hz and/or DC voltage not exceeding 1500V. Metal oxide varistors (hereinafter referred to as "MOVs") are used to suppress transient overvoltages to protect the safety of electrical equipment. The purpose of this document is to specify the use of MOVs in low-voltage electrical appliances.

---Classification;

--- Rated value;

---Usage conditions;

---Technical Requirements;

---Experimental methods;

---Inspection rules. Metal oxide varistors for low-voltage surge protectors comply with the requirements of GB/T 18802.331.

Note. This document can be used as a reference for electrical appliances with a rated AC voltage of 1140V. Performance requirements for electrical appliances shall be determined through negotiation between the manufacturer and the user.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this

document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 2423.3-2016 Environmental Testing - Part