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IS/IEC 60738-1: 2022
[*Superseding* IS 11534 (Part 1) : 1985
and IS/*QC 440000: 1994*]

BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

Draft Indian Standard

Thermistors – Directly heated positive temperature coefficient – Part 1 Generic specification

मसौदा भारतीय मानक

थर्मिस्टर – प्रत्यक्ष तापित घनात्मक तापमान गुणांक – भाग 1 सामान्य विशिष्टि

ICS 31.040.30

LITD 05 Semiconductor Devices Components and Electronic Assembly Technology Sectional Committee	Last date for comments: 20 October 2023

NATIONAL FOREWORD

(Formal clauses will be added later)

This Indian Standard (Part 1) which is identical with IEC 60738-1: 2022 'Thermistors – Directly heated positive temperature coefficient – Part 1: Generic specification' issued by the International Electrotechnical Commission (IEC) *will be* adopted by the Bureau of Indian Standards on recommendation of the Semiconductor Devices Components and Electronic Assembly Technology Sectional Committee and approval of the Electronics and Information Technology Division Council.

IS 11534 (Part 1) was published in: 1985 was largely based on IEC Pub 738-1 (1982). IS/QC 440000 was published in 1994 was identical to IEC Pub 738-l/QC 440000 (1982). This superseding of Standards is being done to combine the above mentioned standards and to align

it with the latest version of IEC 60738-1: 2022. On publication of this standards IS 11534 (Part 1): 1985 and ISQC 440000: 1994 stands withdrawn.

The text of IEC Standard may be approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

International Standards	Corresponding Indian Standard	Degree of Equivalence
IEC 60027 (all parts) Letter symbols to be used in electrical technology	IS 3722 (Part 1 & 2) : 1983 Letter symbols and signs used in electrical technology Part 1 General guidance on symbols and subscripts	Technically Equivalent
IEC 60050 (all parts) International electrotechnical vocabulary	IS 1885 (all parts) Electrotechnical Vocabulary	Identical
IEC 60068-1: 2013 Environmental testing – Part 1: General and guidance	IS/IEC 60068-1 : 2013 Environmental testing – Part 1: General	Identical
EC 60068-2-1:2007 Environmental testing – Part 2-1: Tests – Test A: Cold	IS/IEC 60068-2-1 : 2007 Environmental Testing Part 2 Tests Section 1 Test A: Cold	Identical
IEC 60068-2-2:2007 Environmental testing – Part 2-2: Tests – Test B: Dry heat	IS/IEC 60068-2-2 : 2007 Environmental Testing Part 2 Tests Section 2 Test B Dry Heat	Identical

IEC 60068-2-6 Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)	IS/IEC 60068-2-6 : 2007 Environmental Testing Part 2 Tests Section 6 Test Fc: Vibration sinusoidal	Identical with IEC 60068-2-6 : 2007
IEC 60068-2-11 Environmental testing – Part 2: Tests – Test Ka: Salt mist	IS 9000 (Part 11) : 1983 Basic environmental testing procedures for electronic and electrical items: Part 11 salt mist test	Technically Equivalent
IEC 60068-2-13 Basic environmental testing procedures – Part 2-13: Tests – Test M: Low air pressure	IS/IEC 60068-2-13 : 2021 Environmental Testing Part 2 Tests Section 13 Test M: Low air pressure	Identical with IEC 60068-2-13:2021
IEC 60068-2-14 Environmental testing – Part 2-14: Tests – Test N: Change of temperature	IS/IEC 60068-2-14 : 2009 Environmental testing Part 2: Tests Section 14: Test N: Change of temperature	Identical with IEC 60068-2-14 : 2009
IEC 60068-2-20 Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads	IS / IEC 60068-2-20:2021 Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads	Identical
IEC 60068-2-21 Environmental testing — Part 2: Tests — Test U: Robustness of terminations and integral mounting devices	IS/IEC 60068-2-21:2021 Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices (Under Development)	Identical with IEC 60068-2-21:2021
IEC 60068-2-27 Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock	IS 9000 (Part 7/Sec 1) : 2018 Basic environmental testing procedures for electronic and electrical items: Part 7 impact test: Sec 1 shock (Test Ea) (Second Revision)	Identical with IEC 60068-2-27: 2008
IEC 60068-2-30 Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)	IS/IEC 60068-2-30:2005 Environmental testing Part 2 Tests Section 30 Test Db: Damp heat cyclic 12 h 12 h cycle (Under Development as LITD 01/21908)	Identical with IEC 60068-2-30:2005

IEC 60068-2-58 Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	IS/ IEC 60068-2-58 : 2015 Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	Identical
IEC 60068-2-78 Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state	IS 9000 (Part 4) : 2020 Environmental Testing Part 4 Tests - Test Cab: Damp Heat, Steady State (Second Revision)	Identical with IEC 60068-2-78: 2012
IEC 60294 Measurement of the dimensions of a cylindrical component with axial terminations	IS 13554:2020 Measurement of the Dimensions of a Cylindrical Component with Axial Terminations (First Revision)	Identical with IEC 60294 : 2012
IEC 60440:2012 Method of measurement of non-linearity in resistors	IS/IEC 60440:2012 Method of measurement of non-linearity in resistors (superseding IS 13504)	Identical (Under WC LITD 05 (18465)
IEC 60695-11-5 Fire hazard testing – Part 11-5: Test flames – Needle-flame test method –	IS 11000 (Part 2/Sec 2) : 2008 Fire hazard testing: Part 2 Test methods, Section 2 Needle-flame test method — Apparatus, confirmatory test arrangement and Guidance	Identical with IEC 60695-11-5: 2004
ISO 80000-1 Quantities and units – Part 1: General	IS/ISO 80000-1 : 2022 Quantities and Units Part 1 General	Identical

The technical committee has reviewed the provisions of the following International Standard referred in this adopted draft standard and has decided that it is acceptable for use in conjunction with this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

International Standard	*Title*
IEC 60617	Graphical symbols for diagrams
IEC 60717	Method for determination of the space required by capacitors and resistors with unidirectional terminations

IEC 61193-2	Quality assessment systems – Part 2: Selection and use of sampling plans for inspection of electronic components and packages
IEC 61249-2-7	Materials for printed boards and other interconnecting structures – Part 2-7: Reinforced base materials clad and unclad – Epoxide woven E-glass laminated sheet of defined flammability (vertical burning test), copper-clad
IEC 61760-1	Surface mounting technology – Part 1: Standard method for the specification of surface mounting components (SMDs)

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 'Rules for rounding off numerical values *(Second Revision)*'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Scope of IEC 60738-1: 2022

"This part of IEC 60738 describes terms and methods of test for positive step-function temperature coefficient thermistors, insulated and non-insulated types typically made from ferro-electric semi-conductor materials.

It establishes standard terms, inspection procedures and methods of test for use in detail specifications for Qualification Approval and for Quality Assessment Systems for electronic components."

Note: - The Technical content of this document has not been enclosed as these are identical with the corresponding IEC Standard. For details please refer to IEC 60738-1: 2022 or kindly contact.

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