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

GB/Z 41275.23-2023

**Process management for avionics - Aerospace and defence electronic systems
containing lead-free solder - Part 23: Rework and repair guidance to address the
implications of lead-free electronics and mixed assemblies**

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Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents"

Drafting:

This document is Part 23 of GB/T (Z) 41275 "Aviation Electronics Process Management Aerospace and Defense Electronic Systems Containing Lead-Free Solder"

point: GB/T (Z)41275 has released the following parts:

- Part 2: Reducing the harmful effects of tin;
- Part 3: System performance test methods containing lead-free solder and lead-free pins;
- Part 4: Ball Grid Array Ball Planting;
- Part 21: Transition Guide to Lead-Free Electronics;
- Part 22: Technical Guidelines;
- Part 23: Guidelines for rework/repair of lead-free and mixed electronic products:

This document is equivalent to IEC /T S62647-23:2013 "Aviation Electronics Process

Management of Lead-free Solders for Aerospace and Defense Electronics"

System Part 23: Guidelines for Rework/Repair of Lead-Free and Mixed Electronic Products, the file type is adjusted from IEC 's technical specifications to my country's national

National standardization guidance technical documents:

This document has made the following minimal editorial changes:

---Deleted the expression Fahrenheit (degrees F) in IEC /T S62647-23:2013;

--- Corrigendum to the definition of term 3:1:29 "repair";

---Added "note" in 4:2:2:2:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

GB/T (Z) 41275 specifies the management and technical requirements for lead-free aerospace, national defense and high-performance electronic systems:

Consists of 7 parts:

---Part 1: Preparation of lead-free control plan: The purpose is to provide for lead-free control of programming of aerospace, defense and high-performance electronic systems:

plan goals and requirements:

---Part 2: Reducing the harmful effects of tin: The purpose is to regulate aerospace, defense and high-performance electronic systems to reduce the harmful effects of tin:

The technical methods adopted for the impact:

---Part 3: System performance test methods containing lead-free solder and lead-free pins: The purpose is to regulate lead-free solder and lead-free tubing

Performance test methods and test procedures for aerospace, defense, and high-performance electronic systems:

---Part 4: Ball Grid Array Ball Planting: The purpose is to regulate aerospace, defense and high-performance electrical products containing lead-free solder and lead-free leads:

Requirements for subsystem replacement of ball grid array (BGA) component solder balls:

---Part 21: Transition Guide to Lead-Free Electronics: The purpose is to provide for aerospace and defense electronic system project management or system

A guide for engineering management to manage the transition to lead-free electronics:

---Part 22: Technical Guidelines: The purpose is to provide for aerospace, defense and

high-performance electronic systems to ensure continued performance, quality,

Technical guidance for reliability, safety, airworthiness, configuration control, affordability, maintainability, and supportability:

---Part 23: Guidelines for rework/repair of lead-free and mixed electronic products: The purpose is to specify aerospace, defense and high performance electronics

Technical guidelines for disassembly and replacement of parts (including components) during system rework/repair:

This document is intended to facilitate the development of procedures and processes for use in the rework/repair of aerospace, defense, and high performance electronic systems: This document package

Charges containing equipment processes that support tin-lead or lead-free solder alloys, tin-lead or lead-free components, and printed circuit boards/printed wiring board plating, or combinations thereof

information:

Avionics Process Management

Aerospace and defense electronic systems containing lead-free solder

Part 23: Rework of lead-free and mixed electronic products/

Repair guide

1 Scope

This document provides technical background, procurement guidance, engineering procedures, and guidance to assist organizations developing aerospace and high-performance electronic systems

Rework/repair, whether assembled or returned using conventional alloys (Sn-Pb or lead-free alloys) or a combination of solder and surface plating

Worked/repared system: This document contains a review of known effects and issues and rework/repair procedures, with an emphasis on service technicians performing tasks:

Provide technical architecture for the service:

This document provides guidelines for component removal and replacement: The term "rework/repair" in this document is as defined in 3:1:29 and 3:1:30

use:

The information contained in this document is based on the current knowledge of the industry at the time of publication: Due to the rapid changes in the knowledge base, this

document is for guidance only:

Note 1: In this document, if the element "lead" is implied, then Pb, lead (Pb) or tin-lead will be used: If referring to component terminals or terminal "leads" such as flat

package or dual in-line package, the term lead/terminal or lead-terminal will be used:

Note 2: The processes identified in this document are suitable for rework or repair:

This document is applicable to the aerospace and defense electronic system industries, and other high-performance and high-reliability industries can be used as a reference:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations

For documents, only the version corresponding to the date applies to this document; for undated referenced documents, the latest version (including all modification orders) applies in this document:

IEC /T S62647-1:2012 Avionics process management Aerospace and defense electronic systems containing lead-free solders Part 1: None

taining lead-free solder-Part 1: Preparation for a lead-free control plan)

3 Terms, definitions and abbreviations

3:1 Terms and definitions

The following terms and definitions apply to this document:

3:1:1

Alloy composition alloy composition

The total composition of an alloy, defined by weight as a percentage:

Note: For example, 63Sn-37Pb is equivalent to a mixture of 63% tin (by weight) and 37% lead (by weight):

[Source: GB /Z 41275:22-2023, 3:1:1]