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Fixed resistors for use in electronic equipment – Part 8: Sectional specification – Fixed surface mount resistors

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International Standard IEC 60115-8 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This second edition cancels and replaces the first edition, published in 1989, and its Amendment 1 (2000). This second edition constitutes a technical revision and includes test conditions and requirements for lead-free soldering and assessment procedures meeting the requirements of a "zero defect" approach.

The major technical changes with regard to the first edition are the following:

– introduction of a product classification based on application requirements;
– extension of the list of styles and dimensions;
– use of an extended scope of stability class definitions;
– extension of the lists of preferred values of ratings
– inclusion of test conditions and requirements for lead-free soldering, for periodic overload and for resistance to electrostatic discharge (ESD);

– inclusion of a new set of severities for a shear test;
– inclusion of definitions for a test board;
– replacement of assessment level E and possible others by the sole assessment level EZ, meeting the requirements of a “zero defect” approach;
– inclusion of an extended endurance test, a flammability test, a temperature rise test, vibration tests, an extended rapid change of temperature test, and a single pulse high-voltage overload test;
– inclusion of requirements applicable to 0 Ω resistors (jumpers).

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

FDIS	Report on voting
40/1933/FDIS	40/1970/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.

A list of all the parts of the IEC 60115 series, under the general title *Fixed resistors for use in electronic equipment*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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- withdrawn,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.

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

FIXED RESISTORS FOR USE IN ELECTRONIC EQUIPMENT –

Part 8: Sectional specification – Fixed surface mount resistors

1 General

1.1 Scope

This part of IEC 60115 is applicable to fixed surface mount resistors for use in electronic equipment.

These resistors are typically described according to types (different geometric shapes) and styles (different dimensions). They have metallized terminations and are primarily intended to be mounted directly on to a circuit board.

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 shall 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 60062:2004, *Marking codes for resistors and capacitors*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

Amendment 1(1992)

IEC 60068-2-58:2004, *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 60115-1:2008, *Fixed resistors for use in electronic equipment – Part 1: Generic specification*

IEC 61193-2:2007, *Quality assessment systems – Part 2: Selection and use of sampling plans for inspection of electronic components and packages*

IEC 61340-3-1, *Electrostatics – Part 3-1: Methods for simulation of electrostatic effects – Human body model (HBM) electrostatic discharge test waveforms*

IEC 61760-1:2006, *Surface mounting technology – Part 1: Standard method for the specification of surface mounting components (SMDs)*