



**SLOVENSKI STANDARD**  
**SIST EN IEC 60384-1-1:2022**

**01-november-2022**

---

**Nespremenljivi kondenzatorji za elektronsko opremo - 1-1. del: Splošna okvirna podrobna specifikacija (IEC 60384-1-1:2022)**

Fixed capacitors for use in electronic equipment - Part 1-1 : Generic blank detail specification (IEC 60384-1-1:2022)

Festkondensatoren zur Verwendung in Geräten der Elektronik - Teil 1-1: Allgemeiner Vordruck für Bauartspezifikation (IEC 60384-1-1:2022)

Condensateurs fixes utilisés dans les équipements électroniques - Partie 1-1: Spécification particulière-cadre générique (IEC 60384-1-1:2022)

**Ta slovenski standard je istoveten z: EN IEC 60384-1-1:2022**

---

**ICS:**

31.060.10      Fiksni kondenzatorji      Fixed capacitors

**SIST EN IEC 60384-1-1:2022**      **en**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN IEC 60384-1-1**

September 2022

ICS 31.060.10

English Version

**Fixed capacitors for use in electronic equipment - Part 1-1:  
Generic blank detail specification  
(IEC 60384-1-1:2022)**

Condensateurs fixes utilisés dans les équipements  
électroniques - Partie 1-1: Spécification particulière-cadre  
générique  
(IEC 60384-1-1:2022)

Festkondensatoren zur Verwendung in Geräten der  
Elektronik - Teil 1-1: Allgemeiner Vordruck für  
Bauartspezifikation  
(IEC 60384-1-1:2022)

This European Standard was approved by CENELEC on 2022-08-24. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60384-1-1:2022 (E)****European foreword**

The text of document 40/2951/FDIS, future edition 1 of IEC 60384-1-1, prepared by IEC/TC 40 "Capacitors and resistors for electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60384-1-1:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2023-05-24 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2025-08-24 document have to be withdrawn

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

**Endorsement notice**

iTeh STANDARD PREVIEW

The text of the International Standard IEC 60384-1-1:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

<https://standards.iteh.ai/catalog/standards/sist/9876f15d-2553-4f8d-81a0-d4897f15248d/sist-en-iec-60384-1-1-2022>

IEC 60027 series	NOTE	Harmonized as EN 60027 series
IEC 60286 series	NOTE	Harmonized as EN 60286 series
IEC 61760-1	NOTE	Harmonized as EN IEC 61760-1
ISO 80000 series	NOTE	Harmonized as EN ISO 80000 series
ISO 80000-1	NOTE	Harmonized as EN ISO 80000-1

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60062	-	Marking codes for resistors and capacitors	EN 60062	-
IEC 60384-1	2021	Fixed capacitors for use in electronic equipment - Part 1: Generic specification	EN IEC 60384-1	2021
IEC 60384-X	XXXX	[Related sectional specification]	EN 60384-X	XXXX
IEC 61193-2	-	Quality assessment systems - Part 2: Selection and use of sampling plans for inspection of electronic components and packages	EN 61193-2	-
IEC 61760-2	-	Surface mounting technology - Part 2: Transportation and storage conditions of surface mounting devices (SMD) - Application guide	EN IEC 61760-2	-
IEC 62090	-	Product package labels for electronic components using bar code and two dimensional symbologies	EN 62090	-





IEC 60384-1-1

Edition 1.0 2022-07

# 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/9876f15d-2553-4f8d-81a0-d4897f15248d/sist-en-iec-60384-1-1-2022>

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 31.060.10

ISBN 978-2-8322-4031-1

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	9
2 Normative references .....	9
3 Terms and definitions .....	9
4 Ratings and characteristics.....	10
4.1 General.....	10
4.2 Dimensions .....	10
4.3 Climatic category and ratings .....	11
4.4 Capacitance range, tolerances and rated voltage.....	11
5 Tests, test severities and performance requirements .....	12
5.1 General.....	12
5.2 Visual inspection and check of dimensions .....	12
5.3 Electrical tests and measurements.....	12
5.4 Robustness of terminations.....	12
5.5 Tests related to component assembly .....	12
5.6 Rapid change of temperature .....	12
5.7 Vibration .....	12
5.8 Shock .....	12
5.9 Climatic sequence.....	12
5.10 Damp heat, steady state .....	12
5.11 Endurance .....	13
5.12 Further tests related to specific component technology (if applicable).....	13
5.13 Tests related to safety (if applicable).....	13
6 Marking, packaging and ordering information.....	13
6.1 Marking.....	13
6.1.1 Marking of the component.....	13
6.1.2 Marking of the packaging.....	13
6.2 Packaging .....	13
6.3 Ordering information .....	13
7 Additional information .....	13
7.1 General.....	13
7.2 Storage and transportation.....	13
7.3 Substrate for assembly .....	14
7.4 Soldering process .....	14
7.5 Use of cleaning agents or solvents.....	14
7.6 Coating or potting after assembly.....	14
8 Quality assessment procedures .....	14
8.1 General.....	14
8.1.1 100 % test .....	14
8.1.2 Certificate of conformity (CoC).....	15
8.1.3 Certified test records of released lots .....	15
8.2 Qualification approval .....	15
8.3 Maintenance of a qualification approval .....	15
8.3.1 Quality conformance inspection .....	15
8.3.2 Non-conforming item .....	15



Annex A (normative) Symbols and abbreviated terms .....	19
A.1 Symbols.....	19
A.2 Abbreviated terms.....	19
Annex B (normative) Reference for visual inspection .....	20
Bibliography.....	21
Figure 1 – Outline and dimensions .....	10
Table 1 – Case size and dimensions.....	10
Table 2 – Climatic categories.....	11
Table 3 – Ratings.....	11
Table 4 – Temperature coefficients, tolerances and capacitance ranges for climatic category ... / ... / ... .....	11
Table 5 – Test schedule for a qualification approval.....	16
Table 6 – Test schedule for quality conformance inspection.....	17

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN IEC 60384-1-1:2022](https://standards.iteh.ai/catalog/standards/sist/9876f15d-2553-4f8d-81a0-d4897f15248d/sist-en-iec-60384-1-1-2022)

<https://standards.iteh.ai/catalog/standards/sist/9876f15d-2553-4f8d-81a0-d4897f15248d/sist-en-iec-60384-1-1-2022>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –****Part 1-1: Generic blank detail 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60384-1-1 has been prepared by technical committee 40: Capacitors and resistors for electronic equipment. It is an International Standard.

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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://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](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

**IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN IEC 60384-1-1:2022](https://standards.iteh.ai/catalog/standards/sist/9876f15d-2553-4f8d-81a0-d4897f15248d/sist-en-iec-60384-1-1-2022)

<https://standards.iteh.ai/catalog/standards/sist/9876f15d-2553-4f8d-81a0-d4897f15248d/sist-en-iec-60384-1-1-2022>