

TECHNICAL SPECIFICATION

**Process management for avionics – Electronic components for aerospace,
defence and high performance (ADHP) applications –
Part 1: General requirements for high reliability integrated circuits and discrete
semiconductors**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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Part 1: General requirements for high reliability integrated circuits and discrete semiconductors**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 03.100.50; 31.020; 49.060

ISBN 978-2-8322-2645-2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PROCESS MANAGEMENT FOR AVIONICS –
ELECTRONIC COMPONENTS FOR AEROSPACE, DEFENCE
AND HIGH PERFORMANCE (ADHP) APPLICATIONS –****Part 1: General requirements for high reliability
integrated circuits and discrete semiconductors**

FOREWORD

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- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 62686-1, which is a Technical Specification, has been prepared by IEC technical committee 107: Process management for avionics.

This second edition cancels and replaces the first edition, published in 2012. This edition constitutes a technical revision.

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

- a) adoption and modification of STACK Specification S/0001 revision 14 notice 3, *General requirements for integrated circuits and discrete semiconductors*;
- b) update of IEC semiconductor test methods;
- c) update of JEDEC semiconductor test methods; including addition of JEP148A, based on the Physics of Failure Risk and Opportunity assessment;
- d) update of Annex A with additional JEDEC and IEC test information;
- e) revision of lead-free termination finish requirements.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
107/248/DTS	107/259/RVC

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 62686 series, published under the general title *Process management for avionics – Electronic components for aerospace, defence and high performance (ADHP) applications*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

INTRODUCTION

This part of IEC 62686 includes all the requirements of STACK Specification S/0001 revision 14 notice 3 and contains revisions for alternative IEC qualification test methods and additional test information.

This Technical Specification complements IEC TS 62564-1 which is used for ADHP applications when additional manufacturer's data is required beyond the publicly available manufacturer published data sheets (e.g. when additional thermal performance data is required for thermally challenging applications or when additional verification data are needed, for example to comply with the requirements of RTCA DO-254/EUROCAE ED-80 for complex components for flight critical applications, etc.).

This Technical Specification can also be used to comply with the typical qualification requirements of IEC TS 62564-1. Further guidance is given in IEC TS 62239-1.

NOTE With the adoption of the STACK Specification S/0001 revision 14 notice 3 it will be possible for all existing STACK certified manufacturers to be audited by IECQ under the new STACK-IECQ joint venture.

Withdrawn