

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Fixed capacitors for use in electronic equipment –  
Part 3: Sectional specification – Surface mount fixed tantalum electrolytic  
capacitors with solid (MnO<sub>2</sub>) electrolyte**

**Condensateurs fixes utilisés dans les équipements électroniques –  
Partie 3: Spécification intermédiaire – Condensateurs fixes électrolytiques  
au tantale pour montage en surface, à électrolyte solide (MnO<sub>2</sub>)**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
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## CONTENTS

FOREWORD.....	5
1 General.....	7
1.1 Scope.....	7
1.2 Object.....	7
1.3 Normative references.....	7
1.4 Information to be given in a detail specification.....	8
1.4.1 General.....	8
1.4.2 Outline drawing and dimensions.....	8
1.4.3 Mounting.....	8
1.4.4 Ratings and characteristics.....	8
1.4.5 Marking.....	9
1.5 Terms and definitions.....	9
1.6 Marking.....	9
1.6.1 General.....	9
1.6.2 Information for marking.....	9
1.6.3 Marking on capacitors.....	9
1.6.4 Marking on packaging.....	10
2 Preferred ratings and characteristics.....	10
2.1 Preferred characteristics.....	10
2.2 Preferred values of ratings.....	10
2.2.1 Nominal capacitance ( $C_N$ ).....	10
2.2.2 Tolerance on nominal capacitance.....	11
2.2.3 Rated voltage ( $U_R$ ).....	11
2.2.4 Category voltage ( $U_C$ ).....	11
2.2.5 Surge voltage ( $U_{RS}$ or $U_{CS}$ ).....	11
2.2.6 Rated temperature.....	11
3 Quality assessment procedures.....	12
3.1 Primary stage of manufacture.....	12
3.2 Structurally similar components.....	12
3.3 Certified test records of released lots.....	12
3.4 Qualification approval procedures.....	12
3.4.1 General.....	12
3.4.2 Qualification approval on the basis of the fixed sample size procedure.....	12
3.4.3 Tests.....	13
3.5 Quality conformance inspection.....	20
3.5.1 Formation of inspection lots.....	20
3.5.2 Test schedule.....	20
3.5.3 Delayed delivery.....	20
3.5.4 Assessment levels.....	20
4 Test and measurement procedures.....	21
4.1 Drying.....	22
4.2 Measuring conditions.....	22
4.3 Mounting.....	22
4.3.1 General.....	22
4.3.2 Initial inspection.....	22
4.3.3 Final inspections.....	22

4.4	Visual examination and check of dimensions .....	22
4.4.1	General .....	22
4.4.2	Visual examination and check of dimensions .....	22
4.4.3	Requirements .....	22
4.5	Electrical tests .....	22
4.5.1	Leakage current .....	22
4.5.2	Capacitance .....	23
4.5.3	Tangent of loss angle ( $\tan \delta$ ) .....	23
4.5.4	Impedance (if required) .....	23
4.5.5	Equivalent series resistance (ESR) (if required) .....	24
4.6	Resistance to soldering heat .....	24
4.6.1	General .....	24
4.6.2	Test conditions .....	24
4.6.3	Recovery .....	24
4.6.4	Final inspections and requirements .....	25
4.7	Solderability .....	25
4.7.1	General .....	25
4.7.2	Test conditions .....	25
4.7.3	Final inspections and requirements .....	25
4.8	Shear test .....	25
4.8.1	General .....	25
4.8.2	Final inspections and requirements .....	25
4.9	Substrate bending test .....	25
4.9.1	General .....	25
4.9.2	Final inspections and requirements .....	25
4.10	Rapid change of temperature .....	25
4.10.1	General .....	25
4.10.2	Initial inspection .....	25
4.10.3	Test conditions .....	25
4.10.4	Recovery .....	26
4.10.5	Final inspections and requirements .....	26
4.11	Climatic sequence (if required) .....	26
4.11.1	General .....	26
4.11.2	Initial inspections .....	26
4.11.3	Dry heat .....	26
4.11.4	Damp heat, cyclic, test Db, first cycle .....	26
4.11.5	Cold .....	26
4.11.6	Damp heat, cyclic, test Db, remaining cycles .....	26
4.11.7	Recovery .....	26
4.11.8	Final inspections and requirements .....	26
4.12	Damp heat, steady state (if required) .....	26
4.12.1	General .....	26
4.12.2	Initial inspections .....	27
4.12.3	Test conditions .....	27
4.12.4	Recovery .....	27
4.12.5	Final inspections and requirements .....	27
4.13	Characteristics at high and low temperature .....	27
4.13.1	General .....	27
4.13.2	Inspections and requirements .....	27

4.14	Surge voltage.....	27
4.14.1	General .....	27
4.14.2	Initial inspections .....	27
4.14.3	Test conditions .....	27
4.14.4	Recovery .....	28
4.14.5	Final inspections and requirements .....	28
4.15	Endurance .....	28
4.15.1	General .....	28
4.15.2	Initial inspections .....	28
4.15.3	Test conditions .....	28
4.15.4	Recovery .....	28
4.15.5	Final inspections and requirements .....	29
4.16	Reverse voltage (if required) .....	29
4.16.1	Initial inspections .....	29
4.16.2	Test conditions .....	29
4.16.3	Recovery .....	29
4.16.4	Final inspections and requirements .....	29
4.17	Component solvent resistance (if required) .....	29
4.18	Solvent resistance of the marking (if required) .....	29
4.19	High surge current (if required) .....	29
	Bibliography .....	30
	Table 1 – Letter code and digit.....	10
	Table 2 – Category voltages and surge voltages.....	11
	Table 3 – Sampling plan for qualification approval, assessment level EZ.....	14
	Table 4 – Test schedule for qualification approval .....	15
	Table 5 – Lot-by-lot inspection .....	21
	Table 6 – Periodic inspection .....	21
	Table 7 – Test temperatures .....	28

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –****Part 3: Sectional specification – Surface mount fixed tantalum electrolytic capacitors with solid (MnO<sub>2</sub>) electrolyte**

## FOREWORD

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International Standard IEC 60384-3 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This fourth edition cancels and replaces the third edition published in 2006 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 2:2011 (sixth 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 standard is based on the following documents:

FDIS	Report on voting
40/2464/FDIS	40/2470/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 the 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 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
- amended.



## **FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –**

### **Part 3: Sectional specification – Surface mount fixed tantalum electrolytic capacitors with solid (MnO<sub>2</sub>) electrolyte**

## **1 General**

### **1.1 Scope**

This part of IEC 60384 applies to fixed tantalum electrolytic surface mount capacitors with solid (MnO<sub>2</sub>) electrolyte primarily intended for d.c. applications for use in electronic equipment.

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 need additional requirements.

The following two styles are considered:

- Style 1: Capacitors protected with external materials;
- Style 2: Capacitors unprotected with external materials.

### **1.2 Object**

The object of this standard 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 should be of equal or higher performance level, because lower performance levels are not permitted.

### **1.3 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 60062, *Marking codes for resistors and capacitors*

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 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*

ISO 3, *Preferred numbers – Series of preferred numbers*