



SLOVENSKI STANDARD

SIST EN 60384-15:2017

01-november-2017

Fiksni kondenzatorji za uporabo v elektronski opremi - 15. del: Področna specifikacija - Fiksni tantalski kondenzatorji s tekočim ali trdnim elektrolitom (IEC 60384-15:2017)

Fixed capacitors for use in electronic equipment - Part 15: Sectional specification - Fixed tantalum capacitors with non-solid or solid electrolyte (IEC 60384-15:2017)

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Condensateurs fixes utilisés dans les équipements électroniques - Partie 15: Spécification intermédiaire - Condensateurs fixes au tantale, à électrolyte non solide ou solide (IEC 60384-15:2017)

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Ta slovenski standard je istoveten z: EN 60384-15:2017

ICS:

| | | |
|-----------|--------------------------------------|----------------------------------|
| 31.060.40 | Tantalski elektrolitni kondenzatorji | Tantalum electrolytic capacitors |
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EUROPEAN STANDARD

EN 60384-15

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September 2017

ICS 31.060.40

English Version

Fixed capacitors for use in electronic equipment -
Part 15: Sectional specification: Fixed tantalum capacitors with
non-solid or solid electrolyte
(IEC 60384-15:2017)

Condensateurs fixes utilisés dans les équipements
électroniques - Partie 15: Spécification intermédiaire -
Condensateurs fixes au tantale, à électrolyte non solide ou
solide
(IEC 60384-15:2017)

Festkondensatoren zur Verwendung in Geräten der
Elektronik - Teil 15: Rahmenspezifikation - Tantal-Elektrolyt-
Kondensatoren mit flüssigem oder festem Elektrolyten
(IEC 60384-15:2017)

This European Standard was approved by CENELEC on 2017-06-26. 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.

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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

EN 60384-15:2017**European foreword**

The text of document 40/2523/FDIS, future edition 2 of IEC 60384-15, 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 60384-15:2017.

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) 2018-03-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-06-26

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Endorsement notice

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

IEC 60068-2-54:2006 NOTE Harmonized as EN 60068-2-54:2006 (not modified).

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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 60068-2-6 | - | Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal) | EN 60068-2-6 | - |
| IEC 60068-2-14 | - | Environmental testing - Part 2-14: Tests - Test N: Change of temperature | EN 60068-2-14 | - |
| IEC 60384-1 | 2016 | Fixed capacitors for use in electronic equipment - Part 1: Generic specification | EN 60384-1 | 2016 |
| IEC 60417-DB | - | Graphical symbols for use on equipment | - | - |
| 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 |
| ISO 3 | - | Preferred numbers - Series of preferred numbers | - | - |

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INTERNATIONAL STANDARD

**Fixed capacitors for use in electronic equipment –
Part 15: Sectional specification: Fixed tantalum capacitors with non-solid or
solid electrolyte**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –**Part 15: Sectional specification:
Fixed tantalum capacitors with non-solid or solid electrolyte**

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.
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International Standard IEC 60384-15 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This second edition cancels and replaces the first edition published in 1982, Amendment 1:1987 and Amendment 2:1992, and 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 2:2016 (seventh edition) to the extent practicable, and harmonization between other similar kinds of documents.
- b) In addition, Clause 4 and all the tables have been reviewed in order to prevent duplications and contradictions.

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

| FDIS | Report on voting |
|--------------|------------------|
| 40/2523/FDIS | 40/2535/RVD |

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The list of all parts of the IEC 60384 series, 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 "<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.

A bilingual version of this publication may be issued at a later date.

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FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 15: Sectional specification: Fixed tantalum capacitors with non-solid or solid electrolyte

1 General

1.1 Scope

This part of IEC 60384 applies to through-hole/leaded polar and bipolar tantalum electrolyte capacitors with solid and non-solid electrolyte for use in electronic equipment.

It includes capacitors for long-life applications and capacitors for general-purpose applications.

Capacitors for special purpose application may need additional requirements.

This document covers two basic sub-families:

- Sub-family 1: Fixed non-solid electrolyte tantalum capacitors with porous anode.
- Sub-family 2: Fixed solid electrolyte tantalum capacitors with porous anode.

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.

1.3 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 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

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

IEC 60417, *Graphical symbols for use on equipment*

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