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## IPC-HDBK-9798A

# Handbook for Press-fit Standard for Automotive Requirements and other High-Reliability Applications

If a conflict occurs between the English language and translated versions of this document, the English version will take precedence.

Developed by the Cold Joining Press-fit Handbook Task Group (5-21n) of the Assembly & Joining Committee (5-20) of Global Electronics Association.

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## Table of Contents

<b>1</b>	<b>SCOPE</b>	1	<b>6</b>	<b>HANDLING AND PACKAGING</b>	19
<b>1.1</b>	<b>Purpose</b>	1	<b>6.1</b>	<b>General</b>	19
<b>1.2</b>	<b>Measurement Units</b>	1	<b>6.2</b>	<b>Handling of Compliant Press-Fit Products</b>	19
1.2.1	Verification of Dimensions	1	6.2.1	Handling for Testing and Qualification	19
<b>1.3</b>	<b>Use of "Lead"</b>	1	6.2.1.1	Product Supply	19
<b>1.4</b>	<b>Abbreviations and Acronyms</b>	1	6.2.1.2	Cleaning	19
<b>1.5</b>	<b>Terms and Definitions</b>	1	6.2.1.3	Ambient Test Conditions	19
<b>2</b>	<b>APPLICABLE DOCUMENTS</b>	2	6.2.1.4	Push-In and Push-Out Process	20
<b>2.1</b>	<b>IPC Documents</b>	2	6.2.1.5	Storage of Samples	20
<b>2.2</b>	<b>International Electrotechnical Commission Documents</b>	2	6.2.2	Packaging for Mass Production	21
<b>2.3</b>	<b>American Society for Testing and Materials</b>	2	6.2.3	Final Packaging for Shipping and Storage	22
<b>3</b>	<b>INTRODUCTION TO PRESS-FIT TECHNOLOGY</b>	3	6.2.4	Product Storage (Warehouse)	22
<b>3.1</b>	<b>Background of Press-Fit Technology</b>	3	6.2.5	Packaging for Lab, Validation and Retained Samples	22
<b>3.2</b>	<b>Press-Fit Technology</b>	3	<b>7</b>	<b>TEST METHODS</b>	23
<b>3.3</b>	<b>Advantages and Challenges</b>	3	<b>7.1</b>	<b>Storage and Test Conditions</b>	23
<b>3.4</b>	<b>Current and Future Trends</b>	4	<b>7.2</b>	<b>Preparation of Microsection for Compliant Press-Fit Pin Connections</b>	23
<b>4</b>	<b>CONTACT PHYSICS</b>	5	7.2.1	General	23
<b>5</b>	<b>MATERIALS</b>	9	7.2.2	Potting	23
<b>5.1</b>	<b>Pin Base Metal and Metallurgical Requirements</b>	9	7.2.3	Microsectioning of Compliant Press-Fit Pin Connection	23
5.1.1	Formability and Weldability	9	<b>7.3</b>	<b>Contact Resistance</b>	24
5.1.2	Electrical Conductivity	9	7.3.1	Test Equipment	24
5.1.3	Yield Strength	9	7.3.2	Test Procedure	24
5.1.4	Resistance to Thermal Stress Relaxation	10	7.3.2.1	Using an Adjacent PPTH for Contacting	26
5.1.5	Resistance Against Vibrations	10	7.3.2.2	Using an Adjacent Via for Contacting	27
5.1.6	Material Selection	11	7.3.2.3	Using Adjacent Vias or PPTHs for Contacting in a Daisy Chain	28
5.1.7	Surface Requirements	11	<b>7.4</b>	<b>Spring Force Measurement</b>	29
<b>5.2</b>	<b>Surface Finish</b>	12	7.4.1	Definition	29
5.2.1	Coating - Press-Fit Surface Finishes	12	7.4.1.1	Spring Force Measurement Characteristics	29
5.2.2	Functional Impact of Surface Finishes	15	7.4.1.2	Requirements for the Test Tool and Test Equipment	29
5.2.2.1	Surface Finish Impact on Whisker Growth	15	7.4.1.3	Description of the Correction Curve	29
5.3	Printed Boards	15	7.4.1.4	Typical Design of a Test Fixture	30
5.3.1	Copper Thickness	16	7.4.1.5	Preparation of the Pin with Compliant Press-Fit Zones before Measurement	30
5.3.2	Printed Board Surface Finishes	17	7.4.2	Measurement Process	30
5.3.3	Printed Board Through Hole Dimensioning	17	<b>7.5</b>	<b>Push-In Method and Typical Push-In Forces</b>	31
5.3.3.1	Examples and Conditions for the Through Hole Manufacturing Specification	17	7.5.1	Push-In Method	31
5.3.4	Printed Board Base Materials	18	7.5.2	Typical Push-In Forces	31

<b>7.6</b>	<b>Whisker Inspection Method</b>	32	Figure 5-4	AgSn Plating System Overview and Process Options (A) and (B)	13
<b>8</b>	<b>REWORK</b>	33	Figure 5-5	Indium Plating Process and System Overview	14
<b>8.1</b>	<b>Introduction</b>	33	Figure 5-6	Bismuth Plating Process and System Overview	14
<b>8.2</b>	<b>Boundary Conditions for Press-Fit Rework</b>	33	Figure 5-7	Typical Ni Plating Process and System Overview	14
8.2.1	Design for Press-Fit Rework	33	Figure 5-8	Schematic View of a Longitudinal Microsection Indicating the Locations for the Measurements (A to F) Shown as an Example on a Four-Layer Printed Board	16
8.2.1.1	Printed Board	33	Figure 5-9	Schematic View of Biasing Press-Fit Applications Between e.g., Two Compliant Press-Fit Zones	18
8.2.1.2	Compliant Press-Fit Pins and Components	34	Figure 6-1	Front and Side Views of Fixture (1) and Support Plate (2) for Push-In Process	20
8.2.2	Tooling	34	Figure 6-2	Fixture (1) and Push-Out Tool (2) for Push-Out Process	20
8.2.2.1	Removal of Press-Fit Pin or Component	34	Figure 6-3	Strip with (Left) and without (Right) Overmolding	21
8.2.2.2	Installation of New Press-Fit Pin or Component	35	Figure 6-4	Reel Packaging	21
<b>8.3</b>	<b>Validation of Reworkability</b>	35	Figure 6-5	Single Parts	21
<b>8.4</b>	<b>Performing Press-Fit Rework</b>	38	Figure 6-6	Blister Packaging	21
8.4.1	General	38	Figure 6-7	Tube Packaging	21
8.4.2	Process Flow for Product-Level Press-Fit Rework	38	Figure 6-8	Tray Packaging	21
8.4.3	Execution of Press-Fit Rework	39	Figure 7-1	Microsection with Grinding Marks	23
<b>APPENDIX A Abbreviations and Acronyms</b> ..... 40			Figure 7-2	Microsection without Grinding Marks	23
<b>Figures</b>			Figure 7-3	Contact Resistance Measurement Schematic	25
Figure 3-1	Compliant Press-Fit Zone in PPTH	3	Figure 7-4	Using an Adjacent PPTH for Contacting	26
Figure 3-2	Examples of Different Styles of Compliant Press-Fit Zones [1]	3	Figure 7-5	Using an Adjacent Via for Contacting	27
Figure 4-1	Schematic to Illustrate the Interlocking of Asperities Between Surfaces on a Microscopic Scale	5	Figure 7-6	Using Adjacent Vias for Contacting in a Daisy Chain	28
Figure 4-2	Current Flow Through the A-Spots	5	Figure 7-7	Using the PPTH for Contacting in a Daisy Chain	28
Figure 4-3	Example of Plastic Deformation of the Compliant Press-Fit Pin and PPTH After Insertion on the Macroscopic Scale	6	Figure 7-8	Principle of the Spring Force Measurement (SFM) of Compliant Press-Fit Zones	29
Figure 4-4	Schematic to Illustrate Broadening of the A-spots Between Surfaces on a Microscopic Scale	6	Figure 7-9	Typical Spring Force Measurement Characteristics (the corrective curve needs to be subtracted from the measured curves for the complete measurement)	29
Figure 4-5	Schematic to Illustrate a Gas Tight, Intimate Metal-to-metal Contact Interface Between Surfaces	7	Figure 7-10	Schematic of Spring Force Measurement Tool	30
Figure 4-6	Illustration of Basic Cold-welded Interface Compared to an Interface Where Diffusion Between Surface Materials Takes Place	8	Figure 7-11	Example for the Spring Force Measurement Preparation of a Triple Pin	30
Figure 4-7	Illustration of IMC Formation After Diffusion	8	Figure 7-12	Slow Speed Push-In Equipment (A) and a Typical Push-In Force Curve (B)	31
Figure 5-1	Silicides in C70250 Alloy Visible as Black Spots	10			
Figure 5-2	Thermal Relaxation Diagram	10			
Figure 5-3	Conductivity vs. Strength Diagram of Copper Alloys	11			

		<b>Tables</b>
Figure 7-13	High Speed Push-In Equipment (A) and a Typical Push-In Force Curve (B).....	31
Figure 7-14	Different Printed Board Surface Finishes (push-in force vs depth).....	32
Figure 7-15	Push-In Forces for Different Press-Fit Designs.....	32
Figure 7-16	Push-In Forces: Various Plating Options on the Same Pin with the Same Printed Board Finish .....	32
Figure 7-17	Exemplary Illustration of Positions for Whisker Inspection .....	33
Figure 8-1	Flat Block Pushing Out a Group of Protruding Press-Fit Pins.....	34
Figure 8-2	Flat Block Push-Out Tooling.....	34
Figure 8-3	Tooling to Push-Out Each Compliant Press-Fit Pin by Inserting a Push-In Needle in Each PPTH .....	34
Figure 8-4	Tool That Grabs the Compliant Press-Fit Pin Shoulders and Pulls It Out from the Printed Board with a Mechanical Support Fixing the Support .....	35
Figure 8-5	Insertion of Press-Fit Component (A) and Time-Force Curve During the insertion (B)....	35
Figure 8-6	Reworkability Qualification Flow-Chart for Compliant Press-Fit Pin Assemblies.....	36
Figure 8-7	Contact Area Wear Mark During Pin Removal..	37
Figure 8-8	Heavily Damaged PPTH After Compliant Press-Fit Pin Removal .....	37
Figure 8-9	Product Level Press-Fit Rework Process Flow .....	38
	Table 3-1	Advantages and Common Challenges of Press-Fit Technology with Reference to Selective Soldering .....
	Table 4-1	4
	Table 4-2	Mechanical and Electrical Tests in IPC-9797 .....
	Table 4-3	6
	Table 5-1	Optical and Microsectional Inspections in IPC-9797.....
	Table 5-2	6
	Table 6-1	Requirements for Printed Board, Compliant Press-Fit Zone and Related Tests in IPC-9797 .....
		9
		Typically Applied Copper Alloys for Press-Fit Connectors and Their Properties .....
		11
		Example for a Typically Observed PPTH Definition .....
		18
		Packaging Levels.....
		22

# Handbook for Press-fit Standard for Automotive Requirements and other High-Reliability Applications

## 1 SCOPE

This document provides guidelines and supporting information for manufacturing electronic assemblies using compliant press-fit technology. The intent is to explain the “how-to” and “why” information, and fundamentals for these processes.

Additional detailed information can be found in documents referenced within each individual section. Users are encouraged to use those referenced documents to better understand the applicable subject areas.

This handbook is supporting the IPC-9797 standard.

### 1.1 Purpose

This document is for guidance only. The design concepts, guidelines and procedures presented in this document are not requirements, and this document is not binding, unless separately and specifically included by the applicable contract, approved drawing(s) or purchase order.

### 1.2 Measurement Units

This document uses International System of Units (SI units) per IEEE/ASTM SI 10, Section 3 [Imperial English equivalent units are in brackets for convenience]. The SI units used in this document are millimeters (mm) [in] for dimensions and dimensional tolerances, Celsius (°C) [°F] for temperature and temperature tolerances, grams (g) [oz] for weight, and lux (lx) [footcandles] for illuminance.

**Note:** This document uses other SI prefixes (ASTM SI10, Section 3.2) to eliminate leading zeroes (for example, 0.0012 mm becomes 1.2  $\mu$ m) or as an alternative to powers-of-ten ( $3.6 \times 10^3$  mm becomes 3.6 m).

#### 1.2.1 Verification of Dimensions

When an inspection is done on an assembly, measuring dimensions and determining percentages listed in the document are not required unless there is a doubt or a question is raised about the acceptance of the product. When there is a doubt or a question is raised, then a referee determination should be implemented, at which time measurements should be made or percentages calculated using the referee magnifications defined in the document. For determining conformance to the specifications in this document, round all observed or calculated values “to the nearest unit” in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM E29. For example, specifications of 2.5 mm max, 2.50 mm max or 2.500 mm max, round the measured value to the nearest 0.1 mm, 0.01 mm or 0.001 mm, respectively, and then compare to the specification number cited.

#### 1.3 Use of “Lead”

For readability and translation, this document uses the noun lead only to describe leads of a component. The metallic element lead is always written as Pb.

#### 1.4 Abbreviations and Acronyms

Periodic table elements are abbreviated in the document. See Appendix A for abbreviations, including elements and acronyms used in this document.

#### 1.5 Terms and Definitions

Other than those terms listed in IPC-9797, the definitions of terms used in this document are in accordance with IPC-T-50.