

# TECHNICAL SPECIFICATION

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**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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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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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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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 third edition cancels and replaces the second edition, published in 2015. This edition constitutes a technical revision.

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

- a) update related to obsolescence of STACK Specification S/0001 revision 14 notice 3;
- b) addition of alternative automotive methods of compliance and revision of Annex B initially related to cross-reference to STACK Specification S/0001;
- c) addition of an Annex C to include a requirement matrix for IEC TS 62686-1 verification.

The text of this Technical Specification is based on the following documents:

Draft TS	Report on voting
107/349/DTS	107/361A/RVDTS 107/361/RVDTS

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

A list of all 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.

## INTRODUCTION

This part of IEC 62686 includes all the requirements of the now obsolete STACK Specification S/0001 revision 14 notice 3 and also contains revisions for alternative strategies using for example automotive standards together with the option of using various qualification test methods and additional test information.

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

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

NOTE Existing STACK certified manufacturers can be audited by IECQ under the new STACK-IECQ joint venture or alternatively to the new IECQ automotive scheme.