

# INTERNATIONAL STANDARD

# IEC 60748-23-5

QC 165000-5

First edition  
2003-10

---

---

## **Semiconductor devices – Integrated circuits –**

### **Part 23-5: Hybrid integrated circuits and film structures – Manufacturing line certification – Procedure for qualification approval**

*Dispositifs à semiconducteurs –  
Circuits intégrés –*

*Partie 23-5:  
Circuits intégrés hybrides et structures par films –  
Certification de la ligne de fabrication –  
Procédure d'homologation*

© IEC 2003 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: [inmail@iec.ch](mailto:inmail@iec.ch) Web: [www.iec.ch](http://www.iec.ch)



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

V

*For price, see current catalogue*

## CONTENTS

FOREWORD .....	3
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 Qualification approval procedures .....	5
4.1 General .....	5
4.2 Marking .....	5
4.3 Validity of release for delivery .....	6
4.4 Application for qualification approval .....	6
4.5 Structural similarity .....	6
4.6 Materials, piece-parts and added components .....	6
4.7 Initial qualification approval .....	6
4.8 Granting of qualification approval .....	7
4.9 Maintenance of qualification approval .....	7
4.10 Procedure in the event of a failure in a periodic test .....	8
4.11 Withdrawal of qualification approval .....	8
5 Qualification-product assessment level schedules .....	9
6 Blank detail specification .....	28
6.1 General .....	28
6.2 FRONT PAGE FOR COMPONENTS ASSESSED BY QUALIFICATION APPROVAL .....	29
6.3 GENERAL DATA .....	30
6.4 Inspection requirements .....	31

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SEMICONDUCTOR DEVICES – INTEGRATED CIRCUITS –**

**Part 23-5: Hybrid integrated circuits and film structures –  
Manufacturing line certification –  
Procedure for qualification approval**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60748-23-5 has been prepared by subcommittee 47A: Integrated circuits, of IEC technical committee 47: Semiconductor devices.

The text of this standard is based on the European standard EN 165000-5 and the following documents:

FDIS	Report on voting
47A/672/FDIS	47A/677/RVD

Full information on the voting for the approval of this standard 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.

This standard should be read in conjunction with IEC 60748-23-1.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

## **SEMICONDUCTOR DEVICES – INTEGRATED CIRCUITS –**

### **Part 23-5: Hybrid integrated circuits and film structures – Manufacturing line certification – Procedure for qualification approval**

#### **1 Scope**

This part of IEC 60748-23 applies to high quality hybrids (with films) incorporating special customer quality and reliability requirements whose quality is assessed on the basis of Qualification Approval.

NOTE 1 Hybrid integrated circuits may be fully or part completed. Part completed devices are those that may be supplied to customers for further processing.

NOTE 2 Test methods are selected from IEC 60748-23-1. A blank detail specification (BDS) is included to assist manufacturers and users in the preparation of detail specifications.

#### **2 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 60748-23-1:2002, *Semiconductor devices – Integrated circuits – Part 23-1: Hybrid integrated circuits and film structures – Manufacturing line certification – Generic specification*

IEC 61340-5-1:1998, *Electrostatics – Part 5-1: Protection of electronic devices from electrostatic phenomena – General requirements*

QC 001002-3:1998, *IEC Quality Assessment System for Electronic Components (IECQ) – Rules of Procedure – Part 3: Approval procedures*