Product Change Notice (PCN)

Subject: Notice of Die Bond Material Change for H8, H8S and SH1/SH2 Family Surface Mount Package Products

Publication Date: 9/20/2023

Effective Date: 1/1/2024

Revision Description: Initial release

Description of Change:
Applicable products: H8, H8S, and SH1/SH2 family QFP/LQFP/FQFP/LFQFP/TFQFP products
Affected back-end production site: Outsourced semiconductor assembly & test sites (referred to as "OSAT")
Change: The die bond material is to be changed. The die bond material to be changed will be a proven material for mass production of OSAT products.

Affected Product List:
See the appendix "List of Part Numbers".

Reason for Change:
To change to an alternative material due to the termination of the material supply by the die bond material 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:
Reliability test have been completed. Please refer to the attached supplementary materials.

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 List of Part Numbers

No.	Part Number	Package Type	Number of Pins	Family
1	D12320VF20DV	FQFP	128	H8S
2	D12320VF20V	FQFP	128	H8S
3	D12320VF25IV	FQFP	128	H8S
4	D12320VF25V	FQFP	128	H8S
5	D12322RVF20V	FQFP	128	H8S
6	D12322RVF25V	FQFP	128	H8S
7	D12324SVF25V	FQFP	128	H8S
8	D12373RVFQ33V	LFQFP	144	H8S
9	D12373VFQ33V	LFQFP	144	H8S
10	D12394F20V	FQFP	128	H8S
11	D12394F20WV	FQFP	128	H8S
12	D32211xxxFPWV	LFQFP	64	H8S
13	D32317SxxxTEV	TFQFP	100	H8S
14	D32365xxxTEV	TFQFP	120	H8S
15	D32365xxxTEWV	TFQFP	120	H8S
16	D32375WxxxFQV	LFQFP	144	H8S
17	D33682xxxFPV	LFQFP	64	H8
18	D33682xxxHV	QFP	64	H8
19	D33683xxxHV	QFP	64	H8
20	D33683xxxFPV	LFQFP	64	H8
21	D33683GxxxFPV	LFQFP	64	H8
22	D33684xxxFPV	LFQFP	64	H8
23	D33685GxxxHV	QFP	64	H8
24	D33686xxxFPV	LFQFP	64	H8
25	D33686xxxFPIV	LFQFP	64	H8
26	D33687xxxFPV	LFQFP	64	H8
27	D3368xxxHV	QFP	64	H8
28	D33690xxxHV	QFP	64	H8
29	D33690xxxFYV	LFQFP	48	H8
30	D33692xxxHV	QFP	64	H8
31	D33692GxxxFYV	LFQFP	48	H8

No.	Part Number	Package Type	Number of Pins	Family
32	D33694xxxFYV	LFQFP	48	H8
33	D33694xxxFPV	LFQFP	64	H8
34	D338324xxxHWV	QFP	80	H8
35	D338327xxxWV	TFQFP	80	H8
36	D338327xxxHV	QFP	80	H8
37	DF2144ATE20V	TFQFP	100	H8S
38	DF2144AVTE10V	TFQFP	100	H8S
39	DF2148ATE20IV	TFQFP	100	H8S
40	DF2148ATE20V	TFQFP	100	H8S
41	DF2148AVTE10V	TFQFP	100	H8S
42	DF2148BTE20IV	TFQFP	100	H8S
43	DF2210CUFP24V	LFQFP	64	H8S
44	DF2211CUFP24V	LFQFP	64	H8S
45	DF2211CUFP24WV	LFQFP	64	H8S
46	DF2211FP24V	LFQFP	64	H8S
47	DF2211UFP24V	LFQFP	64	H8S
48	DF2211UFP24WV	LFQFP	64	H8S
49	DF2212CUFP24V	LFQFP	64	H8S
50	DF2212FP24DV	LFQFP	64	H8S
51	DF2212FP24V	LFQFP	64	H8S
52	DF2212UFP24DV	LFQFP	64	H8S
53	DF2212UFP24V	LFQFP	64	H8S
54	DF2215TE16V	TFQFP	120	H8S
55	DF2215UTE16V	TFQFP	120	H8S
56	DF2238BTE13V	TFQFP	100	H8S
57	DF2238RTE13IV	TFQFP	100	H8S
58	DF2238RTE13V	TFQFP	100	H8S
59	DF2239TE16V	TFQFP	100	H8S
60	DF2239TE20IV	TFQFP	100	H8S
61	DF2239TE20V	TFQFP	100	H8S
62	DF2268TE13V	TFQFP	100	H8S
63	DF2268TE20V	TFQFP	100	H8S
64	DF2317VTE25IV	TFQFP	100	H8S
65	DF2317VTE25V	TFQFP	100	H8S
66	DF2317VTEBL25V	TFQFP	100	H8S
67	DF2318VTE25IV	TFQFP	100	H8S
68	DF2318VTE25V	TFQFP	100	H8S
69	DF2319CVTE25V	TFQFP	100	H8S
70	DF2329BVF25V	FQFP	128	H8S
71	DF2360VTE34DV	TFQFP	120	H8S
72	DF2361VTE34V	TFQFP	120	H8S
73	DF2362VTE34DV	TFQFP	120	H8S
74	DF2367VF33V	FQFP	128	H8S
75	DF2367VF33WV	FQFP	128	H8S
76	DF2367VTE33V	TFQFP	120	H8S
77	DF2367VTE33WV	TFQFP	120	H8S
78	DF2368VTE34DV	TFQFP	120	H8S
79	DF2368VTE34FV	TFQFP	120	H8S
80	DF2370RVFQ34V	LFQFP	144	H8S
81	DF2370VFQ34V	LFQFP	144	H8S
82	DF2371VFQ34WV	LFQFP	144	H8S
83	DF2372VFQ34V	LFQFP	144	H8S
84	DF2377RVFQ33V	LFQFP	144	H8S
85	DF2377RVFQ33WV	LFQFP	144	H8S
86	DF2377VFQ33V	LFQFP	144	H8S
87	DF2377VFQ33WV	LFQFP	144	H8S
88	DF2378BVFQ35DV	LFQFP	144	H8S

No.	Part Number	Package Type	Number of Pins	Family
89	DF2378BVFQ35V	LFQFP	144	H8S
90	DF2378BVFQ35WV	LFQFP	144	H8S
91	DF2378RVFQ34DV	LFQFP	144	H8S
92	DF2378RVFQ34V	LFQFP	144	H8S
93	DF2378RVFQ34WV	LFQFP	144	H8S
94	DF2398F20V	FQFP	128	H8S
95	DF2398F20WTV	FQFP	128	H8S
96	DF2398F20WV	FQFP	128	H8S
97	DF2437FV	FQFP	128	H8S
98	DF2667VFQ33V	LFQFP	144	H8S
99	DF3028X25V	TFQFP	100	H8
100	DF3029F25V	FQFP	100	H8
101	DF3029F25WHV	FQFP	100	H8
102	DF3029F25WV	FQFP	100	H8
103	DF3029X25V	TFQFP	100	H8
104	DF3048BF25V	FQFP	100	H8
105	DF3048BVF25V	FQFP	100	H8
106	DF3048BVX25V	TFQFP	100	H8
107	DF3048BVX25WV	TFQFP	100	H8
108	DF3048BX25V	TFQFP	100	H8
109	DF3052BF25V	FQFP	100	H8
110	DF3052BX25V	TFQFP	100	H8
111	DF3062BF25V	FQFP	100	H8
112	DF3062BFBL25V	FQFP	100	H8
113	DF3062BFI25QV	FQFP	100	H8
114	DF3062BFP25QV	QFP	100	H8
115	DF3062BX25V	TFQFP	100	H8
116	DF3064BF25V	FQFP	100	H8
117	DF3068FI25V	FQFP	100	H8
118	DF3068FP25V	QFP	100	H8
119	DF3068X25V	TFQFP	100	H8
120	DF3069RF25V	FQFP	100	H8
121	DF3069RF25WV	FQFP	100	H8
122	DF3069RX25V	TFQFP	100	H8
123	DF3069RX25WV	TFQFP	100	H8
124	DF36012FPV	LFQFP	64	H8
125	DF36012FXV	LQFP	48	H8
126	DF36012FXWV	LQFP	48	H8
127	DF36012FYV	LFQFP	48	H8
128	DF36012FYWV	LFQFP	48	H8
129	DF36012GFXV	LQFP	48	H8
130	DF36012GFYWV	LFQFP	48	H8
131	DF36014FPV	LFQFP	64	H8
132	DF36014FPWV	LFQFP	64	H8
133	DF36014FXV	LQFP	48	H8
134	DF36014FXWV	LQFP	48	H8
135	DF36014FYV	LFQFP	48	H8
136	DF36014FYWV	LFQFP	48	H8
137	DF36014GFPV	LFQFP	64	H8
138	DF36014GFXV	LQFP	48	H8
139	DF36014GFYV	LFQFP	48	H8
140	DF36024FPV	LFQFP	64	H8
141	DF36024FXV	LQFP	48	H8
142	DF36024FYV	LFQFP	48	H8
143	DF36024GFPV	LFQFP	64	H8
144	DF36024GFYV	LFQFP	48	H8
145	DF36049GHV	QFP	80	H8

No.	Part Number	Package Type	Number of Pins	Family
146	DF36049GHWV	QFP	80	H8
147	DF38076RH10V	QFP	80	H8
148	DF38076RH10WV	QFP	80	H8
149	DF38076RH4V	QFP	80	H8
150	DF38076RW4V	TFQFP	80	H8
151	DF38102FPV	LFQFP	64	H8
152	DF38102FPWV	LFQFP	64	H8
153	DF38102HV	QFP	64	H8
154	DF38104FPV	LFQFP	64	H8
155	DF38104FPWV	LFQFP	64	H8
156	DF38104HV	QFP	64	H8
157	DF38104HWV	QFP	64	H8
158	DF38776W10V	TFQFP	80	H8
159	DF38776W4V	TFQFP	80	H8
160	DF38976HV	QFP	80	H8
161	DF39014GFXV	LQFP	48	H8
162	DF39049GPDXHV	QFP	80	H8
163	DF61654N50FTV	TFQFP	120	H8SX
164	DF61657BN35FTV	TFQFP	120	H8SX
165	DF61657CN35FTV	TFQFP	120	H8SX
166	DF61657CW35FTV	TFQFP	120	H8SX
167	DF70834AD80FTV	TFQFP	100	SH1/SH2
168	DF70834AN80FTV	TFQFP	100	SH1/SH2
169	DF70835AD80FTV	TFQFP	100	SH1/SH2
170	DF70835AD80FTV#ZB	TFQFP	100	SH1/SH2
171	DF70835AN80FTV	TFQFP	100	SH1/SH2
172	DF71240AN50FPV	LQFP	48	SH1/SH2
173	DF71241AN50FPV	LQFP	48	SH1/SH2
174	DF71242D50FPV#Z1	LQFP	48	SH1/SH2
175	DF71242N50FPV#Z1	LQFP	48	SH1/SH2
176	DF71243D50FPV#Z1	LQFP	48	SH1/SH2
177	DF71243D50FPV#ZB	LQFP	48	SH1/SH2
178	DF71243N50FPV#Z1	LQFP	48	SH1/SH2
179	DM70834AxxxFTV	TFQFP	100	SH1/SH2
180	R5F0E001NFP#U0	LQFP	48	SH1/SH2
181	HD6433687xxxHV	QFP	64	H8
182	HD64F3664FPIV	LFQFP	64	H8
183	HD64F3664FPV	LFQFP	64	H8
184	HD64F3664FXIV	LQFP	48	H8
185	HD64F3664FXV	LQFP	48	H8
186	HD64F3664FYIV	LFQFP	48	H8
187	HD64F3664FYV	LFQFP	48	H8
188	HD64F3664HV	QFP	64	H8
189	HD64F3670FPV	LFQFP	64	H8
190	HD64F3670FXV	LQFP	48	H8
191	HD64F3670FYV	LFQFP	48	H8
192	HD64F3672FPIV	LFQFP	64	H8
193	HD64F3672FPV	LFQFP	64	H8
194	HD64F3672FXIV	LQFP	48	H8
195	HD64F3672FXV	LQFP	48	H8
196	HD64F3672FYV	LFQFP	48	H8
197	HD64F3684DV	QFP	64	H8
198	HD64F3684FPV	LFQFP	64	H8
199	HD64F3684GFPIV	LFQFP	64	H8
200	HD64F3684GHV	QFP	64	H8
201	HD64F3687FPIV	LFQFP	64	H8
202	HD64F3687FPV	LFQFP	64	H8

No.	Part Number	Package Type	Number of Pins	Family
203	HD64F3687GDV	QFP	64	H8
204	HD64F3687GFPIV	LFQFP	64	H8
205	HD64F3687GFPV	LFQFP	64	H8
206	HD64F3687GHV	QFP	64	H8
207	HD64F3687HV	QFP	64	H8

TO CUSTOMERS

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

SEPTEMBER/12/2023

IOT MARKETING OPERATION DEPARTMENT
IOT PLATFORM DIVISION
EMBEDDED PROCESSING, DIGITAL POWER AND SIGNAL CHAIN SOLUTIONS GROUP
RENESAS ELECTRONICS CORPORATION

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(Rev. 5.0-1 October 2020)

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- Overview

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2. Changed Materials
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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 13 million other MCU products.

The following pages provide an overview of the changes.

Yours sincerely,

1. Overview of Changed Materials

Item		Before Change	After Change	Note
Assembly factory		Outsourced semiconductor assembly & test sites		–
Final test factory				
Material	Lead frame	–	–	–
	Die bond	Die-bond material A manufactured by company A	Die-bond material B manufactured by company B	Refer to P. 6
	Mold resin	–	–	–
Package	Outline drawing	–	–	–
Marking	Font	–	–	–

∗ There will be no impact on product's reliability and specification.

2. Changed Materials

Item	Before Change	After Change
Die-bond material	–	The equivalent die-bond material is used.

＊ There will be no impact on product’s reliability and specification.

3. Manufacturing Flow

The manufacturing flow is shown below. The manufacturing machines and methods are the same before and after the change of the materials. The machine and method used in each manufacturing process also remain unchanged.

Verification Item	Before Change	After Change	
Manufacturing machine and method	Dicing process	Dicing process	The machine and method are not changed.
	Die mounting process	Die mounting process	The machine and method are not changed.
	Wire bonding process	Wire bonding process	The machine and method are not changed.
	Molding process	Molding process	The machine and method are not changed.
	Lead forming/marking process	Lead forming/marking process	There are no changes in equipment or manufacturing methods.
	Inspection	Inspection	Inspection is not changed.
	Packing	Packing	Packing is not changed.
	Warehousing and shipping	Warehousing and shipping	Warehousing and shipping are not changed.

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

Verification Item	Verification Result	Judgement
Machine	The die mounting process for die-bond material A and that for die-bond material B use the same manufacturing machine.	✓
Method	The die mounting process for die-bond material A and that for die-bond material B use the same manufacturing machine.	✓
Man	The workers certification system was introduced and only trained and certified workers are engaged in the work.	✓
Material	Certified die-bond materials are used. We have confirmed that both die-bond materials A and B are already proven in mass production and there is no problem in using them.	✓

5. Reliability Test Results

Test Items	Test Conditions	Results Failure / Number of Samples Inspected
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

- MSL3 preconditioning: THB & TC
- It is tested to confirm that all the samples are satisfied with an individual product specification.

Note: The qualification tests were basically performed using a representative product with the same wafer process and the same package structure.

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