

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Miniature fuses –  
Part 7: Miniature fuse-links for special applications**

**Coupe-circuits miniatures –  
Partie 7: Éléments de remplacement miniatures pour applications spéciales**



**THIS PUBLICATION IS COPYRIGHT PROTECTED**  
**Copyright © 2013 IEC, Geneva, Switzerland**

All rights reserved. Unless otherwise specified, 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 either IEC or IEC's member National Committee in the country of the requester.  
If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de la CEI ou du Comité national de la CEI du pays du demandeur.  
Si vous avez des questions sur le copyright de la CEI ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de la CEI de votre pays de résidence.

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](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

#### Useful links:

IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

The advanced search enables you to find IEC publications by a variety of criteria (reference number, text, technical committee,...).

It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available on-line and also once a month by email.

Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary (IEV) on-line.

Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [csc@iec.ch](mailto:csc@iec.ch).

---

### A propos de la CEI

La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

### A propos des publications CEI

Le contenu technique des publications de la CEI est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente. un corrigendum ou amendement peut avoir été publié.

#### Liens utiles:

Recherche de publications CEI - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

La recherche avancée vous permet de trouver des publications CEI en utilisant différents critères (numéro de référence, texte, comité d'études,...).

Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

Just Published CEI - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications de la CEI. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire en ligne au monde de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans les langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (VEI) en ligne.

Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [csc@iec.ch](mailto:csc@iec.ch).

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Miniature fuses –  
Part 7: Miniature fuse-links for special applications**

**Coupe-circuits miniatures –  
Partie 7: Eléments de remplacement miniatures pour applications spéciales**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

S

ICS 29.120.50

ISBN 978-2-83220-670-6

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

|   |    |
|---|----|
| FOREWORD.....   | 3  |
| INTRODUCTION.....   | 5  |
| 1 Scope.....  | 6  |
| 2 Normative references .....  | 6  |
| 3 Terms and definitions .....   | 7  |
| 4 General requirements .....  | 7  |
| 5 Standard ratings .....  | 8  |
| 6 Marking .....   | 8  |
| 7 General notes on tests .....  | 9  |
| 8 Dimensions and construction.....  | 12 |
| 9 Electrical requirements.....  | 13 |
| 9.1 Voltage drop.....   | 13 |
| 9.2 Time/current characteristic .....   | 13 |
| 9.2.1 Time/current characteristic at normal ambient temperature.....  | 13 |
| 9.2.2 Test at elevated temperature .....  | 13 |
| 9.3 Breaking capacity.....  | 13 |
| 9.3.1 Operating conditions.....   | 13 |
| 9.3.2 Criteria for satisfactory performance.....  | 15 |
| 9.4 Endurance tests .....   | 15 |
| 9.4.101 Endurance test at normal ambient temperature .....  | 16 |
| 9.4.102 Test method A.....  | 16 |
| 9.4.103 Test method B.....  | 16 |
| 9.5 Maximum sustained dissipation .....   | 16 |
| 9.6 Pulse tests .....   | 16 |
| 9.7 Fuse-link temperature .....   | 16 |
| 9.7.101 Fuse-links for use on printed circuit boards .....  | 16 |
| 9.7.102 Fuse-links for use in fuse-holders.....   | 17 |
| Annex AA (informative) Guidance on ratings to be specified by the manufacturer or to be agreed upon with the testing house..... | 23 |
| Figure 1 – Standard test board .....  | 10 |
| Figure 2 – Standard test base for printed circuit board.....  | 11 |
| Figure 3 – Test circuits for breaking capacity tests.....   | 14 |
| Table 1 – Power factor and time constant .....  | 15 |
| Table 2 – Testing schedule for a.c. or d.c. breaking capacity fuse-links .....  | 18 |
| Table 3 – Testing schedule for a.c. and d.c. breaking capacity fuse-links.....  | 19 |

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## MINIATURE FUSES –

## Part 7: Miniature fuse-links for special applications

## 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 itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 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 60127-7 has been prepared by subcommittee 32C: Miniature fuses, of IEC technical committee 32: Fuses.

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

|             |                  |
|-------------|------------------|
| CDV         | Report on voting |
| 32C/458/CDV | 32C/467/RVC      |

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 International Standard is to be used in conjunction with IEC 60127-1:2006, *Miniature fuses – Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links* and its Amendment 1 (2011).

The clauses of this standard supplement, modify or replace the corresponding clauses in IEC 60127-1.

Where there is no corresponding clause or subclause in this standard, the clause or subclause of IEC 60127-1 applies without modification as far as is reasonable. When this standard states “addition” or “replacement”, the relevant text in IEC 60127-1 is to be adapted accordingly.

Subclauses which are additional to those in Part 1 are numbered starting from 101. Additional annexes are numbered AA, BB, etc.

A list of all parts in the IEC 60127 series, published under the general title *Miniature fuses*, 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 web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

Withdrawn