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STANDARD

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JIS C 5101-11 : 1998

**Fixed capacitors for use
in electronic equipment
Part 11 : Sectional specification :
Fixed polyethylene-terephthalate
film dielectric metal foil
d.c. capacitors**

ICS 31.060.30

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law:

By this Standard, **JIS C 5113 : 1991** *Fixed polyester film capacitors for use in electronic equipment* is withdrawn and replaced.

Attention shall be drawn to the possibility that a part of this Standard may conflict with a patent right, application for a patent right after opening to the public, utility model right (including those applied before 1993-12-31) or application for registration of utility model after opening to the public which have technical properties. The Minister of International Trade and Industry and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent right after opening, utility model right or application for registration of utility model after opening to the public which have the technical properties of this kind.

Group standards The following standards form the specifications for the group of element specified in this Standard.

JIS C 5101	<i>General rules of fixed capacitors for use in electronic equipment</i>
JIS C 5101-1	<i>Part 1: Generic specification</i>
JIS C 5101-2	<i>Part 2: Sectional specification: Fixed metallized polyethylene-terephthalate film dielectric d.c. capacitors</i>
JIS C 5101-2-1	<i>Part 2: Blank detail specification: Fixed metallized polyethylene-terephthalate film dielectric d.c. capacitors. Assessment level E</i>
JIS C 5101-3	<i>Part 3: Sectional specification: Fixed tantalum chip capacitors</i>
JIS C 5101-3-1	<i>Part 3: Blank detail specification: Fixed tantalum chip capacitors. Assessment level E</i>
JIS C 5101-4	<i>Part 4: Sectional specification: Aluminium electrolytic capacitors with solid and non-solid electrolyte</i>
JIS C 5101-4-1	<i>Part 4: Blank detail specification: Aluminium electrolytic capacitors with non solid electrolyte. Assessment level E</i>
JIS C 5101-4-2	<i>Part 4: Blank detail specification: Aluminium electrolytic capacitors with solid electrolyte. Assessment level E</i>
JIS C 5101-8	<i>Part 8: Sectional specification: Fixed capacitors of ceramic dielectric, Class 1</i>
JIS C 5101-8-1	<i>Part 8: Blank detail specification: Fixed capacitors of ceramic dielectric, class 1. Assessment level E</i>
JIS C 5101-9	<i>Part 9: Sectional specification: Fixed capacitors of ceramic dielectric, Class 2</i>
JIS C 5101-9-1	<i>Part 9: Blank detail specification: Fixed capacitors of ceramic dielectric, class 2. Assessment level E</i>
JIS C 5101-10	<i>Part 10: Sectional specification: Fixed multilayer ceramic chip capacitors</i>
JIS C 5101-10-1	<i>Part 10: Blank detail specification: Fixed multilayer ceramic chip capacitors. Assessment level E</i>

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- JIS C 5101-11 *Part 11: Sectional specification: Fixed polyethylene-terephthalate film dielectric metal foil d.c. capacitors*
- JIS C 5101-11-1 *Part 11: Blank detail specification: Fixed polyethylene-terephthalate film dielectric metal foil d.c. capacitors. Assessment level E*
- JIS C 5101-13 *Part 13: Sectional specification: Fixed polypropylene film dielectric metal foil d.c. capacitors*
- JIS C 5101-13-1 *Part 13: Blank detail specification: Fixed polypropylene film dielectric metal foil d.c. capacitors. Assessment level E*
- JIS C 5101-14 *Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*
- JIS C 5101-14-1 *Part 14: Blank detail specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains. Assessment level D*
- JIS C 5101-15 *Part 15: Sectional specification: Fixed tantalum capacitors with non-solid or solid electrolyte*
- JIS C 5101-15-1 *Part 15: Blank detail specification: Fixed tantalum capacitors with non-solid electrolyte and foil electrode. Assessment level E*
- JIS C 5101-15-2 *Part 15: Blank detail specification: Fixed tantalum capacitors with non-solid electrolyte and porous anode. Assessment level E*
- JIS C 5101-15-3 *Part 15: Blank detail specification: Fixed tantalum capacitors with solid electrolyte and porous anode. Assessment level E*
- JIS C 5101-16 *Part 16: Sectional specification: Fixed metallized polypropylene film dielectric d.c. capacitors*
- JIS C 5101-16-1 *Part 16: Blank detail specification: Fixed metallized polypropylene film dielectric d.c. capacitors. Assessment level E*
- JIS C 5101-17 *Part 17: Sectional specification: Fixed metallized polypropylene film dielectric a.c. and pulse capacitors*
- JIS C 5101-17-1 *Part 17: Blank detail specification: Fixed metallized polypropylene film dielectric a.c. and pulse capacitors. Assessment level E*
- JIS C 5101-18 *Part 18: Sectional specification: Fixed aluminium electrolytic chip capacitors with solid and non-solid electrolyte*
- JIS C 5101-18-1 *Part 18: Blank detail specification: Fixed aluminium electrolytic chip capacitors with solid electrolyte. Assessment level E*
- JIS C 5101-18-2 *Part 18: Blank detail specification: Fixed aluminium electrolytic chip capacitors with non-solid electrolyte. Assessment level E*
- JIS C 5101-20 *Part 20: Sectional specification: Fixed metallized polyphenylene sulfide film dielectric chip d.c. capacitors*
- JIS C 5101-20-1 *Part 20: Blank detail specification: Fixed metallized polyphenylene sulfide film dielectric chip d.c. capacitors. Assessment level EZ*

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**Fixed capacitors for
use in electronic equipment
Part 11 : Sectional specification :
Fixed polyethylene-terephthalate film
dielectric metal foil d.c. capacitors**

Introduction This Japanese Industrial Standard has been prepared based on IEC 60384-11, *Fixed capacitors for use in electronic equipment Part 11 : Sectional specification : Fixed polyethylene-terephthalate film dielectric metal foil d.c. capacitors* published in 1988 as the second edition, and Amendments without modifying their technical contents.

The portions with solid sidelines or dotted underlines show the matters not included in the original International Standard. The IEC Standard number is based on the new numbering system of IEC Standards put in force on January 1st 1997, and the Standard published before the said date is numbered by adding 60000 to the former number. This is only the change in the numbering system and the contents remain unchanged.

Section one—General

1 General

1.1 Scope This standard is a sectional specification associated with the generic specification JIS C 5101-1, and applies to fixed direct current capacitors, for rated voltages not exceeding 6 300 V, using as dielectric a polyethylene-terephthalate film and electrodes of thin metal foils (hereafter referred to as “capacitors”). For capacitors with rated voltages exceeding 1 000 V, additional tests and requirements may be specified in the detail specification.

The capacitors covered by this Standard are intended for use in electronic equipment.

Capacitors for radio interference suppression are not included, but are covered by JIS C 5101-14.

Remarks : The International Standard corresponding to this Standard JIS C 5101-11 is given below.

IEC 60384-11 : 1988 *Fixed capacitors for use in electronic equipment Part 11 : Sectional specification : Fixed polyethylene-terephthalate film dielectric metal foil d.c. capacitors*

1.2 Object The object of this Standard is to prescribe preferred ratings and characteristics and to select from JIS C 5101-1, the appropriate quality assessment procedures, tests and measuring methods and to give general performance requirements for this type of capacitor. 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 standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. If the indication of the year of coming into effect is given to these referred standards, only the edition of indicated year constitutes the provision of this Standard but the revision and amendment made thereafter are not applied. The normative references without the indication of the year of coming into effect apply limiting only to the most recent edition (including the amendment).

JIS C 0010 : 1993 *Environmental testing Part 1—General and guidance*

Remarks : All the matters cited from IEC 60068-1 : 1978, *Basic environmental testing procedures Part 1 : General* are equivalent to the corresponding matters stated in the said Standard.

JIS C 0010 : 1993 is identical with IEC 60068-1 : 1988 and Amendment 1 : 1992.

JIS C 5063 *Preferred number series for resistors and capacitors*

Remarks : IEC 60063 : 1963, *Preferred number series for resistors and capacitors*, Amendment 1 : 1967 and Amendment 2 : 1977 are identical to the said Standard.

JIS C 5101-1 *Fixed capacitors for use in electronic equipment Part 1 : Generic specification*

Remarks : All the matters cited from IEC 60384-1 : 1982, *Fixed capacitors for use in electronic equipment Part 1 : Generic specification*, Amendment 2 : 1987, Amendment 3 : 1989 and Amendment 4 : 1992 are equivalent to the corresponding matters stated in the said Standard.

JIS Z 8601 *Preferred numbers*

Remarks : ISO 3 : 1973, *Preferred number—Series of preferred numbers* is identical with the said Standard.

IEC QC 001001 : 1986 *Basic rules of the IEC quality assessment system for electronic components (IECQ) Amendment 2 : 1994*

IEC QC 001002 : 1986 *Rules of procedure of the IEC quality assessment system for electronic components (IECQ) Amendment 2 : 1994*

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 or blank detail specification. When more severe requirements are included, they shall be listed in Sub-clause 1.9 of the detail specification and indicated in the test schedules, for example by an asterisk (*).

Remarks : The information given in Sub-clause 1.4.1 may for convenience, be presented in tabular form.

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 capacitor as an aid to easy recognition and for comparison of the capacitor with others. Dimensions and their associated tolerances, which affect interchangeability and mounting, shall be given in the detail specification. All dimensions shall preferably be stated in millimetres, however when the original dimensions are given in inches, the converted metric dimensions in millimetres shall be added.

Normally the numerical values shall be given for the length of the body, the width and height of the body and the wire spacing, or for cylindrical types, the body diameter, and the length and diameter of the terminations. When necessary, for example when a number of items (capacitance values/voltage ranges) are covered by a detail specification, the dimensions and their associated tolerances shall be placed in a table below the drawing.

When the configuration is other than described above, the detail specification shall state such dimensional information as will adequately describe the capacitor. When the capacitor is not designed for use on printed boards, this shall be clearly stated in the detail specification.

1.4.2 Mounting The detail specification shall specify the method of mounting to be applied for normal use and for the application of the vibration and the bump or shock tests. The capacitors shall be mounted by their normal means. The design of the capacitor may be such that special mounting fixtures are required in its use. In this case the detail specification shall describe the mounting fixtures and they shall be used in the application of the vibration and bump or shock tests.

1.4.3 Ratings and characteristics The ratings and characteristics shall be in accordance with the relevant clauses of this specification, together with the following.

1.4.3.1 Rated capacitance range See Sub-clause 2.2.1.

Remarks : In the case of IEC Quality Assessment System (IECQ) when products approved to the detail specification have different ranges, the following statement should be added: "The range of values available in each voltage range is given in the qualified products list (QPL)".

1.4.3.2 Particular characteristics Additional characteristics may be listed, when they are considered necessary to specify adequately the component for design and application purposes.

1.4.3.3 Soldering The detail specification shall prescribe the test methods, severities and requirements applicable for the solderability and the resistance to soldering heat test.

1.4.4 Marking The detail specification shall specify the content of the marking on the capacitor and on the package. Deviations from Sub-clause 1.6 of this sectional specification, shall be specifically stated.

1.5 Terminology In addition to the applicable terms and definitions of JIS C 5101-1 the following definition applies.