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(JEITA/JSA)

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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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 60068-2-20:1996** is replaced with this Standard.

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JIS C 60068-2 series consists of the following 49 parts;

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

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

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

JIS C 60068-2-7 *Test Ga and guidance: Acceleration, steady state*

JIS C 60068-2-11 *Test Ka: Salt mist*

JIS C 60068-2-13 *Test M: Low air pressure*

JIS C 60068-2-17 *Test Q: Sealing*

JIS C 60068-2-18 *Part 2-18: Tests—Test R and guidance: Water*

JIS C 60068-2-20 *Test T: Soldering*

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

JIS C 60068-2-27 *Test Ea and guidance: Shock*

JIS C 60068-2-29 *Test Eb and guidance: Bump*

JIS C 60068-2-30 *Test Db: Damp heat, cyclic (12 + 12-Hour cycle)*

JIS C 60068-2-31 *Test Ec: Drop and topple, primarily for equipment-type specimens*

JIS C 60068-2-32 *Test Ed: Free fall*

JIS C 60068-2-38 *Test Z/AD: Composite temperature/humidity cyclic test*

JIS C 60068-2-39 *Test Z/AMD: Combined sequential cold, low air pressure, and damp heat test*

JIS C 60068-2-40 *Test Z/AM: Combined cold/low air pressure tests*

- JIS C 60068-2-41 *Test Z/BM: Combined dry heat/low air pressure tests*
- JIS C 60068-2-42 *Test Kc: Sulphur dioxide test for contacts and connections*
- JIS C 60068-2-43 *Test Kd: Hydrogen sulphide test for contacts and connections*
- JIS C 60068-2-45 *Testing procedures of resistance to solvents (immersion in cleaning solvents)*
- JIS C 60068-2-46 *Guidance to Test Kd: Hydrogen sulphide test for contacts and connections*
- JIS C 60068-2-47 *Part 2-47: Test methods—Mounting of specimens for vibration, impact and similar dynamic tests*
- JIS C 60068-2-48 *Part 2: Tests. Guidance on the application of the tests of JIS environmental testing series to simulate the effects of storage*
- JIS C 60068-2-49 *Guidance to Test Kc: Sulphur dioxide test for contacts and connections*
- JIS C 60068-2-50 *Tests Z/AFc: Combined cold/vibration (sinusoidal) tests for both heat-dissipating and non-heat-dissipating specimens*
- JIS C 60068-2-51 *Tests Z/BFc: Combined dry heat/vibration (sinusoidal) tests for both heat-dissipating and non-heat-dissipating specimens*
- JIS C 60068-2-52 *Test Kb: Salt mist, cyclic (sodium, chloride solution)*
- JIS C 60068-2-53 *Guidance to tests Z/AFc and Z/BFc: Combined temperature (cold and dry heat) and vibration (sinusoidal) tests*
- JIS C 60068-2-54 *Test Ta: Solderability testing by the wetting balance method*
- JIS C 60068-2-57 *Time-history vibration test method*
- JIS C 60068-2-58 *Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*
- JIS C 60068-2-59 *Test Fe: Vibration—Sine-beat method*
- JIS C 60068-2-60 *Test Ke: Flowing mixed gas corrosion test*
- JIS C 60068-2-61 *Test Z/ABDM: Climatic sequence*
- JIS C 60068-2-64 *Test Fh: Vibration, broad-band random (digital control) and guidance*
- JIS C 60068-2-65 *Part 2-65: Vibration, acoustically induced*
- JIS C 60068-2-66 *Test Cx: Damp heat, steady state (unsaturated pressurized vapour)*
- JIS C 60068-2-67 *Test Cy: Damp heat, steady state, accelerated test primarily intended for components*
- JIS C 60068-2-68 *Dust and sand test*
- JIS C 60068-2-69 *Part 2-69: Tests—Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method*
- JIS C 60068-2-70 *Part 2: Tests—Test Xb: Abrasion of markings and letterings caused by rubbing of fingers and hands*

JIS C 60068-2-75 *Part 2-75: Tests—Test Eh: Hammer tests*

JIS C 60068-2-77 *Test 77: Body strength and impact shock*

JIS C 60068-2-78 *Part 2-78: Tests—Test Cab: Damp heat, steady state*

JIS C 60068-2-80 *Part 2-80: Tests—Test Fi: Vibration—Mixed mode*

JIS C 60068-2-81 *Part 2-81: Shock—Shock response spectrum synthesis*

JIS C 60068-2-82 *Part 2-82: Tests—Test XW1: Whisker test methods for electronic and electric components*

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

Introduction

This Japanese Industrial Standard has been prepared based on the fifth edition of **IEC 60068-2-20** published in 2008 without modifying the technical contents.

The portions with dotted underlines are the matters not given in corresponding International Standard.

1 Scope

This Standard outlines Test T, applicable to devices with leads. Soldering tests for surface mounting devices (SMD) are described in **JIS C 60068-2-58**.

This Standard provides procedures for determining the solderability and resistance to soldering heat of devices in applications using solder alloys, which are eutectic or near eutectic tin lead (Pb) (hereafter referred to as “lead solder”), or lead-free alloys (hereafter referred to as “lead-free solder”).

The procedures in this Standard include the solder bath method and soldering iron method.

The objective of this Standard is to ensure that component lead or termination solderability meets the applicable solder joint requirements of **JIS C 61191-3** and **JIS C 61191-4**. In addition, test methods are provided to ensure that the component body can resist against the heat load to which it is exposed during soldering.

NOTE 1 Information about wetting time and wetting force can be obtained by test methods using a wetting balance. See **JIS C 60068-2-54** (solder bath method) and **JIS C 60068-2-69** (solder bath and solder globule method for SMDs).

NOTE 2 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows:

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)

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**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.