

# INTERNATIONAL STANDARD

# IEC 60393-6

First edition  
2003-05

---

---

## Potentiometers for use in electronic equipment –

### Part 6: Sectional specification: Surface mount preset potentiometers

© 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

U

*For price, see current catalogue*

## CONTENTS

FOREWORD .....	3
1 General .....	4
1.1 Scope .....	4
1.2 Object.....	4
1.3 Normative references .....	4
1.4 Information to be given in a Detail Specification.....	5
2 Preferred ratings, characteristics and test severities .....	9
2.1 Preferred characteristics.....	9
2.2 Preferred values of ratings.....	14
2.3 Preferred test severities.....	16
3 Quality assessment procedures .....	17
3.1 Structurally similar components .....	17
3.2 Qualification approval .....	17
3.3 Quality conformance inspection .....	25
3.4 Delayed delivery.....	26
Figure 1 – Suitable substrate for mechanical and electrical tests (may not be suitable for impedance measurements) .....	7
Figure 2 – Suitable substrate for electrical tests .....	8
Figure 3 – Rated dissipation curve .....	15
Figure 4 – Rated dissipation curve with larger area of operation .....	15
Table 1 – Temperature coefficients and temperature characteristics of resistance.....	10
Table 2 – Limits for change in resistance and output ratio .....	11
Table 3 – Fixed sample size test schedule for qualification approval – Assessment level E.....	19
Table 4 – Assessment level corresponding to inspection subgroup.....	25
Table 5 – Assessment level corresponding to inspection subgroup.....	26

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**POTENTIOMETERS FOR USE IN ELECTRONIC EQUIPMENT –****Part 6: Sectional specification:  
Surface mount preset potentiometers**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical Specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60393-6 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

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

FDIS	Report on voting
40/1288/FDIS	40/1324/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 Sectional Specification is to be used in conjunction with IEC 60393-1:1989.

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

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

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

## POTENTIOMETERS FOR USE IN ELECTRONIC EQUIPMENT –

### Part 6: Sectional specification: Surface mount preset potentiometers

#### 1 General

##### 1.1 Scope

This International Standard is applicable to surface mount preset potentiometers for use in electronic equipment.

##### 1.2 Object

The object of this standard is to prescribe preferred ratings and characteristics and to select the appropriate quality assessment procedures, tests and measuring methods from IEC 60393-1 and to give general performance requirements for this type of potentiometer.

Test severities and requirements prescribed in Detail Specifications referring to this Sectional Specification shall be of equal or higher performance level, lower performance levels are not permitted.

##### 1.3 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 60063:1963, *Preferred number series for resistors and capacitors*

Amendment 1 (1967)

Amendment 2 (1977)

IEC 60068-1, *Environmental testing. Part 1: General and guidance*

IEC 60068-2-20, *Environmental testing. Part 2: Tests. Test T: Soldering*

IEC 60068-2-21, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 60068-2-45, *Environmental testing. Part 2: Tests. Test XA and guidance: Immersion in cleaning solvents*

IEC 60068-2-58, *Environmental testing – Part 2-58: Tests – Test Td – Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

IEC 60393-1:1989, *Potentiometers for use in electronic equipment – Part 1: Generic Specification*

Amendment 1 (1992)

IEC 60410:1973, *Sampling plans and procedures for inspection by attributes*

IEC QC 001001:2000, *IEC Quality Assessment System for Electronic Components (IECQ) – Basic rules*

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