National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 60384-4-2:2007

ICS 31.060.50

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT - PART 4-2: BLANK DETAIL SPECIFICATION - FIXED ALUMINIUM ELECTROLYTIC CAPACITORS WITH SOLID (MNO2) ELECTROLYTE - ASSESSMENT LEVEL EZ (IEC 60384-4 -2:2007 (EQV))

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60384-4-2

May 2007

ICS 31.060.50

English version

Fixed capacitors for use in electronic equipment - Part 4-2: Blank detail specification - Fixed aluminium electrolytic capacitors with solid (MnO_2) electrolyte - Assessment level EZ

(IEC 60384-4-2:2007)

Condensateurs fixes utilisés dans les équipements électroniques - Partie 4-2: Spécification particulière cadre - Condensateurs fixes électrolytiques en aluminium à électrolyte solide (MnO_2) - Niveau d'assurance de la qualité EZ

(CEI 60384-4-2:2007)

Festkondensatoren zur Verwendung in Geräten der Elektronik - Teil 4-2: Vordruck für Bauartspezifikation - Aluminium-Elektrolyt-Kondensatoren mit festem (MnO_2) Elektrolyten - Bewertungsstufe EZ

(IEC 60384-4-2:2007)

This European Standard was approved by CENELEC on 2007-04-01. 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 Central Secretariat or to any CENELEC member.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 60384-4-2:2007 E

Foreword

The text of document 40/1763/CDV, future edition 2 of IEC 60384-4-2, prepared by IEC TC 40, Capacitors and resistors for electronic equipment, was submitted to the IEC-CENELEC parallel Unique Acceptance Procedure and was approved by CENELEC as EN 60384-4-2 on 2007-04-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2008-01-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-04-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60384-4-2:2007 was approved by CENELEC as a European Standard without any modification.

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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.

Publication	Year	Title	EN/HD	Year
IEC 60384-1 (mod)	-[1)]	Fixed capacitors for use in electronic equipment - Part 1: Generic specification	EN 60384-1 + corr. October	2001[2)] 2001
IEC 60384-4	-[1)]	Fixed capacitors for use in electronic equipment - Part 4: Sectional specification - Aluminium electrolytic capacitors with solid (MnO_2) and non-solid electrolyte	EN 60384-4	2007[2)]
IEC 60410	-[1)]	Sampling plans and procedures for inspection by attributes		-

[1)] Undated reference.

[2)] Valid edition at date of issue.

INTERNATIONAL STANDARD

IEC 60384-4-2

QC 300302

Second edition
2007-03

Fixed capacitors for use in electronic equipment –

Part 4-2:
Blank detail specification –
Fixed aluminium electrolytic capacitors with solid (MnO2) electrolyte –
Assessment level EZ

Reference number
IEC 60384-4-2:2007(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

Further information on IEC publications

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- **IEC Web Site (www.iec.ch)**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 4-2: Blank detail specification – Fixed aluminium electrolytic capacitors with solid (MnO2) electrolyte – Assessment level EZ

FOREWORD

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International Standard IEC 60384-4-2 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 1985 and its amendment 1 (1992) and amendment 2 (1996). This edition constitutes a minor revision related to tables, figures and references.

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

CDV	Report on voting
40/1763/CDV	40/1821/RVC

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 QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

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 publication will remain unchanged until the maintenance result 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.

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

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 4-2: Blank detail specification – Fixed aluminium electrolytic capacitors with solid (MnO_2) electrolyte – Assessment level EZ

Blank detail specification

A blank detail specification is a supplementary document to the sectional specification and contains requirements for style and 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 shall they be so described.

In the preparation of detail specifications, the contents of 1.4 of the sectional specification shall be taken into account.

The numbers between brackets on the first page correspond to the following information which shall be inserted in the position indicated.

Identification of the detail specification

[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, data of issue and any further information required by the national system.

[3] The number and issue number of the IEC or national generic specification.

[4] The IEC number of the blank detail specification.

Identification of the capacitor

[5] A short description of the type of capacitor.

[6] Information on typical construction (when applicable).

NOTE When the capacitor is not designed for use in printed board applications, this is clearly stated in the detail specification in this position.

[7] Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the national or international documents for outlines. Alternatively, this drawing may be given in an annex to the detail specification.

[8] Application or group of applications covered and/or assessment level.

NOTE The assessment level(s) to be used in a detail specification are selected from 3.5.4 of the sectional specification. This implies that one blank detail specification may be used in combination with several assessment levels, provided the grouping of the tests does not change.

[9] Reference data on the most important properties, to allow comparison between the various capacitor types.

[1]	IEC 60384-4-2- XXX [2] QC 300302- XXX
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH: IEC 60384-1 IEC 60384-4 [3]	IEC 60384-4-2 [4] QC 300302
	FIXED ALUMINIUM ELECTROLYTIC CAPACITORS WITH SOLID (MnO_2) ELECTROLYTE [5]
Outline drawing: (see Table 1) (…angle projection) [7] (Other shapes are permitted within the dimensions given.)	[6]
	Assessment level(s): EZ [8] Performance grade:

Information on the availability of components qualified to this detail specification is given in the IEC QC 001005.

[9]

1 General data

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

See 1.4.2 of IEC 60384-4.

1.2 Di006Densions

Table 1 – Case size reference and dimensions

Case size reference	Dimensions mm						
	Ø	*L*	*H*	*d*	.....		

NOTE 1 When there is no case size reference, Table 1 may be omitted and the dimensions should be given in Table 2, which then becomes Table 1.

NOTE 2 The dimensions should be given as maximum dimensions or as nominal dimensions with a tolerance.

1.3 Ratings and characteristics

Capacitance range (see Table 2)

Tolerance on rated capacitance

Rated voltage (see Table 2)

Category voltage (if applicable) (see Table 2)

Climatic category

Rated temperature

Rated ripple current (see Table 3)

Tangent of loss angle (see Table 3)

NOTE Instead of the tangent of loss angle (tan δ), the equivalent series resistance ESR may be specified in accordance with 4.3.3.2d) of IEC 60384-4.

Leakage current

Impedance (if applicable) (see Table 3)

Reverse voltage (if required)

Insulation resistance (if applicable)

Table 2 – Values of capacitance and of voltage related to case sizes

Rated voltage				
Category voltage*				
	Case size	Case size	Case size	Case size
Rated capacitance µF				

* If different from the rated voltage.