JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

# JIS C 5101-1 : 2010

(IEC 60384-1 : 2008)
(JEITA/JSA)

# Fixed capacitors for use in electronic equipment— Part 1: Generic specification

**ICS** 31.060

**Reference number : JIS C 5101-1 : 2010 (E)**

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Date of Establishment: 1998-07-20
Date of Revision: 2010-06-21
Date of Public Notice in Official Gazette: 2010-06-21
Investigated by: Japanese Industrial Standards Committee
Standards Board
Technical Committee on Electronics Technology

JIS C 5101-1:2010, First English edition published in 2010-12

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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Printed in Japan

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## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Electronics and Information Technology Industries Association (JEITA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS C 5101-1**:1998 has been replaced with this Standard.

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**JIS C 5101** series consists of the following 45 parts under the general title "*Fixed capacitors for use in electronic equipment*":

- JIS C 5101-1 *Part 1: Generic specification*
- JIS C 5101-2 *Part 2: Sectional specification: Fixed metallized polyethylene-terephthalate film dielectric d.c. capacitors*
- JIS C 5101-2-1 *Part 2-1: Blank detail specification: Fixed metallized polyethylene-terephthalate film dielectric d.c. capacitors—Assessment levels E and EZ*
- JIS C 5101-3 *Part 3: Sectional specification—Surface mount fixed tantalum electrolytic capacitors with manganese dioxide solid electrolyte*
- JIS C 5101-3-1 *Part 3-1: Blank detail specification—Surface mount fixed tantalum electrolytic capacitors with manganese dioxide solid electrolyte—Assessment level EZ*
- JIS C 5101-4 *Part 4: Sectional specification—Aluminium electrolytic capacitors with solid ($MnO_2$) and non-solid electrolyte*
- JIS C 5101-4-1 *Part 4-1: Blank detail specification—Fixed aluminium electrolytic capacitors with non-solid electrolyte—Assessment level EZ*
- JIS C 5101-4-2 *Part 4-2: Blank detail specification—Fixed aluminium electrolytic capacitors with solid ($MnO_2$) electrolyte—Assessment level EZ*
- JIS C 5101-8 *Part 8: Sectional specification: Fixed capacitors of ceramic dielectric, Class 1*
- JIS C 5101-8-1 *Part 8-1: Blank detail specification: Fixed capacitors of ceramic dielectric, Class 1 Assessment level EZ*
- JIS C 5101-9 *Part 9: Sectional specification: Fixed capacitors of ceramic dielectric, Class 2*



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JIS C 5101-9-1 *Part 9-1: Blank detail specification: Fixed capacitors of ceramic dielectric, Class 2 Assessment level EZ*

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 13-1: Blank detail specification—Fixed polypropylene film dielectric metal foil d.c. capacitors—Assessment levels E and EZ*

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 14-1: Blank detail specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains—Assessment level D*

JIS C 5101-14-2 *Part 14-2: Blank detail specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains—Safety tests only*

JIS C 5101-14-3 *Part 14-3: Blank detail specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains—Assessment level DZ*

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 16-1: Blank detail specification: Fixed metallized polypropylene film dielectric d.c. capacitors—Assessment levels E and EZ*

JIS C 5101-17 *Sectional specification: Fixed metallized polypropylene film dielectric a.c. and pulse capacitors*

JIS C 5101-17-1 *Part 17-1: Blank detail specification: Fixed metallized polypropylene film dielectric a.c. and pulse capacitors—Assessment levels E and EZ*

JIS C 5101-18 *Part 18: Sectional specification—Fixed aluminium electrolytic surface mount capacitors with solid ($MnO_2$) and non-solid electrolyte*

JIS C 5101-18-1 *Part 18-1: Blank detail specification—Fixed aluminium electrolytic surface mount capacitors with solid ($MnO_2$) electrolyte—Assessment level EZ*



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JIS C 5101-18-2 *Part 18-2: Blank detail specification—Fixed aluminium electrolytic surface mount capacitors with non-solid electrolyte—Assessment level EZ*

JIS C 5101-20 *Part 20: Sectional specification—Fixed metallized polyphenylene sulfide film dielectric surface mount d.c. capacitors*

JIS C 5101-20-1 *Part 20-1: Blank detail specification—Fixed metallized polyphenylene sulfide film dielectric surface mount d.c. capacitors—Assessment level EZ*

JIS C 5101-21 *Part 21: Sectional specification: Fixed surface mount multilayer capacitors of ceramic dielectric, Class 1*

JIS C 5101-21-1 *Part 21-1: Blank detail specification: Fixed surface mount multilayer capacitors of ceramic dielectric, Class 1—Assessment level EZ*

JIS C 5101-22 *Part 22: Sectional specification: Fixed surface mount multilayer capacitors of ceramic dielectric, Class 2*

JIS C 5101-22-1 *Part 22-1: Blank detail specification: Fixed surface mount multilayer capacitors of ceramic dielectric, Class 2—Assessment level EZ*

JIS C 5101-23 *Part 23: Sectional specification—Fixed surface mount metallized polyethylene naphthalate film dielectric DC capacitors*

JIS C 5101-23-1 *Part 23-1: Blank detail specification—Fixed surface mount metallized polyethylene naphthalate film dielectric DC capacitors—Assessment level EZ*

JIS C 5101-24 *Part 24: Sectional specification—Surface mount fixed tantalum electrolytic capacitors with conductive polymer solid electrolyte*

JIS C 5101-24-1 *Part 24-1: Blank detail specification—Surface mount fixed tantalum electrolytic capacitors with conductive polymer solid electrolyte—Assessment level EZ*

JIS C 5101-25 *Part 25: Sectional specification—Surface mount fixed aluminium electrolytic capacitors with conductive polymer solid electrolyte*

JIS C 5101-25-1 *Part 25-1: Blank detail specification—Surface mount fixed aluminium electrolytic capacitors with conductive polymer solid electrolyte—Assessment level EZ*

JIS C 5101-26 *Part 26: Sectional specification—Fixed aluminium electrolytic capacitors with conductive polymer solid electrolyte* (to be published)

JIS C 5101-26-1 *Part 26-1: Blank detail specification—Fixed aluminium electrolytic capacitors with conductive polymer solid electrolyte—Assessment level EZ* (to be published)



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# Fixed capacitors for use in electronic equipment—Part 1: Generic specification

## Introduction

This Japanese Industrial Standard has been prepared based on the fourth edition of **IEC 60384-1** published in 2008 without modifying the technical contents.

The portions with continuous sidelines or dotted underlines and Annex JA to Annex JC are the matters not given in corresponding International Standard.

## 1 General

### 1.1 Scope

This Standard is a generic specification and is applicable to fixed capacitors for use in electronic equipment.

It establishes standard terms, inspection procedures and methods of test for use in sectional and detail specifications of electronic components for quality assessment or any other purposes.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows:

IEC 60384-1 : 2008 *Fixed capacitors for use in electronic equipment—Part 1: Generic specification* (IDT)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified) and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

### 1.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall be applied and any revisions (including amendments) made thereafter shall not be applied. For those without the indication of the year, the most recent edition (including amendments) shall be applied.

JIS C 0025 : 1988 *Basic environmental testing procedures Part 2: Tests Test N: Change of temperature*

NOTE : Corresponding International Standards: IEC 60068-2-14 : 1984 *Environmental testing—Part 2: Tests—Test N: Change of temperature* and Amendment 1 : 1986 and IEC 60068-2-33 : 1971 *Environmental testing—Part 2: Tests. Guidance on change of temperature tests* and Amendment 1 : 1978 (overall evaluation: MOD)

JIS C 0617 series *Graphical symbols for diagrams*

NOTE : Corresponding International Standard: IEC 60617 (all parts) *Graphical symbols for diagrams* (IDT)

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JIS C 5062 *Marking codes for resistors and capacitors*

NOTE : Corresponding International Standard: IEC 60062 : 2004 *Marking codes for resistors and capacitors* (MOD)

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

NOTE : Corresponding International Standard: IEC 60063 : 1963 *Preferred number series for resistors and capacitors* and Amendment 1 : 1967 and Amendment 2 : 1977 (IDT)

JIS C 6484 : 2005 *Base materials for printed circuits—Epoxide woven E-glass laminated sheet of defined flammability (vertical burning test)*

NOTE : Corresponding International Standards: IEC 61249-2-7 : 2002 *Materials for printed boards and other interconnecting structures—Part 2-7: Reinforced base materials clad and unclad—Epoxide woven E-glass laminated sheet of defined flammability (vertical burning test), copper-clad* and IEC 61249-2-8 : 2003 *Materials for printed boards and other interconnecting structures—Part 2-8: Reinforced base materials clad and unclad—Modified brominated epoxide woven fibreglass reinforced laminated sheets of defined flammability (vertical burning test), copper-clad* (overall evaluation: MOD)

JIS C 60068-1 : 1993 *Environmental testing Part 1: General and guidance*

NOTE : Corresponding International Standard: IEC 60068-1 : 1988 *Environmental testing. Part 1: General and guidance* and Amendment 1 : 1992 (IDT)

JIS C 60068-2-1 *Environmental testing—Part 2-1: Tests—Test A: Cold*

NOTE : Corresponding International Standard: IEC 60068-2-1 : 2007 *Environmental testing—Part 2-1: Tests—Test A: Cold* (IDT)

JIS C 60068-2-2 *Environmental testing—Part 2-2: Tests—Test B: Dry heat*

NOTE : Corresponding International Standard: IEC 60068-2-2 : 2007 *Environmental testing—Part 2-2: Tests—Test B: Dry heat* (IDT)

JIS C 60068-2-6 *Environmental testing—Part 2-6: Tests—Test Fc: Vibration (sinusoidal)*

NOTE : Corresponding International Standard: IEC 60068-2-6 : 2007 *Environmental testing—Part 2-6: Tests—Test Fc: Vibration (sinusoidal)* (IDT)

JIS C 60068-2-13 : 1989 *Basic environmental testing procedures Part 2: Tests, Test M: Low air pressure*

NOTE : Corresponding International Standard: IEC 60068-2-13 : 1983 *Environmental testing—Part 2: Tests. Test M: Low air pressure* (IDT)

JIS C 60068-2-17 : 2001 *Basic environmental testing procedures—Part 2: Tests—Test Q: Sealing*

NOTE : Corresponding International Standard: IEC 60068-2-17 : 1994 *Basic environmental testing procedures—Part 2: Tests—Test Q: Sealing* (IDT)

JIS C 60068-2-20 *Environmental testing—Part 2-20: Tests—Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

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NOTE : Corresponding International Standard: IEC 60068-2-20:2008 *Environmental testing—Part 2-20: Tests—Test T: Test methods for solderability and resistance to soldering heat of devices with leads* (IDT)

JIS C 60068-2-21 *Environmental testing—Part 2-21: Tests—Test U: Robustness of terminations and integral mounting devices*

NOTE : Corresponding International Standard: IEC 60068-2-21:2006 *Environmental testing—Part 2-21: Tests—Test U: Robustness of terminations and integral mounting devices* (MOD)

JIS C 60068-2-27 *Basic environmental testing procedures Part 2: Tests, Test Ea and guidance: Shock*

NOTE : Corresponding International Standard: IEC 60068-2-27:2008 *Environmental testing—Part 2-27: Tests—Test Ea and guidance: Shock* (IDT)

JIS C 60068-2-29:1995 *Basic environmental testing procedures Part 2: Tests Test Eb and guidance: Bump*

NOTE : Corresponding International Standard: IEC 60068-2-29:1987 *Environmental testing—Part 2: Tests—Test Eb and guidance: Bump* (IDT)

JIS C 60068-2-30 *Basic environmental testing procedures Part 2: Tests Test Db: Damp heat, cyclic (12 + 12-Hour cycle)*

NOTE : Corresponding International Standard: IEC 60068-2-30:2005 *Environmental testing—Part 2-30: Tests—Test Db: Damp heat, cyclic (12 h + 12 h cycle)* (IDT)

JIS C 60068-2-45:1995 *Environmental testing procedures of electronic and electrical resistance to solvents (immersion in cleaning solvents)*

NOTE : Corresponding International Standard: IEC 60068-2-45:1980 *Environmental testing. Part 2: Tests. Test XA and guidance: Immersion in cleaning solvents* and Amendment 1:1993 (IDT)

JIS C 60068-2-54:2009 *Environmental testing—Part 2-54: Tests—Test Ta: Solderability testing of electronic components by the wetting balance method*

NOTE : Corresponding International Standard: IEC 60068-2-54:2006 *Environmental testing—Part 2-54: Tests—Test Ta: Solderability testing of electronic components by the wetting balance method* (MOD)

JIS C 60068-2-58:2006 *Environmental testing—Part 2: Tests—Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

NOTE : Corresponding International Standard: 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)* (MOD)

JIS C 60068-2-69 *Environmental testing—Part 2-69: Tests—Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method*

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