



BSI Standards Publication

Test methods for electrical materials, printed board and other interconnection structures and assemblies

Part 5-503: General test method for materials and assemblies – Conductive anodic filaments (CAF) testing of circuit boards (IEC 61189-5-503:2017)

National foreword

This British Standard is the UK implementation of EN 61189-5-503:2017. It is identical to IEC 61189-5-503:2017.

The UK participation in its preparation was entrusted to Technical Committee EPL/501, Electronic Assembly Technology.

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

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English Version

Test methods for electrical materials, printed board and other interconnection structures and assemblies - Part 5-503: General test method for materials and assemblies - Conductive anodic filaments (CAF) testing of circuit boards
(IEC 61189-5-503:2017)

Méthodes d'essai pour les matériaux électriques, les cartes imprimées et autres structures d'interconnexion et ensembles - Partie 5-503 : Méthodes d'essai générales pour les matériaux et les assemblages - Essais des filaments anodiques conducteurs (CAF) des cartes à circuit imprimé
(IEC 61189-5-503:2017)

Prüfverfahren für Elektromaterialien, Leiterplatten und andere Verbindungsstrukturen und Baugruppen - Teil 5-503: Allgemeine Prüfverfahren für Materialien und Baugruppen - Leitfähige anodische Fasern (CAF), Prüfung für Leiterplatten
(IEC 61189-5-503:2017)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

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The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2018-03-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-06-26

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60068-3-4	NOTE	Harmonized as EN 60068-3-4.
IEC 60068-3-5	NOTE	Harmonized as EN 60068-3-5.
IEC 60721-1	NOTE	Harmonized as EN 60721-1.
IEC 60721-2-1	NOTE	Harmonized as EN 60721-2-1.
IEC 60721-3-0	NOTE	Harmonized as EN 60721-3-0.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	2013	Environmental testing -- Part 1: General and guidance	EN 60068-1	2014
IEC 60068-2-30	-	Environmental testing -- Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-
IEC 60068-2-38	-	Environmental testing -- Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test	EN 60068-2-38	-
IEC 60068-2-66	-	Environmental testing -- Part 2-66: Test methods - Test Cx: Damp heat, steady state (unsaturated pressurized vapour)	EN 60068-2-66	-
IEC 60068-2-67	-	Environmental testing -- Part 2: Tests - Test Cy: Damp heat, steady state, accelerated test primarily intended for components	EN 60068-2-67	-
IEC 60068-2-78	-	Environmental testing -- Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60194	-	Printed board design, manufacture and assembly - Terms and definitions	-	-
IPC-TM-650 No 2.6.14.1	-	Electrochemical Migration Resistance Test	-	-
IPC-TM-650 No 2.6.25	-	Conductive Anodic Filament (CAF) Resistance Test: X-Y Axis	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**TEST METHODS FOR ELECTRICAL MATERIALS, PRINTED BOARD
AND OTHER INTERCONNECTION STRUCTURES AND ASSEMBLIES –****Part 5-503: General test method for materials and assemblies –
Conductive anodic filaments (CAF) testing of circuit boards**

FOREWORD

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International Standard IEC 61189-5-503 been prepared by IEC technical committee 91: Electronics assembly technology.

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

FDIS	Report on voting
91/1433/FDIS	91/1443/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 61189 series, published under the general title *Test methods for electrical materials, printed boards and other interconnection structures and assemblies*, 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,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

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TEST METHODS FOR ELECTRICAL MATERIALS, PRINTED BOARD AND OTHER INTERCONNECTION STRUCTURES AND ASSEMBLIES –

Part 5-503: General test method for materials and assemblies – Conductive anodic filaments (CAF) testing of circuit boards

1 Scope

This part of IEC 61189 specifies the conductive anodic filament (hereafter referred to as CAF) and specifies not only the steady-state temperature and humidity test, but also a temperature-humidity cyclic test and an unsaturated pressurized vapour test (HAST).

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

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-38, *Environmental testing – Part 2-38: Tests – Test Z/AD: Composite temperature/humidity cyclic test*

IEC 60068-2-66, *Environmental testing – Part 2: Test methods – Test Cx: Damp heat, steady state (unsaturated pressurized vapour)*

IEC 60068-2-67, *Environmental testing – Part 2: Tests – Test Cy: Damp heat, steady state, accelerated test primarily intended for components*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60194, *Printed board design, manufacture and assembly – Terms and definitions*

IPC-TM-650 No.2.6.14.1, *Electrochemical Migration Resistance Test [viewed 2017-01-31]. Available at: https://www.ipc.org/TM/2-6_2-6-14-1.pdf*

IPC-TM-650 No.2.6.25, *Conductive Anodic Filament (CAF) Resistance Test: X-Y Axis [viewed 2017-01-31]. Available at: https://www.ipc.org/4.0_Knowledge/4.1_Standards/test/2-6-25.pdf*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60194 and IEC 60068-1 as well as the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses: