
Thermistors - Directly heated positive step-function temperature coefficient -
Part 1-2: Blank detail specification - Heating element application -
Assessment EZ (IEC 60738-1-2:1998)

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ICS 31.040.30

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Referenčna številka
SIST EN 60738-1-2:2002(en)

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English version

**Thermistors - Directly heated positive step-function temperature coefficient
Part 1-2: Blank detail specification - Heating element application
Assessment level EZ
(IEC 60738-1-2:1998)**

Thermistances à basculement à coefficient de température positif à chauffage direct
Partie 1-2: Spécification particulière cadre - Application aux éléments chauffants - Niveau d'assurance EZ (CEI 60738-1-2:1998)

Direkt geheizte temperaturabhängige Widerstände mit positivem Temperaturkoeffizienten
Teil 1-2: Vordruck für Bauartspezifikation: Anwendung als Heizelement
Qualitätsbewertungsstufe EZ (IEC 60738-1-2:1998)

This European Standard was approved by CENELEC on 1999-01-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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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

Foreword

The text of document 40/1082/FDIS, future edition 1 of IEC 60738-1-2, 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 60738-1-2 on 1999-01-01.

This European Standard supersedes EN 144002:1994.

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) 1999-10-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2001-10-01

This EN 60738-1-2 is to be used in conjunction with EN 60738-1:1999.

Endorsement notice

The text of the International Standard IEC 60738-1-2:1998 was approved by CENELEC as a European Standard without any modification.

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INTERNATIONAL STANDARD

IEC 60738-1-2

QC 440002

First edition
1998-12

**Thermistors –
Directly heated positive step-function
temperature coefficient –**

**Part 1-2:
Blank detail specification –
Heating element application – Assessment level EZ**

*Thermistances à basculement à coefficient de température
positif à chauffage direct –*

*Partie 1-2:
Spécification particulière cadre –
Application aux éléments chauffants –
Niveau d'assurance EZ*

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Commission Electrotechnique Internationale
International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

THERMISTORS –

DIRECTLY HEATED POSITIVE STEP-FUNCTION TEMPERATURE COEFFICIENT –

Part 1-2: Blank detail specification –

Heating element application – Assessment level EZ

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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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- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60738-1-2 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

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

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FDIS	Report on voting
40/1082/FDIS	40/1098/RVD

<https://standards.iteh.ai/catalog/standards/sist/70208958-6060-45a8-b395-712eacc8e407/sist-en-60738-1-2-2002>

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

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

THERMISTORS –
DIRECTLY HEATED POSITIVE STEP-FUNCTION
TEMPERATURE COEFFICIENT –
Part 1-2: Blank detail specification –
Heating element application – Assessment level EZ

Introduction**Blank detail specification**

A blank detail specification is a supplementary document to the generic specification and contains requirements for style and layout and minimum content of detail specifications. Detail specifications not complying with these requirements shall not be considered as being in accordance with IEC specifications nor shall they so be described.

In the preparation of detail specifications the content of 1.4 of the generic specification shall be taken into account.

The numbers between brackets on the first page correspond to the following information which shall be inserted in the position indicated.

Identification of the detail specification

- [1] The "International Electrotechnical Commission" or the National Standards Organization under whose authority the detail specification is drafted.
- [2] The IEC or National Standards number of the detail specification, date of issue and any further information required by the national system.
- [3] The number and issue number of the IEC or national generic specification.
- [4] The IEC number of the blank detail specification.

Identification of the thermistor

- [5] A short description of the type of thermistor.
- [6] Information on typical construction (if applicable).

NOTE – When the thermistor is not designed for use on printed boards, this should clearly be stated in the detail specification in this position.

- [7] Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the national or international documents for outlines. Alternatively, this drawing may be given in an annex to the detail specification.
- [8] Application or group of applications covered and/or assessment level.
- [9] Reference data on the most important properties, to allow comparison between the various thermistor types.

[1]	IEC 60738-1-2-XXX QC 440002	[2]
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH:	IEC 60738-1-2 QC 440002	[4]
[3]	DIRECTLY HEATED POSITIVE STEP-FUNCTION TEMPERATURE COEFFICIENT THERMISTORS FOR HEATING ELEMENT APPLICATION	[5]
Outline drawing: [see 1.2] [... angle projection]	MODIFIED FERRO-ELECTRIC CERAMIC MATERIAL	[6]
[7] [Other shapes are permitted within the dimensions given]	Assessment level: EZ	[8]

Information on the availability of components qualified to this detail specification is given in the Register of Approvals.

[9]

1 General data

1.1 Method(s) of mounting (to be inserted)

(See 4.12.1 of IEC 60738-1.)

1.2 Dimensions

(All dimensions are in millimetres or inches and millimetres; it shall be stated which dimensions are suitable for gauging.)

Dimensioned drawing(s) shall be given in the detail specification. If necessary, the dimensions may be listed in tabular form with reference to styles or codes.

1.3 Coating

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The detail specification shall state:

- a) whether the coating is insulating or non-insulating;
- b) the material;
- c) the colour, if applicable.

1.4 Terminations

The detail specification shall state whether the terminations are suitable for soldering. If they are not, suitable methods of connection shall be stated for example: welding, clamping or crimping.

1.5 Flammability

The detail specification shall state whether the thermistor is actively or passively flammable if applicable. The test method shall be given in the test schedule.

1.6 Resistance to solvents

The detail specification shall state whether the coating and the marking of the thermistor are solvent resistant if applicable. The test methods shall be given in the test schedule.

1.7 Packaging

The detail specification shall give the following information (if required):

- a) whether bulk packed or taped and if taped, drawing or references;
- b) the dimensions of the immediate packaging and the number of thermistors packed;
- c) the dimensions of the outer package and the number of immediate packages;
- d) methods of disposal of the packaging material.

1.8 Electrical data/Ratings and characteristics

The detail specification shall give units and tolerances or limiting values for the following parameters. If necessary, electrical data may be listed in tabular form, with reference to styles and codes.

Upper/Lower category temperatures (UCT/LCT);

Operating temperature range at maximum voltage;

Maximum voltage ($U_{max.}$);

Zero-power resistance (R_T);

Switching temperature (T_b);

Either inrush current (I_{in});

or minimum resistance ($R_{min.}$);

Either residual current (I_{res});

or

Resistance(R_p);

or

Final surface temperature (T_{FS}); *

* Test method shall be given in the detail specification.

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1.9 Related documents

Generic specification:

[SIST EN 60738-1-2:2002](https://standards.iteh.ai/catalog/standards/sist/70208958-6060-45a8-b395-712-2022-197/iec-60738-1-2-2002)

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IEC 60738-1:19.., *Thermistors – Directly heated positive step-function temperature coefficient – Part 1: Generic specification*

1.10 Marking

The marking of the thermistors and package containing the thermistors shall be in accordance with the requirements of 2.4 of IEC 60738-1.

The details of the marking of the thermistors and package containing the thermistor shall be given in full in the detail specification.