

Fixed capacitors for use in electronic equipment —

**Part 20: Sectional specification —
Fixed metallized polyphenylene sulfide
film dielectric surface mount d.c.
capacitors**

ICS 31.060.10

National foreword

This British Standard is the UK implementation of EN 60384-20:2008. It is identical to IEC 60384-20:2008. It supersedes BS EN 60384-20:1999 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/40X, Capacitors and resistors for electronic equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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**Fixed capacitors for use in electronic equipment -
Part 20: Sectional specification -
Fixed metallized polyphenylene sulfide film
dielectric surface mount d.c. capacitors
(IEC 60384-20:2008 + corrigendum 2008)**

Condensateurs fixes utilisés
dans les équipements électroniques -
Partie 20: Spécification intermédiaire -
Condensateurs fixes pour montage
en surface pour courant continu
à diélectrique en film de sulfure
de polyphénylène métallisé
(CEI 60384-20:2008 +
corrigendum 2008)

Festkondensatoren zur Verwendung
in Geräten der Elektronik -
Teil 20: Rahmenspezifikation -
Oberflächenmontierbare
Festkondensatoren für Gleichspannung
mit metallisierter Polyphenyl-Sulfid-Folie
als Dielektrikum
(IEC 60384-20:2008 +
Corrigendum 2008)

This European Standard was approved by CENELEC on 2008-02-01. 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

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Foreword

The text of document 40/1871/FDIS, future edition 2 of IEC 60384-20, prepared by IEC TC 40, Capacitors and resistors for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60384-20 on 2008-02-01.

This European Standard supersedes EN 60384-20:1999.

EN 60384-20:2008 constitutes a minor revision related to tables and references.

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) | 2008-11-01 |
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Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60384-20:2008 + corrigendum February 2008 was approved by CENELEC as a European Standard without any modification.

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FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 20: Sectional specification – Fixed metallized polyphenylene sulfide film dielectric surface mount d.c. capacitors

1 General

1.1 Scope

This part of IEC 60384 is applicable to fixed surface mount capacitors for direct current, with metallized electrodes and polyphenylene sulfide dielectric for use in electronic equipment. These capacitors have metallized connecting pads or soldering strips and are intended to be mounted directly onto substrates for hybrid circuits or onto printed boards. These capacitors may have "self-healing properties" depending on conditions of use. They are primarily intended for applications where the a.c. component is small with respect to the rated voltage.

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

1.2 Object

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

1.3 Normative references

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.

IEC 60062, *Marking codes for resistors and capacitors*

IEC 60063, *Preferred number series for resistors and capacitors*

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

NOTE For the tests in the IEC 60068 series of publications, the editions referenced in the applicable test clauses of the generic specification are applicable.

IEC 60384-1:1999, *Fixed capacitors for use in electronic equipment – Part 1: Generic specification*

IEC 60410, *Sampling plans and procedures for inspection by attributes*

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

1.4 Information to be given in a detail specification

Detail specifications shall be derived from the relevant blank detail specification.



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Detail specifications shall not specify requirements inferior to those of the generic, sectional or blank detail specification. When more severe requirements are included, they shall be listed in 1.9 of the detail specification and indicated in the test schedules, for example by an asterisk.

NOTE The information given in 1.4.1 may for convenience, be presented in tabular form.

The following information shall be given in each detail specification and the values quoted shall preferably be selected from those given in the appropriate clause of this sectional specification.

1.4.1 Outline drawing and dimensions

There shall be an illustration of the capacitor as an aid to easy recognition and for comparison of the capacitor with others. Dimensions and their associated tolerances, which affect interchangeability and mounting, shall be given in the detail specification. All dimensions shall preferably be stated in millimetres, however, when the original dimensions are given in inches, the converted metric dimensions in millimetres shall be added.

Normally the numerical values shall be given for the length, width and height of the body. When necessary, for example when a number of items (sizes and capacitance/voltage ranges) is covered by a detail specification, the dimensions and their associated tolerances shall be placed in a table below the drawing.

When the configuration is other than described above, the detail specification shall state such dimensional information as will adequately describe the capacitor.

1.4.2 Mounting

The detail specification shall give guidance on methods of mounting for normal use. Mounting for test and measurement purposes (when required) shall be in accordance with 4.1.

1.4.3 Ratings and characteristics

The ratings and characteristics shall be in accordance with the relevant clauses of this specification, together with the following.

1.4.3.1 Rated capacitance range

See 2.2.1.

NOTE When products approved to the detail specification have different ranges, the following statement should be added: "The range of capacitance values available in each voltage range is given on the IEC online service, www.iecq.org/certificates."

1.4.3.2 Particular characteristics

Additional characteristics may be listed, when they are considered necessary to specify adequately the component for design and application purposes.

1.4.3.3 Soldering

The detail specification shall prescribe the test methods, severities and requirements applicable for the solderability and the resistance to soldering heat tests.

1.4.4 Marking

The detail specification shall specify the content of the marking on the capacitor and on the package. Deviations from 1.6 shall be specifically stated.

1.5 Terms and definitions

For the purposes of this document and in addition to the applicable terms and definitions of IEC 60384-1 the following definitions apply.

1.5.1

surface mount capacitor

capacitor whose small dimensions and nature or shape of terminations make it suitable for surface mounting in hybrid circuits and on printed boards

1.5.2

performance grade 1 capacitors (long-life)

capacitors for long-life applications with stringent requirements for the electrical parameters

1.5.3

performance grade 2 capacitors (general purpose)

capacitors for general application where the stringent requirements for grade 1 capacitors are not necessary

1.5.4

performance grade 3 capacitors (low power, miniature type)

miniature type capacitors having a rated voltage of less than 63 V and for which less stringent requirements than for grade 2 capacitors are acceptable

1.5.5

rated voltage (U_R)

maximum d.c. voltage which may be applied continuously to a capacitor at the rated temperature

NOTE The sum of the d.c. voltage and the peak a.c. voltage applied to the capacitor should not exceed the rated voltage. The value of the peak a.c. voltage should not exceed the following percentages of the rated voltage at the frequencies stated and should not be greater than 280 V,

50 Hz:	20 %
100 Hz:	15 %
1 000 Hz:	3 %
10 000 Hz:	1 %

unless otherwise specified in the detail specification.

1.6 Marking

See 2.4 of IEC 60384-1, with the following details:

1.6.1 The information given in the marking is normally selected from the following list. The relative importance of each item is indicated by its position in the list:

- rated capacitance (in clear or code according to IEC 60062);
- rated voltage (d.c. voltage may be indicated by the symbol --- or —);
- tolerance on rated capacitance;
- category voltage;
- year and month (or week) of manufacture;
- manufacturer's name or trade mark;
- climatic category;
- manufacturer's type designation;