BS EN IEC 61188-6-1:2021

BSI Standards Publication

Circuit boards and circuit board assemblies — Design and use

Part 6-1: Land pattern design — Generic requirements for land pattern on circuit boards

bsi.

National foreword

This British Standard is the UK implementation of EN IEC 61188-6-1:2021. It is identical to IEC 61188-6-1:2021. It supersedes BS EN 61188-5-1:2002, which is withdrawn.

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 committee manager.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 91/1636/CDV, future edition 1 of IEC 61188-6-1, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61188-6-1:2021.

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) 2021-12-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-03-30

This document supersedes EN 61188-5-1:2002 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61188-6-1:2021 was approved by CENELEC as a European Standard without any modification.

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

IEC 61188-5-1:2002	NOTE	Harmonized as EN 61188-5-1:2002 (not modified)
IEC 61188-5-2:2003	NOTE	Harmonized as EN 61188-5-2:2003 (not modified)
IEC 61188-5-3:2007	NOTE	Harmonized as EN 61188-5-3:2007 (not modified)
IEC 61188-5-4:2007	NOTE	Harmonized as EN 61188-5-4:2007 (not modified)
IEC 61188-5-5:2007	NOTE	Harmonized as EN 61188-5-5:2007 (not modified)
IEC 61188-5-6:2003	NOTE	Harmonized as EN 61188-5-6:2003 (not modified)
IEC 61188-5-8:2007	NOTE	Harmonized as EN 61188-5-8:2008 (not modified)
IEC 61188-6-2	NOTE	Harmonized as EN IEC 61188-6-2
IEC 61760-1	NOTE	Harmonized as EN IEC 61760-1

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CIRCUIT BOARDS AND CIRCUIT BOARD ASSEMBLIES – DESIGN AND USE –

Part 6-1: Land pattern design – Generic requirements for land pattern on circuit boards

FOREWORD

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IEC 61188-6-1 has been prepared by IEC technical committee 91: Electronics assembly technology. It is an International Standard.

This first edition cancels and replaces the first edition of IEC 61188-5-1 published in 2002, and constitutes a technical revision.

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

a) The content is completely updated to reflect current industry requirements. See Introduction.

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

Draft	Report on voting
91/1636/CDV	91/1671/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 61188 series, published under the general title *Circuit boards and circuit board assemblies – Design and use*, can be found on the IEC website.

Future documents in this series will carry the new general title as cited above. Titles of existing documents in this series will be updated at the time of the next edition.

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.

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INTRODUCTION

Explanation why the following standards will be replaced by the new IEC 6188-6 series:

IEC 61188-5-1:2002, *Printed boards and printed board assemblies – Design and use – Part 5-1: Attachment (land/joint) considerations – Generic requirements*

IEC 61188-5-2:2003, *Printed boards and printed board assemblies – Design and use – Part 5-2: Attachment (land/joint) considerations – Discrete components*

IEC 61188-5-3:2007, *Printed boards and printed board assemblies – Design and use – Part 5-3: Attachment (land/joint) considerations – Components with gull-wing leads on two sides*

IEC 61188-5-4:2007, *Printed boards and printed board assemblies – Design and use – Part 5-4: Attachment (land/joint) considerations – Components with J leads on two sides*

IEC 61188-5-5:2007, *Printed boards and printed board assemblies – Design and use – Part 5-5: Attachment (land/joint) considerations – Components with gull-wing leads on four sides*

IEC 61188-5-6:2003, *Printed boards and printed board assemblies – Design and use – Part 5-6: Attachment (land/joint) considerations – Chip carriers with J-leads on four sides*

IEC 61188-5-8:2007, *Printed board and printed board assemblies – Design and use – Part 5-8: Attachment (land/joint) considerations – Area array components (BGA, FBGA, CGA, LGA)*

Content is mostly equivalent to IPC-782A with Amendments 1 and 2, which was replaced in 2002 by IPC-7351. The component spectrum and pitch levels have dramatically increased since publication of the IEC 61188-5 (all parts) and the dimensioning concept does no longer fulfil the mounting and soldering requirements.

CIRCUIT BOARDS AND CIRCUIT BOARD ASSEMBLIES – DESIGN AND USE –

Part 6-1: Land pattern design – Generic requirements for land pattern on circuit boards

1 Scope

This part of IEC 61188 specifies the requirements for soldering surfaces on circuit boards. This includes lands and land pattern for surface mounted components and also solderable hole configurations for through-hole mounted components. These requirements are based on the solder joint requirements of the IEC 61191-1, IEC 61191-2, IEC 61191-3 and IEC 61191-4.

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

IEC 61191-1, *Printed board assemblies – Part 1: Generic specification – Requirements for soldered electrical and electronic assemblies using surface mount and related assembly technologies*

IEC 61191-2:2017, *Printed board assemblies – Part 2: Sectional specification – Requirements for surface mount soldered assemblies*

IEC 61191-3, *Printed board assemblies – Part 3: Sectional specification – Requirements for through-hole mount soldered assemblies*

IEC 61191-4, *Printed board assemblies – Part 4: Sectional specification – Requirements for terminal soldered assemblies*

IEC 61760-3, *Surface mounting technology – Part 3: Standard method for the specification of components for through hole reflow (THR) soldering*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60194, and the following apply.

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp