



INTERNATIONAL STANDARD



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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.060.10

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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

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International Standard IEC 60384-21 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 2011. This edition 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 2:2016 to the extent practicable, and for harmonizing with IEC 60384-22;
- b) deletion of the description on the permissible reactive power in 6.2.2 because it is not appropriate for the purposes of this document;
- c) the dimensions of 0201M in Annex A have been added.

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

FDIS	Report on voting
40/2639/FDIS	40/2651/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.

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.

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

- reconfirmed,
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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 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 document 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~~ are of equal or higher performance levels; lower performance levels are not permitted.

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

IEC 60068-1:~~1988~~ 2013, Environmental testing – Part 1: General and guidance

IEC 60068-2-58:~~2004~~ 2015, 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 60068-2-58:2015/AMD1:2017

IEC 60384-1:~~2008~~ 2016, 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

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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IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-58:2015, *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 60068-2-58:2015/AMD1:2017

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

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

ISO 3:1973, *Preferred numbers – Series of preferred numbers*

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Withholding

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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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La Norme internationale IEC 60384-21 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 2011. Cette édition constitue une révision technique.

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

- a) révision de la structure conformément aux directives ISO/IEC, Partie 2:2016, dans la mesure du possible, et pour l'harmonisation avec l'IEC 60384-22;

- b) suppression de la description de la puissance réactive admissible en 6.2.2, parce qu'elle n'est pas adaptée aux besoins du présent document;
- c) les dimensions de 0201M à l'Annexe A ont été ajoutées.

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

FDIS	Rapport de vote
40/2639/FDIS	40/2651/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 à la publication recherchée. A cette date, le document sera

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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

1 Domaine d'application

La présente partie de l'IEC 60384 est applicable aux condensateurs multicouches fixes à diélectriques en céramique pour montage en surface non encapsulés, Classe 1, utilisés dans les équipements électroniques. Ces condensateurs possèdent des pastilles de connexion métallisées ou des bandes de brasure et sont destinés à être montés sur des cartes imprimées ou directement sur des substrats de circuits hybrides.

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

L'objet du présent document est de prescrire des caractéristiques et des valeurs assignées préférentielles et de sélectionner à partir de l'IEC 60384-1 les procédures d'assurance de la qualité, les essais et les méthodes de mesure appropriées et de donner les exigences de performance générales pour ce type de condensateur. Les exigences et les sévérités des essais prescrits dans les spécifications particulières se référant à la présente spécification intermédiaire sont d'un niveau de performance supérieur ou égal, des niveaux de performance inférieurs ne sont pas admis.

2 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 60063, *Séries de valeurs normales pour résistances et condensateurs*

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

IEC 60068-2-58:2015, *Essais d'environnement – Partie 2-58: Essais – Essai Td – Méthodes d'essai de la soudabilité, résistance de la métallisation à la dissolution et résistance à la chaleur de brasage des composants pour montage en surface (CMS)*
IEC 60068-2-58:2015/AMD1:2017

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

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

ISO 3:1973, *Nombres normaux – Séries de nombres normaux*