IEC 60384-14-2

Edition 2.0 2016-04

INTERNATIONAL STANDARD

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**Fixed capacitors for use in electronic equipment –
Part 14-2: Blank detail specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains – Safety tests only**

IEC 60384-14-2:2016
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**Condensateurs fixes utilisés dans les équipements électroniques –
Partie 14-2: Spécification particulière cadre – Condensateurs fixes d'antiparasitage et raccordement à l'alimentation – Essais de sécurité uniquement**

IEC 60384-14-2:2016-04(en-fr)

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ELECTROTECHNICAL
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INTERNATIONALE

ICS 31.060.10

ISBN 978-2-8322-3273-6

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CONTENTS

iTeh STANDARD PREVIEW
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IEC 60384-14-2:2016
https://standards.iteh.ai/catalog/standards/sist/a7f3ed84-df07-4501-ba65-9d31e83d5115/iec-60384-14-2-2016

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 14-2: Blank detail specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains – Safety tests only

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International Standard IEC 60384-14-2 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 constitutes a technical revision.

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

– The permitted number of non-conforming items in Table 2 is always zero following the sectional specification IEC 60384-14:2013.

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

FDIS	Report on voting
40/2446/FDIS	40/2459/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.

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

This International Standard is to be used in conjunction with IEC 60384-1:2016.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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
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https://standards.iteh.ai/catalog/standards/sist/a7f3ed84-df07-4501-ba65-9d31e83d5115/iec-60384-14-2-2016

INTRODUCTION

0 Blank detail specification

0.1 General

This blank detail specification forms the basis for a uniform procedure for a common International Safety Mark. It implements the approval schedule for safety tests in IEC 60384-14:2013, 1.4.2, requires a declaration of design for parameters relevant to safety and indicates conformance tests to be conducted on every lot prior to its release and requalification tests depending on changes to the declared design.

In comparison with IEC 60384-14-1 which provides quality conformance and safety tests, this specification is restricted to safety tests only.

The use of IEC 60384-14-1 may be more appropriate for components manufactured in mass production, whereas the employment of this specification may be necessary in those cases where approval and requalification tests contribute considerably to the costs of the product.

A blank detail specification is a supplementary document to the sectional specification and contains requirements for style, layout and minimum content of detail specifications. Detail specifications not complying with these requirements may not be considered as being in accordance with IEC specifications, nor should they so be described.

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In the preparation of detail specifications the content of 1.4 of the sectional specification should be taken into account.

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0.2 Identification of the detail specification

IEC 60384-14-2:2016
https://standards.iteh.ai/catalog/standards/sist/a7f3ed84-df07-4501-ba65-

The first page of the detail specification should have the layout recommended on the next page of this blank detail specification. The numbers between square brackets correspond to the following information which should be inserted at the position indicated:

[1] The "International Electrotechnical Commission" or the National Standards Organization under whose authority the detail specification is drafted.

[2] The IEC or National Standards number of the detail specification, date of issue and any further information required by the national system.

[3] The number and issue number of the IEC, or national, generic, or sectional specification, as relevant.

[4] If different from the IEC number, the national number of the detail specification, date of issue and any further information required by the national system, together with any amendment numbers.

0.3 Identification of the capacitor

[5] A short description of the type of capacitor or range of capacitors. The text should be suitable for an entry in the IECQ Register of approvals.

[6] Information on typical construction (when applicable). The text should be suitable for an entry in the IECQ Register of approvals.

[7] Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the appropriate national or international documents for outlines. Alternatively, the drawing may be given in an annex to the detail specification, but [7] should always contain an illustration of the general outer appearance of the component.

[8] The level(s) of quality assessment covered by the detail specification, as appropriate.

[9] Reference data giving information on the most important properties of the component which allow comparison between the various component types intended for the same or similar applications.

	[1]	IEC 60384-14-2-XXX	[2]
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH: IEC 60384-1 IEC 60384-14	[3]	IEC 60384-14-2	[4]
		FIXED CAPACITORS FOR ELECTROMAGNETIC INTERFERENCE SUPPRESSION AND CONNECTION TO THE SUPPLY MAINS (SAFETY TESTS ONLY)	[5]
Outline drawing: [see Table 1] [first angle projection] [Other shapes are permitted within the dimensions given]	[7]	TYPICAL CONSTRUCTION (examples)	[6]
		Class/subclass Safety tests only	[8]
NOTE For [1] to [9], see 0.2 and 0.3.			

Information on the availability of components qualified to this detail specification is given in the Qualified products list	[9]

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IEC 60384-14-2:2016
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FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 14-2: Blank detail specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains – Safety tests only

1 General data

1.1 Recommended method(s) of mounting (to be inserted)

See IEC 60384-14:2013, 1.4.2.

1.2 Dimensions

The dimensions expressed as maximum dimensions or as nominal dimensions with a tolerance shall be given in the manufacturer's specification.

1.3 Ratings and characteristics

Ratings and characteristics are as listed below:

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a) Capacitance range
b) Tolerance on nominal capacitance
c) Rated voltage
d) Rated current (if applicable)
e) Climatic category
f) Rated temperature
g) Tangent of loss angle
h) Insulation resistance
i) Category of passive flammability

IEC 60384-14-2:2016
https://standards.iteh.ai/catalog/standards/sist/a7f3ed84-df07-4501-ba65-9d31e83d5115/iec-60384-14-2-2016

Values of capacitance related to the rated voltage, dimensions and ordering code/type designation shall be given in the manufacturer's specification.

1.4 Normative references

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.

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

IEC 60384-14:2013, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60384-14-1, *Fixed capacitors for use in electronic equipment – Part 14-1: Blank detail specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains – Assessment level D*

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

1.5 Marking

The marking of the capacitor, if any, and the packaging shall be in accordance with IEC 60384-14:2013, 1.6.

The details of the marking of the component and packaging shall be given in full in the detail specification.

1.6 Ordering information

Orders for capacitors covered by this specification shall contain, in clear or in coded form, the following information:

a) nominal capacitance;

b) tolerance on nominal capacitance;

c) rated voltage;

d) manufacturer's type designation;

e) number and issue reference of the detail specification and style reference.

1.7 Additional information (not required for inspection purposes)

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1.8 Additional or increased severities or requirements to those specified in the generic and/or sectional specification

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Additional or increased requirements should be specified only when essential. They should be given in Table 1.

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Table 1 – Other characteristics

This table is to be used for defining characteristics which are additional to or more severe than those given in the generic and/or sectional specification.

2 Inspection requirements

2.1 Procedures

For qualification approval the procedures shall be in accordance with IEC 60384-14:2013, 3.4.

2.2 Test schedules

2.2.1 Initial approval

See Table 2 of this specification.

2.2.2 Requalification

See Table 3 of this specification in association with Annex A of this specification.

Table 2 – Initial approval test schedule for safety tests only *(1 of 2)*

Subclause number and test[a]	D or ND	Conditions of test[a]	n and c[a, b]	Performance requirements[a]
Group 0	ND		See Table 3	
4.1 Visual examination				No visible damage Marking legible
4.2.2 Capacitance				Within specified tolerance
4.2.4 Resistance[c]				Within specified tolerance
4.2.1 Voltage proof				No permanent breakdown or flashover
4.2.5 Insulation resistance				As in Table 11
Group 1A	D		See Table 3	
4.1.1 Creepage distances and clearances				As 4.1.1
4.3 Robustness of terminations		Severity: …[d]		No visible damage
4.4 Resistance to soldering heat[c, e]		No pre-drying Method: …[d]		
4.20 Solvent resistance of the marking				Legible marking
4.4.2 Final measurements		Visual examination		No visible damage
		Capacitance		See Table 13
		Resistance[c]		See Table 13
Group 2	D		See Table 3	
4.12 Damp heat, steady state				
4.12.1 Initial measurements[e]		Have been made in Group 0		
4.12.2 Test conditions		Ceramic capacitors: half of the sample: U_R other half: no voltage		
4.12.3 Final inspection and measurements		Visual examination		No visible damage Legible marking
		Capacitance		See Table 15
		Resistance[c]		See Table 15
		Voltage proof		See Table 15
		Insulation resistance		See Table 15

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