

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Fixed capacitors for use in electronic equipment –
Part 1-1: Generic blank detail specification**

**Condensateurs fixes utilisés dans les équipements électroniques –
Partie 1-1: Spécification particulière-cadre générique**

<https://standards.iteh.ai/catalog/standards/sist/5919b124-2f53-4780-8405-fc37c55bcf5d/iec-60384-1-1-2022>



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The text of this International Standard is based on the following documents:

| Draft | Report on voting |
|--------------|------------------|
| 40/2951/FDIS | 40/2964/RVD |

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 60384 series, published under the general title *Fixed capacitors for use in electronic equipment*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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INTRODUCTION

This introduction is not intended to be copied into the drafted detail specification. Therefore, it is positioned in front of the conventional document structure and clause numbering range. It nevertheless contains normative requirements to the drafted detail specification.

Scope of this generic blank detail specification

This part of IEC 60384-1 is applicable to the drafting of detail specifications for fixed capacitors for use in electronic equipment.

Function of this generic blank detail specification

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

The detail specification should contain a table of contents prior to the first page of the actual specification.

In the preparation of the detail specification, the relevant content of the related sectional specification IEC 60384-X shall be taken into account.

Units, graphical symbols and letter symbols should be chosen, wherever possible, from the various parts of the IEC 60027 series, the ISO 80000 series and ISO/IEC Guide 99.

This blank detail specification uses for its purpose two different kinds of notes:

For notes which give additional information intended to assist the understanding or use of the resulting document and therefore shall be copied as NOTE into the drafted detail specification. As outlined in the ISO/IEC directives, these notes shall not contain any requirement, instruction, recommendation or permission.

For instructions to the specification writer, *COMMENTS* are used instead of NOTES. For a clear distinction, these comments are formatted as IEC-Instructions, as shown in the example below:

COMMENTS For editorial notes which are intended to aid and direct the specification writer and therefore shall not be copied into the drafted detail specification. In order to accomplish their function, editorial notes require the use of instructions, recommendations and permissions addressed to the writer of the detail specification.

Identification of the detail specification and the capacitor

The first page of the detail specification should have a layout starting with a title block as recommended on the following page.

The numbers in square brackets are editorial references, which are not intended to be copied into the drafted detail specification, and which correspond to the following information on the contents which shall be inserted in the indicated positions.

- [1] "International Electrotechnical Commission" or the name of the standardization organization under whose authority the detail specification is published and, if applicable, the organization from whom the detail specification is available.

- [2] The number allocated to the detail specification by the IEC or by the responsible standardisation organisation, together with the date of issue and issue number, as applicable. Further reference details required by the responsible standardisation organisation or quality assessment system may be given here, including an established mark of conformity, as applicable.
- [3] The number and issue date and number, as applicable, of the relevant generic specification, sectional specification and blank detail specification, where the referenced issues shall be the most recent issues of the respective specifications.
- [4] The title of the detail specification, providing a short description of the type of capacitors. This entry should support the discrimination between similar specifications and should be suitable for an entry in a register of approvals or in a catalogue of standards. It may duplicate information given in the textual scope in Clause 1.
- [5] An outline drawing or illustration of the products. This entry should aid the easy recognition of the capacitors and, if possible, support the discrimination between similar specifications. It may duplicate information given in Figure 1.
- [6] Information on the typical construction of the capacitors (where applicable). This entry may duplicate information given in the textual scope in Clause 1.
- [7] The classification level of the capacitors covered by this detail specification, the level of quality assessment (Assessment level EZ). This information may duplicate information given in the textual scope in Clause 1.
- [8] Optional field for table notes.
- [9] Statement(s) about the availability of information on components qualified to this detail specification, if applied within a full quality assessment system.

Example for the use within the IECQ system:

Information about components qualified to this detail specification is available in the approvals section of the website <http://www.iecq.org>.

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| | |
|--|---|
| Specification available from: [1] | IEC 60384-X-1xx:xxxx [2] |
| Electronic components of assessed quality in accordance with: [3] | Title [4] |
| [5] | [6] |
| | [7] Information about capacitor classification, quality assessment, etc. |
| [8] | |
| [9] | |

COMMENT The remainder of this page is intentionally left empty in order to start Clause 1 on top of the next page.

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FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 1-1: Generic blank detail specification

1 Scope

This part of IEC 60384-1 establishes a generic template and specifies requirements to the content of detail specifications for capacitors within the IEC 60384-X series.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60062, *Marking codes for resistors and capacitors*

IEC 60384-1:2021, *Fixed capacitors for use in electronic equipment – Part 1: Generic specification*

IEC 60384-X:XXXX, [*Related sectional specification*]

IEC 61193-2, *Quality assessment systems – Part 2: Selection and use of sampling plans for inspection of electronic components and packages*

IEC 61760-2, *Surface mounting technology – Part 2: Transportation and storage conditions of surface mounting devices (SMD) – Application guide*

IEC 62090, *Product package labels for electronic components using bar code and two dimensional symbolologies*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60384-1 and in the related sectional specification IEC 60384-X, [*and the following,*] apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

[.....]

4 Ratings and characteristics

4.1 General

Various parameters of these capacitors are precisely defined in this specification. Unspecified parameters may vary from one capacitor to another.

4.2 Dimensions

The shape and dimensions of the capacitors covered by this specification are shown in Figure 1, with the specific styles and their respective dimensions given in Table 1. Other shapes are permissible within the given dimensions.



Figure 1 – Outline and dimensions

COMMENT Figure 1 in particular needs to define all dimensions identified in the sectional specification, and intended to be verified by measurements, which generally includes those dimensions to be given in Table 1.

Table 1 – Case size and dimensions

| Case size | | Dimensions ^a | | | | | Mass (optional, for information only) |
|-----------|----------------|-------------------------|---------|--|---------|--|--|
| Metric | X ^b | D mm | L mm | | W mm | | m g |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

^a These are examples and need to be completed to provide full information of the component dimensions.

^b Alternative size code, for information only.

COMMENT Additional information can be added after Table 1, e.g. detail drawings and additional information and requirements on the outline of the component.

4.3 Climatic category and ratings

The climatic categories applied in detail specifications are given in Table 2.

Table 2 – Climatic categories

| Climatic category |
|----------------------|
| LCT / UCT / duration |
| ... / ... / ... |
| ... / ... / ... |

COMMENT Refer to the related clause in the sectional specification.

Table 3 – Ratings

| Case size | Parameter Symbol Unit | Parameter Symbol Unit | Parameter Symbol Unit | Parameter Symbol Unit |
|-----------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | |
| | | | | |
| | | | | |

COMMENT Additional information can be added after Table 3, e.g. Figures, additional information and requirements on the ratings of the component. Where necessary, information about rated temperature and category temperature needs to be added.

4.4 Capacitance range, tolerances and rated voltage

Table 4 gives combinations of temperature coefficients / temperature characteristics, tolerance on capacitance and capacitance range for specific climatic categories and rated voltages.

Table 4 – Temperature coefficients, tolerances and capacitance ranges for climatic category ... / ... / ...

| Case size | Temperature ... | | Tolerance | | Capacitance range | Rated voltage | XXX ^b |
|-----------|---------------------|-------------------|-----------|-------------------|-------------------|---------------|------------------|
| | 10 ⁻⁶ /K | Code ^a | % | Code ^a | F | | |
| | | | | | | | |
| | | | | | | | |

^a Code letters according to IEC 60062.

^b Additional information, e.g. stability class.