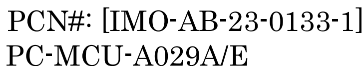

Product Change Notice (PCN)

Subject: Notice of Change of Die-Bond Material for H8, H8S, and SH Family Surface-Mount Package Products

Publication Date: 5/21/2024

Effective Date: 1/20/2025

Revision Description: Initial release

Description of Change:

Applicable products: H8, H8S, and SH family QFP/FQFP/LFQFP/TFQFP products
The back-end factory: Renesas Electronics Corporation Yonezawa Factory (“Yonezawa”)
Changes: The die-bond material will be changed.
The new die-bond material is a proven one for mass production at “Yonezawa”.

Affected Product List:

Refer to the Product List in the appendix below.

Reason for Change:

To change to an alternate material due to the termination of supply of the material by the die-bond materials manufacturer.

Impact on Fit, Form, Function, Quality & Reliability:

This change will not affect fitting, form, function, quality, and reliability.

Product Identification:

Our production history data can be queried by using the trace code of the product.

Qualification Status:

The reliability test has been completed. Refer to the attached supplementary material.

Sample Availability Date: Not applicable

Device Material Declaration:

Please contact our sales representatives or distributors.

Note:

1. Acknowledgement must be received by Renesas within 30 days or Renesas will consider the change as approved.

2. If timely acknowledgement is provided by Customer, then Customer shall have 90 days from the date of receipt of this PCN to make any objections to this PCN. If Customer fails to make objections to this PCN within 90 days of the receipt of the PCN then Renesas will consider the PCN changes as approved.

3. If customer cannot accept the PCN then customer must provide Renesas with a last time buy demand and purchase order.

For additional information regarding this notice, please contact your Renesas sales representative.

Appendix: Product List

No.	Part Number	Package Type	Number of Pins	Family
1	D12324SVTE25V	TFQFP	120	H8S
2	D32217***TFV	TFQFP	100	H8S
3	D338324***WWV#GZ	TFQFP	80	H8
4	D338327***WV	TFQFP	80	H8
5	DF2134AFA20JGV	QFP	80	H8S
6	DF2134AFA20LGV	QFP	80	H8S
7	DF2134AVTF10V	TFQFP	80	H8S
8	DF2138ATF20V	TFQFP	80	H8S
9	DF2138AVTF10V	TFQFP	80	H8S
10	DF2148BFA20IV	FQFP	100	H8S
11	DF2148BFA20V	FQFP	100	H8S
12	DF2148BVFA10V	FQFP	100	H8S
13	DF2218CUTF24V	TFQFP	100	H8S
14	DF2218TF24DV	TFQFP	100	H8S
15	DF2218TF24V	TFQFP	100	H8S
16	DF2218UTF24V	TFQFP	100	H8S
17	DF2238AFA13V	FQFP	100	H8S
18	DF2238BFA13IV	FQFP	100	H8S
19	DF2238BFA13V	FQFP	100	H8S
20	DF2238BTF13V	TFQFP	100	H8S
21	DF2238RTF13V	TFQFP	100	H8S
22	DF2239FA16V	FQFP	100	H8S
23	DF2239FA20IV	FQFP	100	H8S
24	DF2239FA20V	FQFP	100	H8S
25	DF2239TF20V	TFQFP	100	H8S
26	DF2258FA13IV	FQFP	100	H8S
27	DF2265FA13V	FQFP	100	H8S
28	DF2265FA20V	FQFP	100	H8S
29	DF2266TF13V	TFQFP	100	H8S
30	DF2268FA13V	FQFP	100	H8S
31	DF2268FA20V	FQFP	100	H8S
32	DF2318VF25V	QFP	100	H8S
33	DF2329BVTE25V	TFQFP	120	H8S
34	DF2338VFC25V	FQFP	144	H8S
35	DF2360VTE34V	TFQFP	120	H8S
36	DF2362VTE34V	TFQFP	120	H8S
37	DF2364VTE34V	TFQFP	120	H8S
38	DF2505FC26DV	FQFP	144	H8S
39	DF2505FC26DV#Z1	FQFP	144	H8S
40	DF2506FC26DV	FQFP	144	H8S
41	DF2506RFC26DV	FQFP	144	H8S
42	DF2552FC26DV	FQFP	144	H8S
43	DF2552RFC26DV	FQFP	144	H8S
44	DF2556FC20DV	FQFP	144	H8S
45	DF38076RW10V	TFQFP	80	H8
46	DF38122WV	TFQFP	80	H8
47	DF38124HV	QFP	80	H8
48	DF38124WV	TFQFP	80	H8
49	DF38324HV	QFP	80	H8
50	DF38324HWV	QFP	80	H8
51	DF38324WV	TFQFP	80	H8

No.	Part Number	Package Type	Number of Pins	Family
52	DF38324WWV	TFQFP	80	H8
53	DF38327HV	QFP	80	H8
54	DF38327HWV	QFP	80	H8
55	DF38327WV	TFQFP	80	H8
56	DF38327WWV	TFQFP	80	H8
57	DF38344HV	FQFP	100	H8
58	DF38344XV	TFQFP	100	H8
59	DF38347HV	FQFP	100	H8
60	DF38347HWV	FQFP	100	H8
61	DF38347WV	TFQFP	100	H8
62	DF38347XV	TFQFP	100	H8
63	DF38427HV	QFP	80	H8
64	DF38447HV	FQFP	100	H8
65	DF61653N50FTV	TFQFP	120	H8S
66	DF61654W50FTV	TFQFP	120	H8S
67	DF61656CN35FTV	TFQFP	120	H8S
68	DF70834AD80FTV	TFQFP	100	SH
69	DF70834AN80FTV	TFQFP	100	SH
70	DF70835AD80FTV	TFQFP	100	SH
71	DF70835AD80FTV#ZB	TFQFP	100	SH
72	DF70835AN80FTV	TFQFP	100	SH
73	HD6417144F50V	QFP	112	SH
74	HD6417145F50V	LFQFP	144	SH
75	HD6417145FN50V	LFQFP	144	SH
76	HD6437048***FV	QFP	80	SH
77	HD6437048***FWV	QFP	80	SH
78	HD6437065***FV	LFQFP	176	SH
79	HD6437104***FV	QFP	80	SH
80	HD6437104***FWV	QFP	80	SH
81	HD6437144***FV	QFP	112	SH
82	HD6437144W***EV	QFP	112	SH
83	HD6437144W***FV	QFP	112	SH
84	HD6437145***FV	LFQFP	144	SH
85	HD6437145W***FV	LFQFP	144	SH
86	HD6437148R***FV	QFP	80	SH
87	HD64F7046F50V	QFP	80	SH
88	HD64F7046FW50V	QFP	80	SH
89	HD64F7065AF60V	LFQFP	176	SH
90	HD64F7144F50V	QFP	112	SH
91	HD64F7144FW50V	QFP	112	SH
92	HD64F7145F50V	LFQFP	144	SH
93	HD64F7145FW50V	LFQFP	144	SH
94	R5F72865D100FA#U2	LFQFP	176	SH
95	R5F72865N100FA#U2	LFQFP	176	SH
97	R5F72866D100FA#U2	LFQFP	176	SH
98	R5F72866N100FA#U2	LFQFP	176	SH
99	R5F72867D100FA#G2	LFQFP	176	SH
100	R5F72867D100FA#U2	LFQFP	176	SH

TO CUSTOMERS

Notice of Die-Bond Material Change for H8, H8S, and SH1/SH2 Family Surface Mount Packaged Products

MAY.21/2024

OPERATIONS AND LIFE CYCLE MANAGEMENT DEPT
EMBEDDED PROCESSING 1ST BUSINESS DIVISION
EMBEDDED PROCESSING PRODUCT GROUP
RENESAS ELECTRONICS CORPORATION

PCN#: [IMO-AB-23-0133-1]
PC-MCU-A029A/E

EP1OP-AB-24-0028-1

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(Rev. 5.0-1 October 2020)

CONTENT

- Introduction

1. Overview of Changed Materials
2. Changed Materials
3. Manufacturing Flow
4. Changes in Four Ms
5. Reliability Test Results

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BIG IDEAS FOR EVERY SPACE RENESAS

INTRODUCTION

Thank you for continuously using our products.

For stable supply of products, we will change the materials for assembly and test process.
The product specifications, characteristics, and quality assurance remain unchanged.
We would appreciate your kind cooperation to complete the procedure smoothly.

The material to be changed is a proven material that has been mass produced and shipped in over 280 million H8/H8S/H8SX/RX products. (Production results for the past 5 years)

The following pages provide an overview of the changes.

Yours sincerely,

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1. Overview of Changed Materials

Item		Current	Addition	Note
Assembly factory		Renesas Electronics Corporation Yonezawa Factory		No change
Final test factory				
Parts	Lead frame	–	–	No change
	Die Bond	Die Bond Material A manufactured by company A	Die Bond Material B manufactured by company A	Refer to page 6
	Mold resin (resin materials)	–	–	No change
Package	Outline	–	–	No change
Marking	Font	–	–	No change

There is no impact on reliability and specification.

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2. Changed Materials

Materials	Current	Addition
Die Bond materials	–	Similar materials are used.

There is no impact on reliability and specification.

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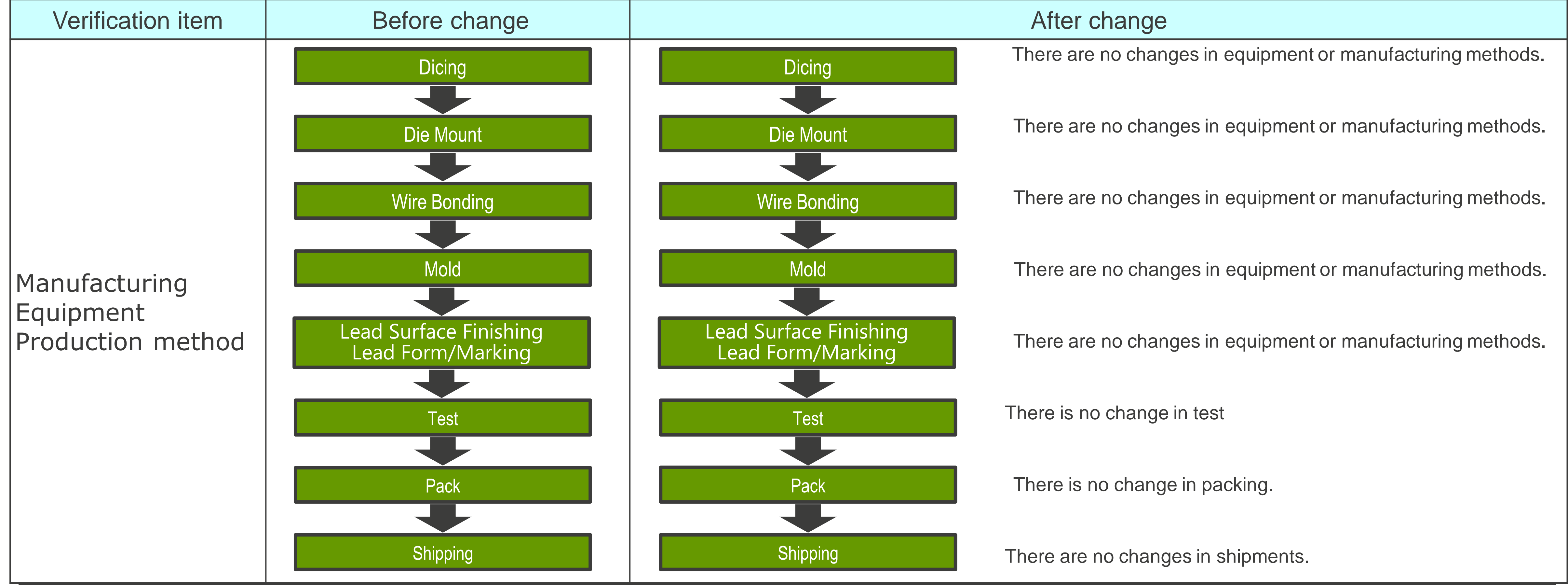
3. Manufacturing Flow

Indicates the manufacturing flow. The manufacturing equipment and manufacturing method are the same before and after the change of parts. In addition, there is no change in the manufacturing equipment and manufacturing methods used in each manufacturing process.



Verification item	Before change	After change	
Manufacturing Equipment Production method	Dicing	Dicing	There are no changes in equipment or manufacturing methods.
	Die Mount	Die Mount	There are no changes in equipment or manufacturing methods.
	Wire Bonding	Wire Bonding	There are no changes in equipment or manufacturing methods.
	Mold	Mold	There are no changes in equipment or manufacturing methods.
	Lead Surface Finishing Lead Form/Marking	Lead Surface Finishing Lead Form/Marking	There are no changes in equipment or manufacturing methods.
	Test	Test	There is no change in test
	Pack	Pack	There is no change in packing.
	Shipping	Shipping	There are no changes in shipments.

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4. Changes in Four Ms (Change of Die-Bond Materials）

Item	Check Result	Judgement
Machine	The die mounting process for die bond material A and die bond material B both use the same manufacturing equipment.	**No risk**
Method	The die mounting process for die bond material A and die bond material B is the same manufacturing method.	**No risk**
Man	Adopt operator certification system. Only certificated operator can work for the production.	**No risk**
Material	We use diebond materials that have been certified as materials. Both die bond material A and die bond material B have a track record of mass production, and we have confirmed that there is no problem.	**No risk**

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5. Reliability Test Results

Test Items	Test Conditions	Results Failure/Size
High temperature operating life (HTOL)	Ta = 125 ℃, Vccmax, 1000 hrs	0/45
High temperature storage life (HTSL)	Ta = 150 ℃, 1000 hrs	0/22
Temperature humidity bias (THB)	Ta = 85 ℃, RH=85 %, Vccmax, 1000 hrs	0/22
Temperature cycling (TC)	Ta = -55 ℃ to 150 ℃ , 500 cycles	0/22
Latch-up (LU)	Pulse current injection, I = +/-150 mA	0/5
Electrostatic discharge (ESD-HBM)	1.5 kΩ, 100 pF, +/-2000 V, 1 time	0/5
Solderability (SD)	245 ℃, 5 s, solder coverage ≥ 95 %	0/5
Resistance to soldering heat (PC)	MSL3 (moisture sensitivity level 3)	0/22

- Preprocessing of MSL3 was applied to THB and TC.
- Electrical testing was conducted on all samples to check that they satisfy the product specifications.
- Basically, certification testing was conducted using representative products with the same wafer process and the same package structure.

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