# IEC 60127-1

Edition 2.2 2015-02

# CONSOLIDATED VERSION

colour inside

## Miniature fuses –
## Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 29.120.50

ISBN 978-2-8322-2293-5

**Warning! Make sure that you obtained this publication from an authorized distributor.**

# IEC 60127-1

Edition 2.2 2015-02

# REDLINE VERSION

colour inside

## Miniature fuses –
## Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

IEC 60127-1:2006-06+AMD1:2011-04+AMD2:2015-02 CSV(en)

# CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

# MINIATURE FUSES –

# Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

## 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.

**This Consolidated version of IEC 60127-1 bears the edition number 2.2. It consists of the second edition (2006-06) [documents 32C/387/FDIS and 32C/390/RVD], its amendment 1 (2011-04) [documents 32C/436/CDV and 32C/438/RVC] and its amendment 2 (2015-02) [documents 32C/490/CDV and 32C/505/RVC]. The technical content is identical to the base edition and its amendments.**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendments 1 and 2. Additions and deletions are displayed in red, with deletions being struck through. A separate Final version with all changes accepted is available in this publication.**

**This publication has been prepared for user convenience.**

International Standard IEC 60127-1 has been prepared by subcommittee 32C: Miniature fuses, of IEC technical committee 32: Fuses.

The major technical changes with regard to the first edition concern subclause 9.2.3 where the nature of the current source has been clarified; in addition, IEC 60038: *IEC standard voltages*, has been added to the list of normative references.

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

This Part 1 of the IEC 60127 series covers definitions, general requirements and tests applicable to all types of miniature fuses (e.g. cartridge fuse-links, sub-miniature fuse-links and universal modular fuse-links). All subsequent parts of the complete series should be read in conjunction with this Part 1.

IEC 60127 consists of the following parts, under the general heading *Miniature fuses*:

Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

Part 2: Cartridge fuse-links

Part 3: Sub-miniature fuse-links

Part 4: Universal modular fuse-links (UMF) – Through-hole and surface mount types

Part 5: Guidelines for quality assessment of miniature fuse-links

Part 6: Fuse-holders for miniature fuse-links

Part 7: (Free for further documents)

Part 8: (Free for further documents)

Part 9: (Free for further documents)

Part 10: User guide for miniature fuses

The committee has decided that the contents of the base publication and its amendments 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.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

# MINIATURE FUSES –

# Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

## 1 Scope and object

This part of IEC 60127 covers the general requirements and tests applicable to all types of miniature fuse-links (e.g. cartridge fuse-links, sub-miniature fuse-links and universal modular fuse-links) for the protection of electric appliances, electronic equipment and component parts thereof normally intended to be used indoors.

This standard does not apply to fuses intended for the protection of low-voltage electrical installations. These are covered by IEC 60269, *Low Voltage Fuses*.

Specific details covering each major subdivision are given in subsequent parts.

This standard does not apply to fuses for appliances intended to be used under special conditions, such as in a corrosive or explosive atmosphere.

The object of this standard is

a) to establish uniform requirements for miniature fuses so as to protect appliances or parts of appliances in the most suitable way,

b) to define the performance of the fuses, so as to give guidance to designers of electrical appliances and electronic equipment and to ensure replacement of fuse-links by those of similar dimensions and characteristics,

c) to define methods of testing,

d) to define maximum sustained dissipation of fuse-links to ensure good compatibility of stated power acceptance when used with fuse-holders according to this standard (see IEC 60127-6).

## 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 60038, *IEC standard voltages*

IEC 60127-6:1994, *Miniature fuses – Part 6: Fuse-holders for miniature fuse-links*
Amendment 1 (1996)
Amendment 2 (2003)

# IEC 60127-1

Edition 2.2 2015-02

# FINAL VERSION

## Miniature fuses –
## Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

IEC 60127-1:2006-06+AMD1:2011-04+AMD2:2015-02 CSV(en)

# CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

# MINIATURE FUSES –

# Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

## 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.

**This Consolidated version of IEC 60127-1 bears the edition number 2.2. It consists of the second edition (2006-06) [documents 32C/387/FDIS and 32C/390/RVD], its amendment 1 (2011-04) [documents 32C/436/CDV and 32C/438/RVC] and its amendment 2 (2015-02) [documents 32C/490/CDV and 32C/505/RVC]. The technical content is identical to the base edition and its amendments.**

**This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.**

**This publication has been prepared for user convenience.**

International Standard IEC 60127-1 has been prepared by subcommittee 32C: Miniature fuses, of IEC technical committee 32: Fuses.

The major technical changes with regard to the first edition concern subclause 9.2.3 where the nature of the current source has been clarified; in addition, IEC 60038: *IEC standard voltages*, has been added to the list of normative references.

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

This Part 1 of the IEC 60127 series covers definitions, general requirements and tests applicable to all types of miniature fuses (e.g. cartridge fuse-links, sub-miniature fuse-links and universal modular fuse-links). All subsequent parts of the complete series should be read in conjunction with this Part 1.

IEC 60127 consists of the following parts, under the general heading *Miniature fuses*:

Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

Part 2: Cartridge fuse-links

Part 3: Sub-miniature fuse-links

Part 4: Universal modular fuse-links (UMF) – Through-hole and surface mount types

Part 5: Guidelines for quality assessment of miniature fuse-links

Part 6: Fuse-holders for miniature fuse-links

Part 7: (Free for further documents)

Part 8: (Free for further documents)

Part 9: (Free for further documents)

Part 10: User guide for miniature fuses

The committee has decided that the contents of the base publication and its amendments 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.

# MINIATURE FUSES –

# Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

## 1 Scope and object

This part of IEC 60127 covers the general requirements and tests applicable to all types of miniature fuse-links (e.g. cartridge fuse-links, sub-miniature fuse-links and universal modular fuse-links) for the protection of electric appliances, electronic equipment and component parts thereof normally intended to be used indoors.

This standard does not apply to fuses intended for the protection of low-voltage electrical installations. These are covered by IEC 60269, *Low Voltage Fuses*.

Specific details covering each major subdivision are given in subsequent parts.

This standard does not apply to fuses for appliances intended to be used under special conditions, such as in a corrosive or explosive atmosphere.

The object of this standard is

a) to establish uniform requirements for miniature fuses so as to protect appliances or parts of appliances in the most suitable way,
b) to define the performance of the fuses, so as to give guidance to designers of electrical appliances and electronic equipment and to ensure replacement of fuse-links by those of similar dimensions and characteristics,
c) to define methods of testing,
d) to define maximum sustained dissipation of fuse-links to ensure good compatibility of stated power acceptance when used with fuse-holders according to this standard (see IEC 60127-6).

## 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 60038, *IEC standard voltages*

IEC 60127-6:1994, *Miniature fuses – Part 6: Fuse-holders for miniature fuse-links*
Amendment 1 (1996)
Amendment 2 (2003)