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

GB/T 42736-2023

Heat-shrinkable semiconductive polyolefin sleeving

半导体聚烯烃热收缩管

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting: This document is modified to adopt IEC 60684-3-281:2010 "Insulated hoses Part 3: Specifications for various types of hoses Part 281: Half Conductive Polyolefin Heat Shrink Tubing": Compared with IEC 60684-3-281:2010, this document has made the following structural adjustments:

--- Added Chapter 3 "Terms and Definitions";

---Chapter 5 corresponds to Chapter 1, Chapter 5 and Table 1 and Table 2 of IEC 60684-3-281:2010, of which 5:1 corresponds to IEC 60684-3- 281:2010, the third paragraph to the sixth paragraph of Chapter 1, 5:2 corresponds to Chapter 5 of IEC 60684-3-281:2010;

---Chapter 6 corresponds to the test method in column 2 and the remarks in column 6 in Table 1 of IEC 60684-3-281:2010;

4 The third paragraph corresponds to Chapter 6 of IEC 60684-3-283:2010;

--- Deleted Chapter 3 of IEC 60684-3-283:2010;

--- Added Chapter 7 "Inspection Rules" and Chapter 8 "Marking, Packaging, Transportation and Storage": The technical differences between this document and IEC 60684-3-281:2010 and their reasons are as follows:

--- Deleted the seventh paragraph of Chapter 1 "For medium-voltage cable accessories, it must be verified in accordance with HD629 and IEC 60502 series standards "Electrical performance after assembly" to meet my country's national conditions and facilitate application;

--- IEC 60502 (all parts), IEC 60757:1983 and HD629 referenced normatively have been deleted in order to conform to my country's national conditions and facilitate for application;

---Deleted "name", "description, IEC standard number, type, size, color" and "storage dimensional stability" related content, in order to comply with my country's national conditions, easy to apply;

--- The normative reference document GB/T 2828:1-2012 (see 7:3) has been added to meet the technical conditions of our country and facilitate application;

---Replace IEC 60684-2:1997 Amd1:2003 Amd2:2005 with the normative reference GB/T 7113:2-2014 (see Chapter 6), the degree of consistency between the two documents is modified to meet the technical conditions of our country and facilitate application;

--- Changed the "length change", changed "-10" to the minimum value; changed the "volume resistivity", changed the "minimum value" to "maximum Value" (see Table 1), in order to meet the technical conditions of our country and facilitate application;

--- Increase the test temperature tolerance of "low temperature bendability" and the completion test time of "fluid resistance" (see 6:4 and 6:7) to meet I national conditions, easy to apply;

1 Scope

GB/T 42736-2023 specifies heat-shrinkable semiconductive polyolefin sleeving, adopting IEC 60684-3-281 with modifications. Semiconductive sleeving is not insulation and not a conductor: it is loaded with carbon black to a controlled resistivity so that it grades the electric field at the end of a cable screen, where the field would otherwise concentrate and start discharging into the insulation. A resistivity out of specification either fails to grade the field or lets current flow, so the electrical property is the whole point of the product. The standard sets the test conditions, the general and performance requirements, and the test methods for inner diameter, wall thickness and concentricity, thermal shock, longitudinal change, low temperature bending and thermal ageing, followed by the inspection classification, items, batching and sampling plan. It took effect on 1 December 2023.

This document specifies the technical requirements, test methods, inspection rules and marking, packaging, transportation and storage: This document applies to semi-conductive polyolefin heat-shrinkable tubing with a nominal shrinkage ratio of 3:1 and a maximum service temperature of 100°C:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for

undated reference documents, the latest version (including all amendments) is applicable to this document:

GB 2536-2011 Unused mineral insulating oils for electrical fluid transformers and switches (IEC 60296:2003, MOD)

Note: There is no technical difference between the referenced content of

GB 2536-2011 and the referenced content of IEC 60296:2003:

GB/T 2828:1-2012 Counting sampling inspection procedure Part 1: Batch-by-batch inspection sampling retrieved by acceptance quality limit (AQL) Plan (ISO 2859-1:1999, IDT)

GB/T 7113:1-2014 Insulating hoses - Part 1: Definitions and general requirements (IEC 60684-1:2003, MOD)

Note: There is no technical difference between the referenced content of

GB/T 7113:1-2014 and the referenced content of IEC 60684-1:2003:

GB/T 7113:2-2014 Insulating hoses - Part 2: Test methods (IEC 60684-2:2003, MOD)

3 Terms and Definitions

This document does not have terms and definitions that need to be defined:

4 Test conditions

In the absence of regulations, semi-conductive polyolefin heat-shrinkable tubes should be shrunk at: $200^{\circ}\text{C} \pm 3^{\circ}\text{C}$ in an oven with forced air circulation Test after 10min $\pm$ 1min:

5 Technical Requirements

1 General requirements Semiconductive polyolefin heat shrink tubing is divided into two types: Type A (thin wall) and Type B (medium wall), and the inner diameter of Type A (thin wall) usually does not exceed 195:0mm, the inner diameter of type B (middle wall) usually does not exceed 120:0mm: The color is generally black, see Appendix A for inner diameter and wall thickness, and can also be determined by The supply and demand sides negotiate to determine: In special application cases, the selection of materials should fully meet the performance requirements in the application, rather than just based on this document: 5:

2 General and performance requirements In addition to the general requirements specified in GB/T 7113:1-2014, the semi-conductive polyolefin heat shrinkable tube should also meet the requirements of Table 1 and Table 2: