

ICS 31.180

CCS L 30



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 33772.1-2017

**Quality assessment systems -- Part 1: Registration and analysis
of defects on printed board assemblies**

Issued on: May 31, 2017

Implemented on: December 1, 2017

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

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Foreword

GB/T 33772 "Quality assessment system" plan released the following parts.

- Part 1. Statistics and analysis of defects on printed circuit board assemblies;
- Part 2. Selection and use of sampling schemes for electronic components and packaging inspection;

Part 3. Selection and use of sampling schemes for final product inspection and process supervision of printed boards and laminates.

This part is part 1 of GB/T 33772.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the re-drafting method to modify IEC 61193-1..2001 "Quality assessment system Part 1. Defects in printed circuit board components

Statistics and analysis ".

This part of the structure compared with IEC 61193-1..2001, made the following adjustments.

- adjust Appendix C number to Appendix B (see Chapter 5);
- adjust Appendix D numbers to Appendix C and adjust Appendix B numbers to Appendix D (see Chapter 6).

On the normative reference documents, this standard has made a technical differences in the adjustment to meet China's technical conditions, adjust the situation set

Is reflected in Chapter 2, "normative reference documents", the specific adjustments are as follows.

--- replace IEC 61191-1 with IEC 61193-1..2001 by equivalent GB/T 19247.1 using international standard;

--- replace IEC 61191-2 with IEC 61193-1..2001, equivalent to GB/T 19247.2 using

international standards;

--- IEC 61191-3 referenced by IEC 61193-1..2001 with GB/T 19247.3 equivalent to international standard;

--- replace IEC 61191-4 with IEC 61193-1..2001 cited GB/T 19247.4 with equivalent international standard.

The following editorial changes are made to this standard.

--- 3.4.6 and 3.5.5 The original terms are "component damage", the erroneous translation is "damaged before welding" and "damaged parts after welding";

--- The source of the defect has increased the letter representation (see 4.4.1).

This part is made by the Ministry of Industry and Information Technology of the People's Republic of China.

This part of the National Printed Circuit Standardization Technical Committee (SAC/TC47) centralized.

This part of the drafting unit. China Electronic Technology Standardization Institute.

This part of the drafters. Tong Xiaoming, Cao Yi.

Introduction

This part is part of GB/T 33772 for counting the number of defects in the printed circuit board assembly sold in electronic circuit manufacturing and pressing

The standard approach is used to calculate the numerical value of the ppm fraction (ppm) of these defective parts.

The number of defects in the production process, the level of the defect is generally low, usually in ppm. Literally,

The value of the ppm value of the weld process is clear that the "part" of the part of the part is the number of defective solder joints, and "million" means

One million solder joints.

In order to collect statistical defects in a uniform manner, it is important to emphasize that the soldering defects in this standard should be carried out after the actual welding operation

Ready to come out of the welded components) immediately count. According to the Platonic analysis method, it is possible to assess whether the defect is inappropriate or by the welding process

For other reasons.

In order to calculate the ppm value, it is to be understood that the mathematical meaning of the number of defects found in a particular batch (i.e., smaller than the bulk product)

Batch of reasoning results.

When referring to the ppm value of a welding process, the number of solder joints is not involved and the confidence is not given because the confidence data is not limited to the number of defects

According to aspects of no use.

To calculate the ppm value, several methods are described to determine the expected maximum ppm level, for example.

- use the formula that describes the binomial distribution to construct its distribution state;
- use a graphical or tabular form from a documentary document.

Quality assessment system Part 1.

Statistics and Analysis of Defects on Printed Board Components

1 Scope

This part of GB/T 33772 specifies the statistical and analytical methods for the various machining defects on welded PCB components,

Two ways to collect data in parts per million (ppm) data.

This section applies to the effective comparison of the characteristics between products, between processes and between production sites, and as an improvement in overall quality in accordance with.

The two methods and functions of collecting defect data as defined in this section are as follows.

a) Category 1 ppm data. The defect data provided by this method can be used to compare the overall performance of the assembly process to achieve

The purpose of the meter.

b) Category 2 ppm data. The defect data provided by this method is used to assess, analyze and control a single process.

2 normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article

Pieces. For undated references, the latest edition (including all modifications) applies to this

document.

GB/T 19247.1 Printed board assembly - Part 1. Generic specification - Electronic and electrical use of surface mount and associated assembly technology

Requirements for welding assembly (GB/T 19247.1-2003, IEC 61191-1..1998, IDT)

GB/T 19247.2 PCB assembly - Part 2. Sectional specification - Requirements for surface mount welding assembly (GB/T 19247.2 -

2003, IEC 61191-2..1998, IDT)

GB/T 19247.3 PCB assembly - Part 3. Sectional specification - Requirements for through - hole mounting and assembly (GB/T 19247.3 -

2003, IEC 61191-3..1998, IDT)

GB/T 19247.4 Assembly of printed boards - Part 4. Requirements for lead assembly assembly (GB/T 19247.4-2003,

IEC 61191-4..1998, IDT)

IEC 60194 printed circuit board design, production and assembly of terms and definitions (Printedboarddesign, manufactureandas-

sembly-Termsanddefinitions)

IEC 61192-1 Product performance requirements - Part 1. General requirements - Requirements and guidance for the production of electronic components for welding

performancerequirements-Part 1.

Genericstandard-Workmanshiprequirementsandguidelinesfor

solderedelectronicassemblies) 1)

IEC 61192-2 Product performance requirements - Part 2. Requirements and guidance for the production of subassembled surface assemblies for electronic components

(Productperformancerequirements-Part 2.

Sectionalstandard-Workmanshiprequirementsand

guidelinesforsolderedsurfacemountelectronicassemblies) 1)

IEC 61192-3 Product performance requirements - Part 3. Requirements and guidance for sub - standard welded through - hole assembly components

performancerequirements-Part 3.

Sectionalstandard-Workmanshiprequirementsforthrough-hole

mountsolderedassemblies) 2)

1) published.