
Fixed resistors for use in electronic equipment - Part 9: Sectional specification:
Fixed surface mount resistor networks with individually measurable resistors (IEC
60115-9:2003)

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English version

**Fixed resistors for use in electronic equipment
Part 9: Sectional specification -
Fixed surface mount resistor networks
with individually measurable resistors
(IEC 60115-9:2003)**

Résistances fixes utilisées
dans les équipements électroniques
Partie 9: Spécification intermédiaire -
Réseaux de résistances fixes montés
en surface avec des résistances
mesurables individuellement
(CEI 60115-9:2003)

Festwiderstände zur Verwendung
in Geräten der Elektronik
Teil 9: Rahmenspezifikation -
Oberflächenmontierbare Netzwerke
aus Festwiderständen mit einzeln
messbaren Widerständen
(IEC 60115-9:2003)

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This European Standard was approved by CENELEC on 2004-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 40/1344/FDIS, future edition 1 of IEC 60115-9, prepared by IEC TC 40, Capacitors and resistors for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60115-9 on 2004-02-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-11-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-02-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60115-9:2003 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60063	1963	Preferred number series for resistors and capacitors	-	-
A1	1967		-	-
A2	1977		-	-
IEC 60068-1	- ¹⁾	Environmental testing Part 1: General and guidance	EN 60068-1	1994 ²⁾
IEC 60068-2-1	- ¹⁾	Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993 ²⁾
IEC 60068-2-2	- ¹⁾	Part 2: Tests - Tests B: Dry heat	EN 60068-2-2	1993 ²⁾
IEC 60115-1 (mod)	1999	Fixed resistors for use in electronic equipment Part 1: Generic specification	EN 60115-1	2001

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1) Undated reference.

2) Valid edition at date of issue.

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INTERNATIONAL STANDARD

IEC 60115-9

First edition
2003-10

Fixed resistors for use in electronic equipment –

Part 9:

Sectional specification:

Fixed surface mount resistor networks

with individually measurable resistors

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIXED RESISTORS FOR USE IN ELECTRONIC EQUIPMENT –

**Part 9: Sectional specification:
Fixed surface mount resistor networks
with individually measurable resistors**

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.
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International Standard IEC 60115-9 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
40/1344/FDIS	40/1366/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.

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 edition of this standard may be issued at a later date.

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FIXED RESISTORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 9: Sectional specification: Fixed surface mount resistor networks with individually measurable resistors

1 General

1.1 Scope

This part of IEC 60115 is applicable to fixed surface mount resistor networks with individually measurable resistors for use in electronic equipment.

1.2 Object

The object of this standard is to prescribe preferred ratings and characteristics and to select from IEC 60115-1, the appropriate Quality Assessment procedures, tests and measuring methods and to give general performance requirements for this type of resistor.

Test severities and requirements prescribed in detail specifications referring to this sectional specification must be of equal or higher performance level, because 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 60068-2-1: *Environmental testing – Part 2: Tests. Tests A: Cold*

IEC 60068-2-2: *Environmental testing – Part 2: Tests. Tests B: Dry heat*

IEC 60115-1:1999, *Fixed resistors for use in electronic equipment – Part 1: Generic specification*

1.4 Information to be given in a detail specification

Detail specifications shall be derived from the relevant blank detail specification.

Detail specifications shall not specify requirements inferior to those of the generic, sectional specification or blank detail specification.

When more severe requirements are included, they shall be listed in 1.8 of the detail specification and indicated in the test schedules, for example by an asterisk.

The following information shall be given in each detail specification and the values quoted shall preferably be selected from those given in the appropriate clause of this sectional specification.

1.4.1 Outline drawing and dimensions

There shall be an illustration of the surface mount resistor network as an aid to easy recognition and for comparison of the surface mount resistor network with others.

Dimensions and their associated tolerances, which affect interchangeability and mounting, shall be given in the detail specification. All dimensions shall be stated in millimetres.

Normally the numerical values shall be given for the length, width and thickness of the body.

Schematic diagrams and pin identifications shall be given in the detail specification. Those are prescribed in Annex A.

Configurations of terminations shall be given in the detail specification. Those are prescribed in Annex B.

When the outline drawing is other than described above, the detail specification shall state such dimensional information as will adequately describe the surface mount resistor network.

1.4.2 Mounting iTeh STANDARD PREVIEW

The detail specification shall give guidance on methods of mounting for normal use. Mounting for test and measurement purposes (when required) shall be in accordance with 4.31 of IEC 60115-1.

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1.4.3 Style (2.2.2 of IEC 60115-1) (standards.iTech.ai)

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The styles given in Table 1 are preferred. All dimensions are in mm.

Table 1 – Style and outline dimensions

Dimensions in mm

Code	Length L	Width W	Thickness T	Diagram ^{a)}	Construction of terminals ^{a)}
1005X2	$1 \pm 0,1$	$1 \pm 0,1$	$0,35 \pm 0,1$	A	Convex
1005X4	$2 \pm 0,1$	$1 \pm 0,1$	$0,4 \pm 0,15$	A	Convex Concave
1608X2	$1,6 \pm 0,2$	$1,6 \pm 0,2$	$0,55 \pm 0,15$	A	Convex Concave
1608X4	$3,2 \pm 0,2$	$1,6 \pm 0,2$	$0,55 \pm 0,15$	A	Convex Concave
3216X4	$5,08 \pm 0,2$	$3,1 \pm 0,2$	$0,55 \pm 0,15$	A	Convex Concave
3216	$3,2 \pm 0,2$	$1,6 \pm 0,2$	$0,5 \pm 0,15$	B, C	Convex
4021	$4 \pm 0,2$	$2,1 \pm 0,2$	$0,6 \pm 0,15$	D	Concave
6431	$6,4 \pm 0,2$	$3,1 \pm 0,2$	$0,6 \pm 0,15$	B, C	Convex Concave
^{a)} Diagrams are shown in Annex A. Constructions of terminals are shown in Annex B.					