Polymeric thermistors - Directly heated positive step function temperature coefficient Part 1: Generic specification

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 62319-1:2005 sisaldab Euroopa standardi EN 62319-1:2005 ingliskeelset teksti.	This Estonian standard EVS-EN 62319-1:2005 consists of the English text of the European standard EN 62319-1:2005.
Standard on kinnitatud Eesti Standardikeskuse 27.04.2005 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 27.04.2005 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 11.03.2005.	Date of Availability of the European standard text 11.03.2005.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 31.040.30

Võtmesõnad:

EUROPEAN STANDARD **EN 62319-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM March 2005

ICS 31.040.30

English version

Polymeric thermistors - Directly heated positive step function temperature coefficient Part 1: Generic specification

(IEC 62319-1:2005)

Thermistances polymères - Coefficient de température positif de fonction échelon à chauffage direct Partie 1: Spécification générique (CEI 62319-1:2005)

Temperaturabhängige Widerstände aus Polymerwerkstoffen - Direkt geheizte temperaturabhängige Widerstände mit positivem Temperaturkoeffizienten Teil 1: Fachgrundspezifikation (IEC 62319-1:2005)

This European Standard was approved by CENELEC on 2005-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 62319-1:2005 E

Foreword

The text of document 40/1505/FDIS, future edition 1 of IEC 62319-1, prepared by IEC TC 40, Capacitors and resistors for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62319-1 on 2005-02-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2005-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2008-02-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 62319-1:2005 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60027-1	- [1)]	Letter symbols to be used in electrical technology Part 1: General	HD 60027-1	2004 [2)]
IEC 60050	Series	International Electrotechnical Vocabulary	EN 60050	Series
IEC 60068-1	- [1)]	Environmental testing Part 1: General and guidance	EN 60068-1	1994 [2)]
IEC 60068-2-6	- [1)]	Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995 [2)]
IEC 60068-2-14	- [1)]	Part 2: Tests - Test N: Change of temperature	EN 60068-2-14	1999 [2)]
IEC 60068-2-20	- [1)]	Part 2: Tests - Test T: Soldering	HD 323.2.20 S3	1988 [2)]
IEC 60068-2-21	- [1)]	Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21	1999 [2)]
IEC 60068-2-27	- [1)]	Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993 [2)]
IEC 60068-2-29	- [1)]	Part 2: Tests - Test Eb and guidance: Bump	EN 60068-2-29	1993 [2)]
IEC 60068-2-45	- [1)]	Part 2: Tests - Test Xa and guidance: Immersion in cleaning solvents	EN 60068-2-45	1992 [2)]
IEC 60294	- [1)]	Measurement of the dimensions of a cylindrical component having two axial terminations	-	-
IEC 60410	- [1)]	Sampling plans and procedures for inspection by attributes	-	-
IEC 60617	database	Graphical symbols for diagrams	-	-

[1)] Undated reference.

[2)] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IECQ 001002-3	- [1)]	IEC Quality Assessment System for Electronic Components (IECQ) - Rules of Procedure Part 3: Approval procedures	-	-
IECQ 001003	- [1)]	IEC Quality Assessment System for Electronic Components (IECQ) - Guidance documents	-	-
ISO 1000	- [1)]	SI units and recommendations for the use of their multiples and of certain other units	-	-

INTERNATIONAL STANDARD

IEC 62319-1

First edition
2005-02

Polymeric thermistors –
Directly heated positive step function temperature coefficient –

Part 1:
Generic specification

Reference number
IEC 62319-1:2005(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

Further information on IEC publications

The technical content of IEC publications is kept under constant review by the IEC, thus ensuring that the content reflects current technology. Information relating to this publication, including its validity, is available in the IEC Catalogue of publications (see below) in addition to new editions, amendments and corrigenda. Information on the subjects under consideration and work in progress undertaken by the technical committee which has prepared this publication, as well as the list of publications issued, is also available from the following:

- **IEC Web Site (www.iec.ch)**

- **Catalogue of IEC publications**

  The on-line catalogue on the IEC web site (www.iec.ch/searchpub) enables you to search by a variety of criteria including text searches, technical committees and date of publication. On-line information is also available on recently issued publications, withdrawn and replaced publications, as well as corrigenda.

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Polymeric thermistors – Directly heated positive step function temperature coefficient –

Part 1: Generic specification

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

POLYMERIC THERMISTORS – DIRECTLY HEATED POSITIVE STEP FUNCTION TEMPERATURE COEFFICIENT –

Part 1: Generic specification

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62319-1 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
40/1505/FDIS	40/1534/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

POLYMERIC THERMISTORS – DIRECTLY HEATED POSITIVE STEP FUNCTION TEMPERATURE COEFFICIENT –

Part 1: Generic specification

1 General

1.1 Scope

This part of IEC 62319 prescribes terms and methods of test for polymeric positive temperature coefficient thermistors, insulated and non-insulated types, typically intended for use in current limiting and overcurrent protection applications.

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.

1.2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60027-1: *Letter symbols to be used in electrical technology – Part 1: General*

IEC 60050: *International Electrotechnical Vocabulary*

IEC 60068-1: *Environmental testing – Part 1*: *General and guidance*

IEC 60068-2-6: *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14: *Environmental testing – Part 2: Tests – Test N: Change of temperature*

IEC 60068-2-20: *Environmental testing – Part 2: Tests – Test T: Soldering*

IEC 60068-2-21: *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 60068-2-27: *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

IEC 60068-2-29: *Environmental testing – Part 2: Tests – Test Eb and guidance: Bump*

IEC 60068-2-45: *Environmental testing – Part 2: Tests – Test XA and guidance: Immersion in cleaning solvents*

IEC 60294: *Measurement of the dimensions of a cylindrical component having two axial terminations*

IEC 60410: *Sampling plans and procedures for inspection by attributes.*

IEC 60617-DB: 2001[1] G*raphical symbols for diagrams*

IECQ 001003: *IEC Quality Assessment System for Electronic Components – Guidance documents*

IECQ 001002-3: *IEC Quality Assessment System for Electronic Components – Rules of Procedure – Part 3: Approval procedures*

ISO 1000: *SI units and recommendations for the use of their multiples and of certain other units*

2 Technical data

2.1 Units and symbols

Units, graphical symbols, letter symbols and terminology shall, whenever possible, be taken from the following documents:

IEC 60027

IEC 60050

IEC 60617

ISO 1000

The following subclauses contain additional terminology applicable to thermistors.

Where further items are required they shall be derived in accordance with the principles of the documents listed above.

2.2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.2.1
thermistor
thermally sensitive semiconducting resistor whose primary function is to exhibit an important change in electrical resistance with a change in body temperature

2.2.2
positive temperature coefficient thermistor
thermistor in which the resistance increases with increasing temperature throughout the useful part of its characteristic. The PTC thermistors covered in this specification typically exhibit a very sharp increase in resistance over a narrow temperature range

2.2.3
directly heated positive temperature coefficient thermistor
thermistor in which the change in temperature is obtained either by the flow of current through the thermo-sensitive element, or by a change in ambient temperature, or by a combination of both of these means

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[1] "DB" refers to the IEC on-line database.