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IEC 60384-17

Edition 3.0 2019-03
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Fixed capacitors for use in electronic equipment – Part 17: Sectional specification – Fixed metallized polypropylene film dielectric AC and pulse capacitors

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.060.30

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 17: Sectional specification – Fixed metallized polypropylene film dielectric AC and pulse capacitors

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 60384-17 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This third edition cancels and replaces the second edition published in 2005. This edition constitutes a technical revision.

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

a) all parts of the document have been revised based on the ISO/IEC Directives, Part 2:2016 (seventh edition) and harmonization between other similar kinds of documents;
b) tables and Clause 4 have been revised so as to prevent duplications and contradictions;
c) new damp heat steady-state robustness classes with test conditions have been added in text, in Clause 4 and in Annex A.

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

FDIS	Report on voting
40/2654/FDIS	40/2664/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 web site.

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

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FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 17: Sectional specification – Fixed metallized polypropylene film dielectric AC and pulse capacitors

1 General

1.1 Scope

This part of IEC 60384 applies to fixed capacitors with metallized electrodes and polypropylene dielectric for use in electronic equipment.

NOTE Capacitors that have mixed ~~foil~~ film and metallized electrodes are also within the scope of this standard.

These capacitors may have "self-healing" properties depending on conditions of use.

Capacitors covered by this specification are mainly intended for use with alternating voltage and/or for pulse applications. The maximum reactive power applicable is 10 000 var and the maximum peak voltage is 3 000 V.

Capacitors for reactive power exceeding 500 var, and to which a maximum peak voltage of 2 500 V at 50 Hz can be applied, are not covered by this document, except when they are the highest part of a range of reactive power mainly situated below 500 var at 50 Hz.

This document is not intended to cover capacitance values higher than 20 µF.

Two performance grades of capacitors are covered, Grade 1 for long-life application and Grade 2 for general application.

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

Capacitors for electrical shock hazard protection (covered by IEC 60065 of IEC technical committee 61) and fluorescent lamp and motor capacitors (covered by IEC 60252-1 and IEC 60252-2 of IEC technical committee 33), and capacitors for use in tubular fluorescent and other discharge lamp circuits (covered by IEC 61048 and IEC 61049 of IEC technical committee 34) are also excluded.

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 ~~an~~ 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 60062, *Marking codes for resistors and capacitors*

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~~IEC 60063:1963, *Preferred number series for resistors and capacitors*~~
~~Amendment 1 (1967)~~
~~Amendment 2 (1977)~~

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 60384-16, *Fixed capacitors for use in electronic equipment – Part 16: Sectional specification: Fixed metallized polypropylene film dielectric d.c. capacitors*

~~IEC 60384-17-1, *Fixed capacitors for use in electronic equipment – Part 17: Blank detail specification: Fixed metallized polypropylene film dielectric a.c. and pulse capacitors. Assessment level E*~~

~~IEC 60410, *sampling plans and procedures for inspection by attributes*~~

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

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

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Edition 3.0 2019-03

INTERNATIONAL STANDARD

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Fixed capacitors for use in electronic equipment – Part 17: Sectional specification – Fixed metallized polypropylene film dielectric AC and pulse capacitors

Condensateurs fixes utilisés dans les équipements électroniques – Partie 17: Spécification intermédiaire – Condensateurs fixes pour tension alternative et pour impulsions à diélectrique en film de polypropylène métallisé

IEC 60384-17:2019-03(en-fr)

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Part 17: Sectional specification – Fixed metallized polypropylene film dielectric AC and pulse capacitors

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

IEC 60384-16, *Fixed capacitors for use in electronic equipment – Part 16: Sectional specification: Fixed metallized polypropylene film dielectric d.c. capacitors*

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

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

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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CONDENSATEURS FIXES UTILISÉS DANS LES ÉQUIPEMENTS ÉLECTRONIQUES –

Partie 17: Spécification intermédiaire – Condensateurs fixes pour tension alternative et pour impulsions à diélectrique en film de polypropylène métallisé

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La Norme internationale IEC 60384-17 a été établie par le comité d'études 40 de l'IEC: Condensateurs et résistances pour équipements électroniques.

Cette troisième édition annule et remplace la deuxième édition parue en 2005. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

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a) toutes les parties du document ont été révisées sur la base des Directives ISO/IEC, Partie 2:2016 (septième édition) et harmonisées avec les autres types de documents similaires;

b) les tableaux et l'Article 4 ont été révisés afin d'éliminer les doublons et les contradictions;

c) de nouvelles classes de résistance à la chaleur humide continue (avec les conditions d'essai associées) ont été ajoutées à l'Article 4 et à l'Annexe A.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
40/2654/FDIS	40/2664/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 60384, publiées sous le titre général *Condensateurs fixes utilisés dans les équipements électroniques*, peut être consultée sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "http://webstore.iec.ch" dans les données relatives au document recherché. A cette date, le document sera

- reconduit,
- supprimé,
- remplacé par une édition révisée, ou
- amendé.

Le contenu du corrigendum de décembre 2020 a été pris en considération dans cet exemplaire.

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CONDENSATEURS FIXES UTILISÉS DANS LES ÉQUIPEMENTS ÉLECTRONIQUES –

Partie 17: Spécification intermédiaire – Condensateurs fixes pour tension alternative et pour impulsions à diélectrique en film de polypropylène métallisé

1 Généralités

1.1 Domaine d'application

La présente partie de l'IEC 60384 s'applique aux condensateurs fixes à électrodes métallisées et à diélectrique en polypropylène destinés aux équipements électroniques.

NOTE Les condensateurs équipés à la fois d'électrodes métallisées et d'électrodes en film sont également couverts par la présente norme.

Ces condensateurs peuvent avoir des propriétés "d'autorégénération" en fonction des conditions d'utilisation.

Les condensateurs couverts par la présente spécification sont principalement destinés à être utilisés dans des applications à impulsions et/ou à tension alternative. La puissance réactive maximale est 10 000 var et la tension de crête maximale est 3 000 V.

Les condensateurs destinés à être utilisés à des puissances réactives supérieures à 500 var et où une tension de crête maximale de 2 500 V à 50 Hz peut être appliquée ne sont pas couverts par le présent document, sauf s'ils sont dans la partie haute d'une plage de puissances réactives situées principalement sous 500 var à 50 Hz.

Le présent document n'est pas destiné à couvrir des valeurs de capacité supérieures à 20 µF.

Deux classes de performance sont couvertes, la classe 1 pour les applications de longue durée de vie et la classe 2 pour les applications d'usage courant.

Les condensateurs d'antiparasitage ne sont pas inclus, mais sont couverts par l'IEC 60384-14.

Les condensateurs de protection contre les dangers de chocs électriques (couverts par l'IEC 60065 du comité d'études 61 de l'IEC) ainsi que les condensateurs pour moteurs et pour lampes fluorescentes (couverts par l'IEC 60252-1 et l'IEC 60252-2 du comité d'études 33 de l'IEC) et les condensateurs destinés à être utilisés dans les circuits de lampes tubulaires à fluorescence et autres lampes à décharge (couverts par l'IEC 61048 et l'IEC 61049 du comité d'études 34 de l'IEC) sont également exclus.

1.2 Objet

Le présent document a pour objet de prescrire les valeurs assignées et caractéristiques préférentielles, de choisir les procédures d'assurance de la qualité, les essais et les méthodes de mesure pertinents dans l'IEC 60384-1:2016, et de spécifier les exigences de performance générales pour ce type de condensateur. Les sévérités et les exigences d'essai prescrites dans les spécifications particulières se rapportant à cette spécification intermédiaire doivent présenter un niveau de performance supérieur ou égal. Des niveaux de performance inférieurs ne sont pas admis.

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1.3 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60062, *Codes de marquage des résistances et des condensateurs*

IEC 60068-1:2013, *Essais d'environnement – Partie 1: Généralités et lignes directrices*

IEC 60384-1:2016, *Condensateurs fixes utilisés dans les équipements électroniques – Partie 1: Spécification générique*

IEC 60384-16, *Fixed capacitors for use in electronic equipment – Part 16: Sectional specification: Fixed metallized polypropylene film dielectric d.c. capacitors* (disponible en anglais seulement)

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

ISO 3, *Nombres normaux – Séries de nombres normaux*