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REDLINE VERSION

Elektronikkomponenter – Fasta kondensatorer – Del 25: Grupp-specifikation för aluminium-elektrolytkondensatorer med fast elektrolyt av ledande polymer, för ytmontering

Fixed capacitors for use in electronic equipment –

Part 25: Sectional specification –

Fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte

En så kallad "Redline version" (RLV) innehåller både den fastställda IEC-standard och en ändringsmarkerad standard. Alla tillägg och borttagningar sedan den tidigare utgåvan är markerade med färg. Med en RLV sparar du mycket tid när du ska identifiera och bedöma aktuella ändringar i standarden. SEK Svensk Elstandard kan bara ge ut en RLV i de fall den finns tillgänglig från IEC.

INTERNATIONAL STANDARD



**Fixed capacitors for use in electronic equipment –
Part 25: Sectional specification – Fixed aluminium electrolytic surface mount
capacitors with conductive polymer solid electrolyte**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.060.40; 31.060.50

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CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	8
4 Preferred ratings and characteristics	8
4.1 Preferred characteristics	8
4.2 Preferred values of ratings	8
4.2.1 Nominal capacitance (C_N)	8
4.2.2 Tolerance on nominal capacitance.....	8
4.2.3 Rated voltage (U_R).....	9
4.2.4 Category voltage (U_C).....	9
4.2.5 Surge voltage (U_{RS}).....	9
4.2.6 Rated temperature	9
5 Test and measurement procedures	9
5.1 General.....	9
5.2 Preliminary drying	9
5.3 Measuring conditions	9
5.4 Mounting.....	9
5.4.1 General	9
5.4.2 Initial inspections	10
5.4.3 Test conditions	10
5.4.4 Final inspections and requirements	10
5.5 Visual examination and check of dimensions	10
5.5.1 General	10
5.5.2 Visual examination and check of dimensions	10
5.5.3 Requirements	10
5.6 Electrical tests	10
5.6.1 Leakage current.....	10
5.6.2 Capacitance.....	11
5.6.3 Tangent of loss angle ($\tan \delta$)	11
5.6.4 Equivalent series resistance (ESR) (if required)	11
5.6.5 Impedance (if required)	12
5.7 Resistance to soldering heat	12
5.7.1 General	12
5.7.2 Initial inspections	12
5.7.3 Test conditions	12
5.7.4 Recovery	12
5.7.5 Final inspections and requirements	12
5.8 Solderability.....	13
5.8.1 General	13
5.8.2 Final inspections and requirements	13
5.9 Shear test (if required)	13
5.10 Substrate bending test (if required).....	13
5.10.1 General	13
5.10.2 Initial inspections	13
5.10.3 Test conditions	13

5.10.4	Final inspections and requirements	13
5.11	Rapid change of temperature	13
5.11.1	General	13
5.11.2	Initial inspections	13
5.11.3	Test conditions	13
5.11.4	Recovery	13
5.11.5	Final inspections and requirements	14
5.12	Climatic sequence	14
5.12.1	General	14
5.12.2	Initial inspections	14
5.12.3	Dry heat	14
5.12.4	Damp heat, cyclic, Test Db, first cycle	14
5.12.5	Cold	14
5.12.6	Damp heat, cyclic, Test Db, remaining cycles	14
5.12.7	Recovery	14
5.12.8	Final inspections and requirements	14
5.13	Damp heat, steady state	14
5.13.1	General	14
5.13.2	Initial inspections	14
5.13.3	Test conditions	14
5.13.4	Recovery	15
5.13.5	Final inspections and requirements	15
5.14	Characteristics at high and low temperature	15
5.14.1	General	15
5.14.2	Inspections and requirements	15
5.15	Surge voltage	15
5.15.1	General	15
5.15.2	Initial inspections	15
5.15.3	Test conditions	15
5.15.4	Recovery	16
5.15.5	Final inspections and requirements	16
5.16	Endurance	16
5.16.1	General	16
5.16.2	Initial inspections	16
5.16.3	Test conditions	16
5.16.4	Recovery	16
5.16.5	Final inspections and requirements	16
5.17	Storage at high temperature	16
5.17.1	General	16
5.17.2	Initial inspections	16
5.17.3	Test conditions	17
5.17.4	Recovery	17
5.17.5	Final inspections and requirements	17
5.18	Charge and discharge (if required)	17
5.18.1	General	17
5.18.2	Initial inspections	17
5.18.3	Test conditions	17
5.18.4	Final inspections and requirements	17
5.19	Component solvent resistance (if required)	17

5.20	Solvent resistance of marking (if required)	17
5.21	High surge current (if required)	18
5.21.1	General	18
5.21.2	Final inspections and requirements	18
6	Marking	18
6.1	General.....	18
6.2	Information for marking	18
6.3	Marking on capacitors	18
6.4	Marking on packaging	18
7	Information to be given in a detail specification	18
7.1	General.....	18
7.2	Outline drawing and dimensions	19
7.3	Mounting.....	19
7.4	Ratings and characteristics	19
7.4.1	General	19
7.4.2	Nominal capacitance range	19
7.4.3	Particular characteristics	19
7.4.4	Soldering	19
7.5	Marking.....	20
8	Quality assessment procedures	20
8.1	Primary stage of manufacture	20
8.2	Structurally similar components	20
8.3	Certified test records of released lots	20
8.4	Qualification approval (QA) procedures	20
8.4.1	General	20
8.4.2	Qualification approval on the basis of the fixed sample size procedure	20
8.4.3	Tests	21
8.5	Quality conformance inspections	28
8.5.1	Formation of inspection lots.....	28
8.5.2	Test schedule	29
8.5.3	Delayed delivery	29
8.5.4	Assessment levels	29
Annex X (informative) Cross-references to the prior edition of this document		31
Bibliography		32
Table 1 – Surge voltages		9
Table 2 – Sampling plan for qualification approval, assessment level EZ.....		22
Table 3 – Test schedule for qualification approval		23
Table 4 – Lot-by-lot inspection		29
Table 5 – Periodic inspection		30
Table X.1 – Reference to IEC 60384-25 for clauses/subclauses and tables		31

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 25: Sectional specification – Fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte

FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60384-25:2015. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 60384-25 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This third edition cancels and replaces the second edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Revision of the structure in accordance with ISO/IEC Directives, Part 2:2018, to the extent practicable, and harmonization between other similar kinds of documents.
- b) In addition, Clause 5 and all the tables have been reviewed in order to prevent duplications and contradictions.

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

FDIS	Report on voting
40/2850/FDIS	40/2861/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.

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.

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 <http://www.iec.ch/standardsdev/publications>.

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

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication 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.

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 25: Sectional specification – Fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte

~~1~~ **General**

1 Scope

This part of IEC 60384 applies to fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte, primarily intended for DC applications for use in electronic equipment.

Fixed aluminium electrolytic surface mount capacitors with solid (MnO₂) are not included but are covered by IEC 60384-18.

These capacitors are primarily intended for use in electronic equipment to be mounted directly on substrates for hybrid circuits or to printed boards.

Capacitors for special-purpose applications ~~may~~ can need additional requirements.

~~1.2~~ **Object**

The object of this document is to prescribe preferred ratings and characteristics and to select from IEC 60384-1:2016, the appropriate quality assessment procedures, tests and measuring methods and to give general performance requirements for this type of capacitor. ~~Test severities and requirements prescribed in detail specifications referring to this sectional specification shall be of equal or higher performance level, because lower performance levels are not permitted.~~

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 60063, *Preferred number series for resistors and capacitors*

IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60384-1:20082016, *Fixed capacitors for use in electronic equipment – Part 1: Generic specification*

IEC 61193-2:2007, *Quality assessment systems – Part 2: Selection and use of sampling plans for inspection of electronic components and packages*

~~ISO 3, Preferred numbers Series of preferred numbers~~

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Elektronikkomponenter – Fasta kondensatorer – Del 25: Grupp-specifikation för aluminium-elektrolytkondensatorer med fast elektrolyt av ledande polymer, för ytmontering

Fixed capacitors for use in electronic equipment –

Part 25: Sectional specification –

Fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte

Som svensk standard gäller europastandarden EN IEC 60384-25:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60384-25:2021.

Nationellt förord

Europastandarden EN IEC 60384-25:2021

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60384-25, Third edition, 2021 - Fixed capacitors for use in electronic equipment - Part 25: Sectional specification - Fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60384-25, utgåva 2, 2016, gäller ej fr o m 2024-08-18.

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

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Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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English Version

Fixed capacitors for use in electronic equipment - Part 25:
Sectional specification: Fixed aluminium electrolytic surface
mount capacitors with conductive polymer solid electrolyte
(IEC 60384-25:2021)

Condensateurs fixes utilisés dans les équipements
électroniques - Partie 25: Spécification intermédiaire -
Condensateurs fixes électrolytiques en aluminium pour
montage en surface à électrolyte solide en polymère
conducteur
(IEC 60384-25:2021)

Festkondensatoren zur Verwendung in Geräten der
Elektronik - Teil 25: Rahmenspezifikation -
Oberflächenmontierbare Aluminium-Elektrolyt-
Kondensatoren mit leitfähigem Polymerfestkörper-
Elektrolyten
(IEC 60384-25:2021)

This European Standard was approved by CENELEC on 2021-08-18. 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.

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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

European foreword

The text of document 40/2850/FDIS, future edition 3 of IEC 60384-25, 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 60384-25:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2022-05-18 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2024-08-18 document have to be withdrawn

This document supersedes EN 60384-25:2015 and all of its amendments and corrigenda (if any).

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

The text of the International Standard IEC 60384-25:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60384-18 NOTE Harmonized as EN 60384-18

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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 60384-1	2016	Fixed capacitors for use in electronic equipment - Part 1: Generic specification	EN 60384-1	2016
IEC 61193-2	2007	Quality assessment systems - Part 2: Selection and use of sampling plans for inspection of electronic components and packages	EN 61193-2	2007

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fixed capacitors for use in electronic equipment –
Part 25: Sectional specification – Fixed aluminium electrolytic surface mount
capacitors with conductive polymer solid electrolyte**

**Condensateurs fixes utilisés dans les équipements électroniques –
Partie 25: Spécification intermédiaire – Condensateurs fixes électrolytiques
en aluminium pour montage en surface à électrolyte solide en polymère
conducteur**

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CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	7
4 Preferred ratings and characteristics	8
4.1 Preferred characteristics	8
4.2 Preferred values of ratings.....	8
4.2.1 Nominal capacitance (C_N).....	8
4.2.2 Tolerance on nominal capacitance.....	8
4.2.3 Rated voltage (U_R)	8
4.2.4 Category voltage (U_C)	8
4.2.5 Surge voltage (U_{RS})	9
4.2.6 Rated temperature.....	9
5 Test and measurement procedures.....	9
5.1 General.....	9
5.2 Preliminary drying.....	9
5.3 Measuring conditions	9
5.4 Mounting.....	9
5.4.1 General	9
5.4.2 Initial inspections.....	9
5.4.3 Test conditions	9
5.4.4 Final inspections and requirements.....	9
5.5 Visual examination and check of dimensions	9
5.5.1 General	9
5.5.2 Visual examination and check of dimensions	10
5.5.3 Requirements	10
5.6 Electrical tests	10
5.6.1 Leakage current.....	10
5.6.2 Capacitance	10
5.6.3 Tangent of loss angle ($\tan \delta$)	11
5.6.4 Equivalent series resistance (ESR) (if required).....	11
5.6.5 Impedance (if required).....	11
5.7 Resistance to soldering heat.....	12
5.7.1 General	12
5.7.2 Initial inspections.....	12
5.7.3 Test conditions	12
5.7.4 Recovery	12
5.7.5 Final inspections and requirements.....	12
5.8 Solderability.....	12
5.8.1 General	12
5.8.2 Final inspections and requirements.....	12
5.9 Shear test (if required).....	12
5.10 Substrate bending test (if required).....	12
5.10.1 General	12
5.10.2 Initial inspections.....	13
5.10.3 Test conditions	13

5.10.4	Final inspections and requirements.....	13
5.11	Rapid change of temperature	13
5.11.1	General	13
5.11.2	Initial inspections.....	13
5.11.3	Test conditions	13
5.11.4	Recovery	13
5.11.5	Final inspections and requirements.....	13
5.12	Climatic sequence	13
5.12.1	General	13
5.12.2	Initial inspections.....	13
5.12.3	Dry heat	13
5.12.4	Damp heat, cyclic, Test Db, first cycle	14
5.12.5	Cold	14
5.12.6	Damp heat, cyclic, Test Db, remaining cycles	14
5.12.7	Recovery	14
5.12.8	Final inspections and requirements.....	14
5.13	Damp heat, steady state	14
5.13.1	General	14
5.13.2	Initial inspections.....	14
5.13.3	Test conditions	14
5.13.4	Recovery	14
5.13.5	Final inspections and requirements.....	14
5.14	Characteristics at high and low temperature.....	14
5.14.1	General	14
5.14.2	Inspections and requirements	15
5.15	Surge voltage	15
5.15.1	General	15
5.15.2	Initial inspections.....	15
5.15.3	Test conditions	15
5.15.4	Recovery	15
5.15.5	Final inspections and requirements.....	15
5.16	Endurance	16
5.16.1	General	16
5.16.2	Initial inspections.....	16
5.16.3	Test conditions	16
5.16.4	Recovery	16
5.16.5	Final inspections and requirements.....	16
5.17	Storage at high temperature.....	16
5.17.1	General	16
5.17.2	Initial inspections.....	16
5.17.3	Test conditions	16
5.17.4	Recovery	16
5.17.5	Final inspections and requirements.....	16
5.18	Charge and discharge (if required).....	16
5.18.1	General	16
5.18.2	Initial inspections.....	17
5.18.3	Test conditions	17
5.18.4	Final inspections and requirements.....	17
5.19	Component solvent resistance (if required)	17

5.20	Solvent resistance of marking (if required)	17
5.21	High surge current (if required)	17
5.21.1	General	17
5.21.2	Final inspections and requirements.....	17
6	Marking	17
6.1	General.....	17
6.2	Information for marking	18
6.3	Marking on capacitors	18
6.4	Marking on packaging	18
7	Information to be given in a detail specification.....	18
7.1	General.....	18
7.2	Outline drawing and dimensions	18
7.3	Mounting.....	19
7.4	Ratings and characteristics	19
7.4.1	General	19
7.4.2	Nominal capacitance range.....	19
7.4.3	Particular characteristics	19
7.4.4	Soldering	19
7.5	Marking.....	19
8	Quality assessment procedures	19
8.1	Primary stage of manufacture	19
8.2	Structurally similar components	20
8.3	Certified test records of released lots.....	20
8.4	Qualification approval (QA) procedures.....	20
8.4.1	General	20
8.4.2	Qualification approval on the basis of the fixed sample size procedure	20
8.4.3	Tests	20
8.5	Quality conformance inspections.....	28
8.5.1	Formation of inspection lots.....	28
8.5.2	Test schedule	29
8.5.3	Delayed delivery.....	29
8.5.4	Assessment levels	29
Annex X (informative)	Cross-references to the prior edition of this document.....	31
Bibliography		32
Table 1	– Surge voltages	9
Table 2	– Sampling plan for qualification approval, assessment level EZ	22
Table 3	– Test schedule for qualification approval.....	23
Table 4	– Lot-by-lot inspection.....	29
Table 5	– Periodic inspection	30
Table X.1	– Reference to IEC 60384-25 for clauses/subclauses and tables	31

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –**Part 25: Sectional specification – Fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte****FOREWORD**

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International Standard IEC 60384-25 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This third edition cancels and replaces the second edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Revision of the structure in accordance with ISO/IEC Directives, Part 2:2018, to the extent practicable, and harmonization between other similar kinds of documents.
- b) In addition, Clause 5 and all the tables have been reviewed in order to prevent duplications and contradictions.

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

FDIS	Report on voting
40/2850/FDIS	40/2861/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.

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.

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 <http://www.iec.ch/standardsdev/publications>.

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

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

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 25: Sectional specification – Fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte

1 Scope

This part of IEC 60384 applies to fixed aluminium electrolytic surface mount capacitors with conductive polymer solid electrolyte, primarily intended for DC applications for use in electronic equipment.

Fixed aluminium electrolytic surface mount capacitors with solid (MnO₂) are not included but are covered by IEC 60384-18.

These capacitors are primarily intended for use in electronic equipment to be mounted directly on substrates for hybrid circuits or to printed boards.

Capacitors for special-purpose applications can need additional requirements.

The object of this document is to prescribe preferred ratings and characteristics and to select from IEC 60384-1:2016, the appropriate quality assessment procedures, tests and measuring methods and to give general performance requirements for this type of capacitor.

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 60063, *Preferred number series for resistors and capacitors*

IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60384-1:2016, *Fixed capacitors for use in electronic equipment – Part 1: Generic specification*

IEC 61193-2:2007, *Quality assessment systems – Part 2: Selection and use of sampling plans for inspection of electronic components and packages*