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Miniature fuses –
Part 8: Fuse resistors with particular overcurrent protection

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 8
4 General requirements 10
5 Standard ratings 10
6 Marking 11
7 General notes on tests 11
7.1 Atmospheric conditions for testing 11
7.2 Type tests 11
7.3 Fuse-bases for tests 12
7.3.1 General 12
7.3.2 General requirements 12
7.3.3 Through-hole mounting of fuse resistors with particular overcurrent protection 13
7.3.4 Surface mounting of fuse resistors with particular overcurrent protection 13
7.4 Nature of supply 13
8 Dimensions and construction 13
8.1 Dimensions 13
8.2 Construction 14
8.3 Terminations 14
8.3.1 Through-hole mount fuse resistors with particular overcurrent protection 15
8.3.2 Surface mount fuse resistors with particular overcurrent protection 15
8.4 Alignment and configuration of terminations 15
8.5 Soldered joints 15
8.6 Solderability of terminations 16
8.7 Resistance to soldering heat 16
9 Electrical requirements 16
9.1 Resistance value 16
9.2 Functioning characteristic at the minimum breaking dissipation 16
9.2.1 Functioning characteristic at an ambient temperature of ~~70 °C~~ 23 °C ± 1 °C 16
9.2.2 Test at elevated temperature 16
9.2.3 Test procedure 17
9.2.4 Presentation of results 17
9.3 Rated breaking capacity 17
9.3.1 Operating conditions 17
9.3.2 Criteria for satisfactory performance 18
9.3.3 Insulation resistance 18
9.3.4 Dielectric strength 18
9.4 Endurance tests 18
9.5 Maximum sustained dissipation 18
9.6 Pulse tests 19
9.7 Temperature of fuse resistors with particular overcurrent protection 19
9.8 Operating overvoltage 19

Bibliography 26

Figure 1 – Test board for through-hole mount fuse resistors with particular overcurrent protection 21
Figure 2 – Test board for surface mount fuse resistors with particular overcurrent protection 22
Figure 3 – Test fuse-base 24
Figure 4 – Bending jig for surface mount fuse resistors with particular overcurrent protection 24
Figure 5 – Test circuit for the tests according to 9.3 25

Table 1 – Creepage distances and clearances (absolute minimum values) 14
Table 2 – Test voltages for dielectric strength 18
Table 3 – Testing schedule for individual dissipation ratings 20

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MINIATURE FUSES –

Part 8: Fuse resistors with particular overcurrent protection

FOREWORD

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IEC 60127-8 edition 1.1 contains the first edition (2018-06) [documents 32C/542/FDIS and 32C/546/RVD] and its amendment 1 (2024-07) [documents 32C/638/FDIS and 32C/642/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 60127-8 has been prepared by subcommittee SC 32C: Miniature fuses, of IEC technical committee 32: Fuses

This first edition of IEC 60127-8 cancels and replaces IEC PAS 60127-8:2014.

This international standard is to be used in conjunction with IEC 60127-1.

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

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 document and its amendment will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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INTRODUCTION

In recent years, so-called “fuse resistors” have increasingly been used in electrical and electronic applications. The term “fuse resistor”, however, which has become established in the market, is misleading. The actual function of a fuse resistor is that of a resistor in an electrical or electronic circuit. Only when an overload of multiple times the rated dissipation occurs can fuse resistors interrupt an electric current. In a wide range between the rated dissipation and the manufacturer’s specified breaking dissipation, fuse resistors provide poor or no overcurrent protection. Therefore if they are incorrectly rated and improperly used in an application, this may result in potential risk of fire.

Fuse resistors perform the function of a fuse only within a particular overcurrent range, and, from a technical point of view, must therefore be referred to as “fuse resistors with particular overcurrent protection”.

Fuse resistors with particular overcurrent protection can safely interrupt ~~high~~ short-circuit currents, but are not capable of interrupting overload currents.

For safety reasons, they are only used in combination with an accompanying overload current protection device, if overload currents cannot be excluded to occur in the respective application.

MINIATURE FUSES –

Part 8: Fuse resistors with particular overcurrent protection

1 Scope

This part of IEC 60127 relates to fuse resistors with particular overcurrent protection rated up to AC 500 V and/or DC 500 V for printed circuits and other substrate systems, used for the protection of electric appliances, electronic equipment and component parts thereof, normally intended to be used indoors.

It does not apply to fuse resistors with particular overcurrent protection for appliances intended to be used under special conditions, such as in a corrosive or explosive atmosphere.

The object of this part of IEC 60127 is

a) to establish uniform requirements for fuse resistors with particular overcurrent protection so as to protect appliances or parts of appliances in the most suitable way;

b) to define the performance of the fuse resistors with particular overcurrent protection, so as to give guidance to manufacturers of electrical appliances and electronic equipment and to ensure replacement of fuse resistors with particular overcurrent protection by those of similar dimensions and characteristics;

c) to establish uniform test methods for fuse resistors with particular overcurrent protection, so as to allow verification of the values (for example rated dissipation, functioning characteristic and rated breaking capacity values) specified by the manufacturer.

With exceptions of 3.5 and 3.8 of IEC 60127-1:2023, manufacturers of fuse resistors with particular overcurrent protection shall ensure on their own responsibility that their products comply with the requirements of the resistor-related standards IEC 60115-1, IEC 60115-4-101[1] and IEC 60115-4-102[1].

Fuse resistors with particular overcurrent protection are not intended to be replaced by the end-user of an electrical / electronic appliance.

This part of IEC 60127 applies in addition to the requirements of IEC 60127-1.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60063:2015, *Preferred number series for resistors and capacitors*

IEC 60068-2-21:2006, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

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IEC 60127-1:2006/AMD1:2011
IEC 60127-1:2006/AMD2:2015

IEC 60194:2015, *Printed board design, manufacture and assembly – Terms and definitions*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60695-2-12:2010, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glow-wire flammability index (GWFI) test method for materials*

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 8
4 General requirements 10
5 Standard ratings 10
6 Marking 11
7 General notes on tests 11
7.1 Atmospheric conditions for testing 11
7.2 Type tests 11
7.3 Fuse-bases for tests 12
7.3.1 General 12
7.3.2 General requirements 12
7.3.3 Through-hole mounting of fuse resistors with particular overcurrent protection 13
7.3.4 Surface mounting of fuse resistors with particular overcurrent protection 13
7.4 Nature of supply 13
8 Dimensions and construction 13
8.1 Dimensions 13
8.2 Construction 14
8.3 Terminations 14
8.3.1 Through-hole mount fuse resistors with particular overcurrent protection 15
8.3.2 Surface mount fuse resistors with particular overcurrent protection 15
8.4 Alignment and configuration of terminations 15
8.5 Soldered joints 15
8.6 Solderability of terminations 16
8.7 Resistance to soldering heat 16
9 Electrical requirements 16
9.1 Resistance value 16
9.2 Functioning characteristic at the minimum breaking dissipation 16
9.2.1 Functioning characteristic at an ambient temperature of 23 °C ± 1 °C 16
9.2.2 Test at elevated temperature 16
9.2.3 Test procedure 16
9.2.4 Presentation of results 17
9.3 Rated breaking capacity 17
9.3.1 Operating conditions 17
9.3.2 Criteria for satisfactory performance 17
9.3.3 Insulation resistance 18
9.3.4 Dielectric strength 18
9.4 Endurance tests 18
9.5 Maximum sustained dissipation 18
9.6 Pulse tests 18
9.7 Temperature of fuse resistors with particular overcurrent protection 18
9.8 Operating overvoltage 18
Bibliography 26

Figure 1 – Test board for through-hole mount fuse resistors with particular overcurrent protection 21
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Table 1 – Creepage distances and clearances (absolute minimum values) 14
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