

## Product Change Notice (PCN)

**Subject:** Add Alternate Assembly Locations on VFQFPN and FCLGA Packages

**Publication Date:** 7/22/2022

**Effective Date:** 10/21/2022

### Revision Description:

Initial Release

### Description of Change:

Renesas is adding alternate assembly locations for select VFQFPN and FCLGA packages. Refer to below table for the current and the alternate assembly locations and its material sets by package type.

There will be changes in the material sets at the alternate assembly locations.

No change in the moisture sensitive level as a result of this change.

| <b><u>VFQFPN-12 (P9148)</u></b> | Current     | Alternate   |
|---------------------------------|-------------|-------------|
| Assembly location               | UTL         | ASECL       |
| Die attach material             | 8600        | EN4900G     |
| Wire material                   | Copper wire | Copper wire |
| Mold compound                   | GE-300LC2MA | G700LA      |

| <b><u>VFQFPN-16 (F2932)</u></b> | Current     | Alternate    |
|---------------------------------|-------------|--------------|
| Assembly location               | ASECL       | GEI          |
| Die attach material             | EN4900G     | CRM-1076DJ-G |
| Wire material                   | Copper wire | Copper wire  |
| Mold compound                   | G700LA      | G700H        |

| <b><u>VFQFPN-24 (F1423)</u></b> | Current     | Alternate   |
|---------------------------------|-------------|-------------|
| Assembly location               | ASECL       | GEI         |
| Die attach material             | EN4900G     | EN4900GC    |
| Wire material                   | Copper wire | Copper wire |
| Mold compound                   | G700LA      | G700H       |

| <b><u>VFQFPN-40</u></b> | Current     | Alternate   |
|-------------------------|-------------|-------------|
| Assembly location       | ASECL       | UTL         |
| Die attach material     | EN4900G     | 8600        |
| Wire material           | Copper wire | Copper wire |
| Mold compound           | G700LA      | G770HCD     |

| <b><u>FCLGA-48 (F0442 &amp; F0443)</u></b> | Current  | Alternate  |
|--------------------------------------------|----------|------------|
| Assembly location                          | GEI      | ASECL      |
| Bump Composition                           | Sn/1.8Ag | Sn/1.8Ag   |
| Mold compound                              | EME-A382 | EME-G311AC |

**Affected Product List:** Refer Appendix B.

**Reason for Change:**

The change is for increased manufacturing capability and business continuity.

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

The change will have no impact on the form, fit, function, quality, reliability and environmental compliance of the products.

**Product Identification:**

Assembly lot# with prefix "U" denote UTL, prefix "GR" denote GEI, prefix "RC" denote ASECL.

**Qualification Status:** Completed. Refer Appendix A.

**Sample Availability Date:** 6 weeks from sample request date

**Device Material Declaration:** Available on request

**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.

|                                                                                                                                     |
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| For additional information regarding this notice, please contact <a href="mailto:idt-pcn@lm.renesas.com">idt-pcn@lm.renesas.com</a> |
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## Appendix A - Qualification Results

**Affected Package:** VFQFPN-12

**Qual Vehicle:** VFQFPN-12

**Assembly Material:** As shown in page 1

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

| Test Descriptions                                     | Test Method                  | Test Results (Rej/SS) |       |       |
|-------------------------------------------------------|------------------------------|-----------------------|-------|-------|
|                                                       |                              | Lot 1                 | Lot 2 | Lot 3 |
| * Temperature Cycling<br>(-55°C to 125°C, 700 cycles) | JESD22-A104                  | 0/25                  | 0/25  | 0/25  |
| * HAST - biased<br>(130°C/85% RH, 96 Hrs)             | JESD22-A110                  | 0/25                  | 0/25  | 0/25  |
| High Temperature Storage Bake<br>(150°C, 1000 Hrs)    | JESD22-A103                  | 0/25                  | 0/25  | 0/25  |
| Ball Shear Test                                       | JESD22-B116                  | 0/5                   | 0/5   | 0/5   |
| Bond Pull Test                                        | MIL-STD-883<br>(Method 2011) | 0/5                   | 0/5   | 0/5   |
| Physical Dimensions                                   | JESD22-B100                  | 0/30                  | 0/30  | 0/30  |
| Moisture Sensitivity Level, MSL                       | J-STD-20 /<br>MSL 1, 260°C   | 0/25                  | 0/25  | -     |
| Solderability Test                                    | MIL-STD-883<br>(Method 2003) | 0/5                   | 0/5   | 0/5   |

\*Tests were subjected to Preconditioning per JESD22-A113 prior to stress test

**Affected Package:** VFQFPN-16

**Qual Vehicle:** VFQFPN-16

**Assembly Material:** As shown in page 1

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

| Test Descriptions                                     | Test Method                  | Test Results (Rej/SS) |       |       |
|-------------------------------------------------------|------------------------------|-----------------------|-------|-------|
|                                                       |                              | Lot 1                 | Lot 2 | Lot 3 |
| * Temperature Cycling<br>(-55°C to 125°C, 700 cycles) | JESD22-A104                  | 0/25                  | 0/25  | 0/25  |
| * HAST - biased<br>(130°C/85% RH, 96 Hrs)             | JESD22-A110                  | 0/25                  | 0/25  | 0/25  |
| High Temperature Storage Bake<br>(150°C, 1000 Hrs)    | JESD22-A103                  | 0/25                  | 0/25  | 0/25  |
| Ball Shear Test                                       | JESD22-B116                  | 0/5                   | 0/5   | 0/5   |
| Bond Pull Test                                        | MIL-STD-883<br>(Method 2011) | 0/5                   | 0/5   | 0/5   |
| Physical Dimensions                                   | JESD22-B100                  | 0/30                  | 0/30  | 0/30  |
| Moisture Sensitivity Level, MSL                       | J-STD-20 /<br>MSL 1, 260°C   | 0/25                  | 0/25  | -     |
| Solderability Test                                    | MIL-STD-883<br>(Method 2003) | 0/5                   | 0/5   | 0/5   |

\*Tests were subjected to Preconditioning per JESD22-A113 prior to stress test

**Affected Package:** VFQFPN-24

**Qual Vehicle:** VFQFPN-24

**Assembly Material:** As shown in page 1

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

| Test Descriptions                                     | Test Method                  | Test Results (Rej/SS) |       |       |
|-------------------------------------------------------|------------------------------|-----------------------|-------|-------|
|                                                       |                              | Lot 1                 | Lot 2 | Lot 3 |
| * Temperature Cycling<br>(-55°C to 125°C, 700 cycles) | JESD22-A104                  | 0/25                  | 0/25  | 0/25  |
| * HAST - biased<br>(130°C/85% RH, 96 Hrs)             | JESD22-A110                  | 0/25                  | 0/25  | 0/25  |
| High Temperature Storage Bake<br>(150°C, 1000 Hrs)    | JESD22-A103                  | 0/25                  | 0/25  | 0/25  |
| Ball Shear Test                                       | JESD22-B116                  | 0/5                   | 0/5   | 0/5   |
| Bond Pull Test                                        | MIL-STD-883<br>(Method 2011) | 0/5                   | 0/5   | 0/5   |
| Physical Dimensions                                   | JESD22-B100                  | 0/30                  | 0/30  | 0/30  |
| Moisture Sensitivity Level, MSL                       | J-STD-20 /<br>MSL 1, 260°C   | 0/25                  | 0/25  | -     |
| Solderability Test                                    | MIL-STD-883<br>(Method 2003) | 0/5                   | 0/5   | 0/5   |

*\*Tests were subjected to Preconditioning per JESD22-A113 prior to stress test*

**Affected Package:** VFQFPN-40

**Qual Vehicle:** VFQFPN-72

**Assembly Material:** As shown in page 1

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

| Test Descriptions                                     | Test Method                  | Test Results (Rej/SS) |       |       |
|-------------------------------------------------------|------------------------------|-----------------------|-------|-------|
|                                                       |                              | Lot 1                 | Lot 2 | Lot 3 |
| * Temperature Cycling<br>(-55°C to 125°C, 700 cycles) | JESD22-A104                  | 0/25                  | 0/25  | 0/25  |
| * HAST - biased<br>(130°C/85% RH, 96 Hrs)             | JESD22-A110                  | 0/25                  | 0/25  | 0/25  |
| High Temperature Storage Bake<br>(150°C, 1000 Hrs)    | JESD22-A103                  | 0/25                  | 0/25  | 0/25  |
| Ball Shear Test                                       | JESD22-B116                  | 0/5                   | 0/5   | 0/5   |
| Bond Pull Test                                        | MIL-STD-883<br>(Method 2011) | 0/5                   | 0/5   | 0/5   |
| Moisture Sensitivity Level, MSL                       | J-STD-20 /<br>MSL 3, 260°C   | 0/25                  | 0/25  | -     |

*\*Tests were subjected to Preconditioning per JESD22-A113 prior to stress test*

**Affected Package:** FCLGA-48

**Qual Vehicle:** FCLGA-48

**Assembly Material:** As shown in page 1

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

| Test Descriptions                                     | Test Method                  | Test Results (Rej/SS) |       |       |
|-------------------------------------------------------|------------------------------|-----------------------|-------|-------|
|                                                       |                              | Lot 1                 | Lot 2 | Lot 3 |
| * Temperature Cycling<br>(-55°C to 125°C, 700 cycles) | JESD22-A104                  | 0/25                  | 0/25  | 0/25  |
| * HAST - biased<br>(130°C/85% RH, 96 Hrs)             | JESD22-A110                  | 0/25                  | 0/25  | 0/25  |
| High Temperature Storage Bake<br>(150°C, 1000 Hrs)    | JESD22-A103                  | 0/25                  | 0/25  | 0/25  |
| Physical Dimensions                                   | JESD22-B100                  | 0/30                  | 0/30  | 0/30  |
| Moisture Sensitivity Level, MSL                       | J-STD-20 /<br>MSL 3, 260°C   | 0/25                  | 0/25  | -     |
| Solderability Test                                    | MIL-STD-883<br>(Method 2003) | 0/5                   | 0/5   | 0/5   |

\*Tests were subjected to Preconditioning per JESD22-A113 prior to stress test

## Appendix B – Affected Product List

|                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|
| F0442LGRI          | RC21008A057GND#KB0 | RC21008A077GND#KB0 | RC26008A052GND#KBU |
| F0442LGRI8         | RC21008A058GND#BB0 | RC21008A078GND#BB0 | RC26008A053GND#BB0 |
| F0443LGRI          | RC21008A058GND#KB0 | RC21008A078GND#KB0 | RC26008A053GND#KB0 |
| F0443LGRI8         | RC21008A059GND#BB0 | RC21008A079GND#BB0 | RC26008A055GND#BBS |
| F1423EVBI-DI       | RC21008A059GND#KB0 | RC21008A079GND#KB0 | RC26008A055GND#BBU |
| F1423EVBI-DLI      | RC21008A060GND#BB0 | RC21008A080GND#BB0 | RC26008A055GND#KB0 |
| F1423EVBI          | RC21008A060GND#KB0 | RC21008A080GND#KB0 | RC26008A055GND#KBS |
| F1423EVBI-SI       | RC21008A061GND#BB0 | RC21008A081GND#BB0 | RC26008A055GND#KBU |
| F1423EVBI-SLI      | RC21008A062GND#BB0 | RC21008A081GND#KB0 | RC26008A058GND#BBU |
| F1423NBGI          | RC21008A062GND#KB0 | RC21008A082GND#BB0 | RC26008A058GND#KBU |
| F1423NBGI8         | RC21008A063GND#BB0 | RC21008A082GND#KB0 | RC26008AXXXGND#AB0 |
| F2932NBGP          | RC21008A063GND#KB0 | RC21008A083GND#BB0 | RC26008AXXXGND#BB0 |
| F2932NBGP8         | RC21008A064GND#BB0 | RC21008A083GND#KB0 | RC26008AXXXGND#KB0 |
| P9148ANRGI         | RC21008A064GND#KB0 | RC21008A084GND#BB0 | RC31008A000GND#BB0 |
| P9148ANRGI8        | RC21008A065GND#BB0 | RC21008A084GND#KB0 | RC31008A000GND#KB0 |
| P9148NRGI          | RC21008A065GND#KB0 | RC21008A085GND#BB0 | RC31008A050GND#BB0 |
| P9148NRGI8         | RC21008A066GND#BB0 | RC21008A085GND#KB0 | RC31008A050GND#BBN |
| RC21008A000GND#BB0 | RC21008A066GND#KB0 | RC21008A087GND#BB0 | RC31008A050GND#KB0 |
| RC21008A000GND#KB0 | RC21008A067GND#BB0 | RC21008A087GND#KB0 | RC31008A050GND#KBN |
| RC21008A001GND#BB0 | RC21008A068GND#BB0 | RC21008A088GND#BB0 | RC31008A051GND#BB0 |
| RC21008A001GND#KB0 | RC21008A068GND#KB0 | RC21008A088GND#KB0 | RC31008A051GND#KB0 |
| RC21008A050GND#BB0 | RC21008A069GND#BB0 | RC21008A089GND#BB0 | RC31008A052GND#BB0 |
| RC21008A050GND#KB0 | RC21008A069GND#KB0 | RC21008A089GND#KB0 | RC31008A052GND#KB0 |
| RC21008A051GND#BB0 | RC21008A070GND#BB0 | RC21008A090GND#BB0 | RC31008A053GND#BB0 |
| RC21008A051GND#KB0 | RC21008A070GND#KB0 | RC21008A090GND#KB0 | RC31008A053GND#KB0 |
| RC21008A052GND#BB0 | RC21008A072GND#BB0 | RC21008A092GND#BB0 | RC31008A054GND#BB0 |
| RC21008A052GND#KB0 | RC21008A072GND#KB0 | RC21008A092GND#KB0 | RC31008A055GND#BB0 |
| RC21008A053GND#BB0 | RC21008A073GND#BB0 | RC21008A093GND#BB0 | RC31008A056GND#BB0 |
| RC21008A053GND#KB0 | RC21008A073GND#KB0 | RC21008A093GND#KB0 | RC31008A056GND#KB0 |
| RC21008A054GND#BB0 | RC21008A074GND#BB0 | RC21008AENGND#BB0  | RC31008A060GND#BB0 |
| RC21008A054GND#KB0 | RC21008A074GND#KB0 | RC21008AXXXGND#AB0 | RC31008A060GND#KB0 |
| RC21008A055GND#BB0 | RC21008A075GND#BB0 | RC21008AXXXGND#BB0 | RC31008A061GND#BB0 |
| RC21008A055GND#KB0 | RC21008A075GND#KB0 | RC21008AXXXGND#KB0 | RC31008A061GND#KB0 |
| RC21008A056GND#BB0 | RC21008A076GND#BB0 | RC26008A052GND#BB0 | RC31008AXXXGND#AB0 |
| RC21008A056GND#KB0 | RC21008A076GND#KB0 | RC26008A052GND#BBU | RC31008AXXXGND#BB0 |
| RC21008A057GND#BB0 | RC21008A077GND#BB0 | RC26008A052GND#KB0 | RC38008AXXXGND#AB0 |