Fixed capacitors for use in electronic equipment - Part 1: Generic specification

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60384-1:2016 sisaldab Euroopa standardi EN 60384-1:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 60384-1:2016 consists of the English text of the European standard EN 60384-1:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 30.09.2016.	Date of Availability of the European standard is 30.09.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 31.060

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60384-1

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Supersedes EN 60384-1:2009

English Version

Fixed capacitors for use in electronic equipment - Part 1: Generic specification (IEC 60384-1:2016)

Condensateurs fixes utilisés dans les équipements électroniques - Partie 1: Spécification générique (IEC 60384-1:2016)

Festkondensatoren zur Verwendung in Geräten der Elektronik - Teil 1: Fachgrundspezifikation (IEC 60384-1:2016)

This European Standard was approved by CENELEC on 2016-03-18. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 60384-1:2016 E

European foreword

The text of document 40/2420/FDIS, future edition 5 of IEC 60384-1, 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 60384-1:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-03-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-09-30

This document supersedes EN 60384-1:2009.

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

Endorsement notice

The text of the International Standard IEC 60384-1:2016 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:

IEC 60384-2	NOTE	Harmonized as EN 60384-2.
IEC 60384-3	NOTE	Harmonized as EN 60384-3.
IEC 60384-3-1	NOTE	Harmonized as EN 60384-3-1.
IEC 60384-26	NOTE	Harmonized as EN 60384-26.
IEC 60469:2013	NOTE	Harmonized as EN 60469:2013.
ISO 9000	NOTE	Harmonized as EN ISO 9000.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When 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.

Publication	Year	Title	EN/HD	Year
IEC 60027	series	Letter symbols to be used in electrical technology	EN 60027	series
IEC 60050	series	International Electrotechnical Vocabulary	-	series
IEC 60062	-	Marking codes for resistors and capacitors	EN 60062	-
IEC 60063	-	Preferred number series for resistors and capacitors	EN 60063	-
IEC 60068-1	2013	Environmental testing -- Part 1: General and guidance	EN 60068-1	2014
IEC 60068-2-1	2007	Environmental testing -- Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-2	2007	Environmental testing -- Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 60068-2-6	2007	Environmental testing -- Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-13	1983	Basic environmental testing procedures - Part 2-13: Tests - Test M: Low air pressure	EN 60068-2-13	1999
IEC 60068-2-14	2009	Environmental testing -- Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60068-2-17	1994	Basic environmental testing procedures - Part 2-17: Tests - Test Q: Sealing	EN 60068-2-17	1994
IEC 60068-2-20	2008	Environmental testing -- Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads	EN 60068-2-20	2008
IEC 60068-2-21	2006	Environmental testing -- Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21	2006
IEC 60068-2-27	2008	Environmental testing -- Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	2009
IEC 60068-2-30	2005	Environmental testing -- Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	2005
IEC 60068-2-45 AMD 1	1993	Basic environmental testing procedures; part_2: tests; test_XA and guidance: immersion in cleaning solvents; amendment_1	-	-
IEC 60068-2-45	1980	Basic environmental testing procedures - Part 2-45: Tests - Test XA and guidance: Immersion in cleaning solvents	EN 60068-2-45	1992

IEC 60068-2-54	2006	Environmental testing - Part 2-54: Tests - Test Ta: Solderability testing of electronic components by the wetting balance method	EN 60068-2-54	2006
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)	EN 60068-2-58	2015
IEC 60068-2-67	1995	Environmental testing -- Part 2: Tests - Test Cy: Damp heat, steady state, accelerated test primarily intended for components	EN 60068-2-67	1996
IEC 60068-2-69	2007	Environmental testing - Part 2: Tests - Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method	EN 60068-2-69	2007
IEC 60068-2-78	2012	Environmental testing -- Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2013
IEC 60068-2-82	2007	Environmental testing -- Part 2-82: Tests - Test XW1: Whisker test methods for electronic and electric components	EN 60068-2-82	2007
IEC 60294	-	Measurement of the dimensions of a cylindrical component with axial terminations	EN 60294	-
IEC 60617	-	Standard data element types with associated classification scheme for electric components -- Part 4: IEC reference collection for standard data element types and component classes		-
IEC 60695-11-5	2004	Fire hazard testing -- Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005
IEC 60717	-	Method for the determination of the space required by capacitors and resistors with unidirectional terminations	EN 60717	-
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 61249-2-7	2002	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	EN 61249-2-7	2002
-	-		+ corrigendum Sep.	2005
ISO 3	-	Preferred numbers; Series of preferred numbers		-
ISO 80000-1	-	Quantities and units -- Part 1: General	EN ISO 80000-1	-

CONTENTS

INTRODUCTION

The specification system for fixed capacitors for use in electronic equipment is structured in a hierarchical system consisting of the following specification types.

Generic specification

The generic specification covers all subjects mainly common to the family of fixed capacitors for use in electronic equipment, such as terminology, methods of measurement and tests. Where the individual subjects require the prescription conditions or parameters specific to the particular subfamily or type of fixed capacitor, such prescriptions are required to be given by one of the subordinate specifications.

For the scope of fixed capacitors, the numeric reference to the generic specification is IEC 60384-1.

Sectional specification

Sectional specifications cover all subjects additional to those given in the generic specification, which are specific to a defined sub-group of fixed capacitors. These subjects normally are preferred values for dimensions and characteristics, additional test methods and relevant prescriptions for test methods given in the generic specification, prescriptions for sampling and for the preparation of specimen, recommended test severities and preferred acceptance criteria. The sectional specification also outlines the structure and scope of the test schedules which are to be applied in all subordinate detail specifications.

For the scope of fixed capacitors, the numeric references to the sectional specifications reach from IEC 60384-2 for polyester film capacitors to currently IEC 60384-26 for aluminium electrolytic capacitors with conductive polymer solid electrolyte. The variety of sectional specifications may be adapted to the portfolio of different technologies of fixed capacitors.

Detail specification

Detail specifications give directly, or by making reference to other specifications, all information necessary to completely describe a given type and range of fixed capacitors, including prescriptions of all values for dimensions and characteristics. They also give all information required for the quality assessment of the covered type and range of fixed capacitors within a suitable quality assessment system, including prescriptions for all applied test severities and acceptance criteria, and the completed test schedules.

Detail specifications can be either specifications within the IEC system, another specification system linked to IEC, or specified by the manufacturer or user. For the scope of fixed capacitors, the numeric references to detail specifications are for example IEC 60384-3-101, if related to the sectional specification IEC 60384-3 and to the ancillary blank detail specification IEC 60384-3-1.

Blank detail specification

The hierarchical system of specifications is supplemented by one or more blank detail specifications to a sectional specification, which are used to ensure a uniform presentation of detail specifications. The blank detail specifications provide the specification writer with a template on the layout to be adopted and on the information to be given and with guidance for the preparation of detail specifications in line with the requirements of the superior generic or sectional specifications. Blank detail specifications are not considered as relevant specifications since they do not themselves describe any particular component.

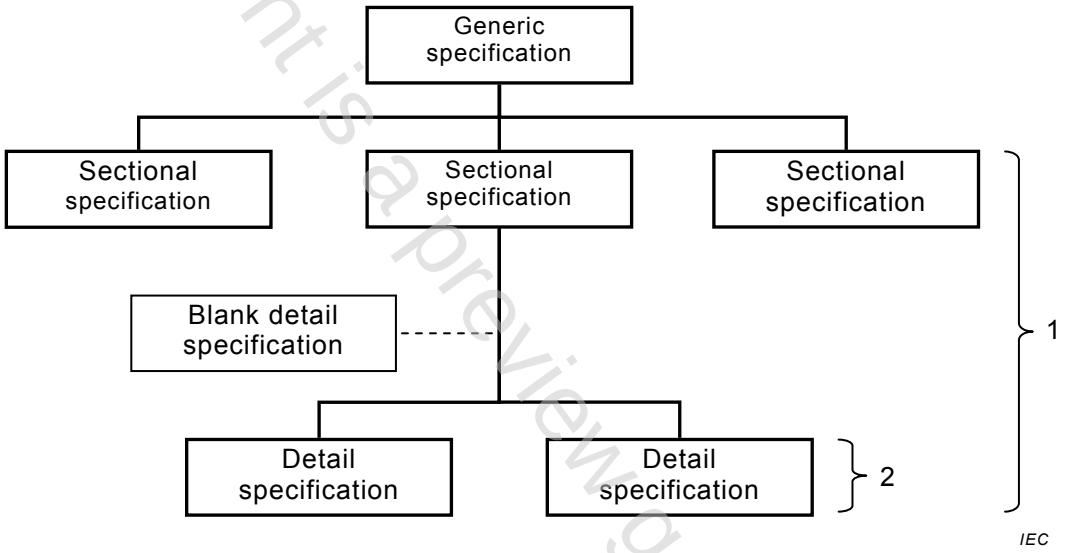
The presence of an established hierarchical specification system with blank detail specifications permits the preparation of detail specifications even outside of the relevant IEC technical committee.

For the scope of fixed capacitors, the numeric references to blank detail specifications are, for example, IEC 60384-3-1, if related to the sectional specification IEC 60384-3.

Relevant specification

In this system the term “relevant specification” addresses subordinate specifications containing specific requirements, where applicable.

Any generic or sectional specification may use abstract and universal references to subordinate specifications of either hierarchical level by use of the expression “relevant specification”.



Key

1 Indicates the range of “*Relevant specifications*” to the superior generic specification, where applicable.

2 Indicates the range of “*Relevant specifications*” to the superior sectional specification, where applicable.