

SLOVENSKI STANDARD

SIST EN 60384-21:2012

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SIST EN 60384-21:2005

Fiksni kondenzatorji za uporabo v elektronski opremi - 21. del: Področna specifikacija - Fiksni večplastni kondenzatorji za površinsko namestitev s keramičnim dielektrikom, razred 1

Fixed capacitors for use in electronic equipment - Part 21: Sectional specification - Fixed surface mount multilayer capacitors of ceramic dielectric, Class 1

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Festkondensatoren zur Verwendung in Geräten der Elektronik - Teil 21: Rahmenspezifikation - Oberflächenmontierbare Vielschichtkeramik-Festkondensatoren, Klasse 1

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Condensateurs fixes utilisés dans les équipements électroniques - Partie 21: Spécification intermédiaire: Condensateurs multicouches fixes à diélectriques en céramique pour montage en surface, de classe 1

Ta slovenski standard je istoveten z: EN 60384-21:2012

ICS:

31.060.10 Fiksni kondenzatorji Fixed capacitors

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 60384-21

March 2012

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Supersedes EN 60384-21:2004

English version

**Fixed capacitors for use in electronic equipment -
Part 21: Sectional specification -
Fixed surface mount multilayer capacitors of ceramic dielectric, Class 1
(IEC 60384-21:2011)**

Condensateurs fixes utilisés dans les
équipements électroniques -
Partie 21: Spécification intermédiaire:
Condensateurs multicouches fixes à
diélectriques en céramique pour montage
en surface, de classe 1
(CEI 60384-21:2011)

Festkondensatoren zur Verwendung in
Geräten der Elektronik -
Teil 21: Rahmenspezifikation -
Oberflächenmontierbare
Vielschichtkeramik-Festkondensatoren,
Klasse 1
(IEC 60384-21:2011)

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 40/2127/FDIS, future edition 2 of IEC 60384-21, 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 60384-21:2012.

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) 2012-10-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-01-13

This document supersedes EN 60384-21:2004.

EN 60384-21:2012 includes the following significant technical changes with respect to EN 60384-21:2004:

- The test voltage of 1,2 U_R at $U_R \geq 1\ 000$ V has been added in 4.5.4 Voltage proof.
- Detail test conditions have been added in 4.7 Shear test and 4.8 Substrate bending test.
- Test conditions applying lead free solder alloy (Sn-Ag-Cu) have been included in 4.9 Resistance to soldering heat and 4.10 Solderability.
- A selection of the test conditions according to marketing needs have been stated in 4.13 Damp heat, steady state.
- The dimensions of 0402 M in Annex A have been added.
- The code of the temperature coefficient and the tolerance of capacitance for the reference temperature of 25 °C have been added, see Annex B.

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 60384-21:2011 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 60384-14 NOTE Harmonized as EN 60384-14.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60063 + A1 + A2	1963 1967 1977	Preferred number series for resistors and capacitors	-	-
IEC 60068-1 + corr. October	1988 1988	Environmental testing - Part 1: General and guidance	EN 60068-1	1994
IEC 60068-2-58	2004	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 + corr. December	2004 2004
IEC 60384-1 + corr. November	2008 2008	Fixed capacitors for use in electronic equipment - Part 1: Generic specification	EN 60384-1	2009
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	1973	Preferred numbers - Series of preferred numbers	-	-

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IEC 60384-21

Edition 2.0 2011-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Fixed capacitors for use in electronic equipment –
Part 21: Sectional specification – Fixed surface mount multilayer capacitors of
ceramic dielectric, Class 1**

**Condensateurs fixes utilisés dans les équipements électroniques –
Partie 21: Spécification intermédiaire – Condensateurs multicouches fixes à
diélectriques en céramique pour montage en surface, de Classe 1**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –**Part 21: Sectional specification –
Fixed surface mount multilayer capacitors
of ceramic dielectric, Class 1**

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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- 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.

International Standard IEC 60384-21 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 2004 and contains the following significant technical changes with respect to the previous edition:

- The test voltage of $1,2 U_R$ at $U_R \geq 1\ 000\ \text{V}$ has been added in 4.5.4 Voltage proof.
- Detail test conditions have been added in 4.7 Shear test and 4.8 Substrate bending test.
- Test conditions applying lead free solder alloy (Sn-Ag-Cu) have been included in 4.9 Resistance to soldering heat and 4.10 Solderability.
- A selection of the test conditions according to marketing needs have been stated in 4.13 Damp heat, steady state.
- The dimensions of 0402 M in Annex A have been added.

- The code of the temperature coefficient and the tolerance of capacitance for the reference temperature of 25 °C have been added, see Annex B.

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

FDIS	Report on voting
40/2127/FDIS	40/2140/RVD

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

This publication 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 web site.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

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FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 21: Sectional specification – Fixed surface mount multilayer capacitors of ceramic dielectric, Class 1

1 General

1.1 Scope

This part of IEC 60384 is applicable to fixed unencapsulated surface mount multilayer capacitors of ceramic dielectric, Class 1, for use in electronic equipment. These capacitors have metallized connecting pads or soldering strips and are intended to be mounted on printed boards, or directly onto substrates for hybrid circuits.

Capacitors for electromagnetic interference suppression are not included, but are covered by IEC 60384-14.

1.2 Object

The object of this standard is to prescribe preferred ratings and characteristics and to select from IEC 60384-1 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 should be of equal or higher performance level, lower performance levels are not permitted.

<https://standards.iteh.ai/catalog/standards/sist/1971676a-e336-42cb-b6de-7e05a906db4e/sist-en-60384-21-2012>

1.3 Normative references

The following reference documents are indispensable for the application 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 60063:1963, *Preferred number series for resistors and capacitors*
Amendment 1 (1967)
Amendment 2 (1977)

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-58:2004, *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)*

IEC 60384-1:2008, *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 3:1973, *Preferred numbers – Series of preferred numbers*

1.4 Information to be given in a detail specification

The detail specification shall be derived from the relevant blank detail specification.