

## Product Change Notice (PCN)

**Subject:** Assembly materials change for R8C/L3x LFQFP 100pin package products

**Publication Date:** 12/27/2022

**Effective Date:** 4/1/2023

**Revision Description:**

Initial release.

**Description of Change:**

Material change: Lead frame (Shape change)

Mold resin (Mold resin type addition. Uses two types of mold resin)

※Refer to the difference specification file

“MCP-AB-22-0133\_R8C\_L3Ax\_LFQFP100pin\_Difference specification”

**Affected Product List:**

This time, we unify and apply to the part number after the revision of the wait mode function restriction that has already been notified on technical update (TN-R8C-A057B/E) and PCN.

For detailed part number, Refer to page 2 onwards.

**Reason for Change:**

Stable supply for R8C products.

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

No impact.

**Product Identification:**

Possible to confirm the production history data from the packing label or trace code.

**Qualification Status:** We will prepare by 2/28/2023.

**Sample Availability Date:** 4/1/2023

**Device Material Declaration:** Contact Renesas sales, distributor or agency.

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.

Target part number list:

| Target Part number |
|--------------------|
| R5F2L3A7CDFP#31    |
| R5F2L3A7CN603FP#31 |
| R5F2L3A7CN604FP#31 |
| R5F2L3A7CNFP#31    |
| R5F2L3A8CDFP#31    |
| R5F2L3A8CNFP#11    |
| R5F2L3A8CNFP#31    |
| R5F2L3AACDFP#31    |
| R5F2L3AACNFP#31    |
| R5F2L3ACCDFP#31    |
| R5F2L3ACCN600FP#31 |
| R5F2L3ACCN601FP#31 |
| R5F2L3ACCN602FP#31 |
| R5F2L3ACCN607FP#31 |
| R5F2L3ACCNFP#31    |
| R5F2L3A7MDFP#31    |
| R5F2L3A7MNFP#31    |
| R5F2L3A8MDFP#31    |
| R5F2L3A8MNFP#31    |
| R5F2L3AAMDFP#31    |
| R5F2L3AAMNFP#31    |
| R5F2L3ACMDFP#31    |
| R5F2L3ACMNFP#31    |

Part number before the release of wait mode function restrictions:

| <b>Target Part number<br/>before change</b> | <b>Part number<br/>after change</b> |
|---------------------------------------------|-------------------------------------|
| R5F2L3A7CDFP#30                             | R5F2L3A7CDFP#31                     |
| R5F2L3A7CNFP#30                             | R5F2L3A7CNFP#31                     |
| R5F2L3A8CDFP#30                             | R5F2L3A8CDFP#31                     |
| R5F2L3AACDFP#30                             | R5F2L3AACDFP#31                     |
| R5F2L3AACNFP#30                             | R5F2L3AACNFP#31                     |
| R5F2L3ACCDFP#30                             | R5F2L3ACCDFP#31                     |
| R5F2L3ACCNFP#30                             | R5F2L3ACCNFP#31                     |
| R5F2L3A7MDFP#30                             | R5F2L3A7MDFP#31                     |
| R5F2L3A8MDFP#30                             | R5F2L3A8MDFP#31                     |
| R5F2L3A8MNFP#30                             | R5F2L3A8MNFP#31                     |
| R5F2L3AAMNFP#30                             | R5F2L3AAMNFP#31                     |

# Difference of specification (R8C/L3Ax LFQFP 100pin)

(Mold resin, Lead frame)

**Assembly factory: RSB    Sorting factory: RSB**

December. 26. 2022

MCU PRODUCT MARKETING DEPARTMENT  
MCU DEVICE SOLUTION BUSINESS DIVISION  
IoT AND INFRASTRUCTURE BUSINESS UNIT  
RENESAS ELECTRONICS CO., LTD.

MCP-AB-22-0133

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(Rev. 5.0-1 October 2020)

# Difference outline

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- Target products

- R8C/L3Ax LFQFP 100pin products that change the lead frame and mold resin.

- Change items

- Material change: Lead frame (Shape change)

- Mold resin (Mold resin type addition. Uses two types of mold resin)

- Reason for change

- Stabilization of supply.

- Impact on Fit, Form, Function,  
No impact. Outline does not change.
  - Quality & Reliability:  
No impact

# Material change items

| Item       |          | Before change                     | After change                           |
|------------|----------|-----------------------------------|----------------------------------------|
| Lead frame | Shape    | Shape is different.               |                                        |
|            | Material | No change                         |                                        |
| Mold resin | Material | Epoxy resin A *<br>(halogen-free) | Epoxy resin A or B *<br>(halogen-free) |

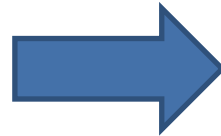
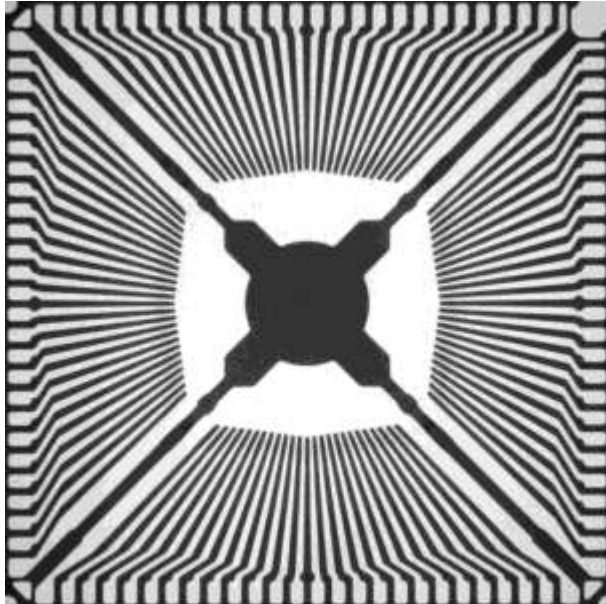
\* Although there are material changes, the combination after the change has a track record of mass production, and there is no change in reliability and characteristics.

# Lead frame shape

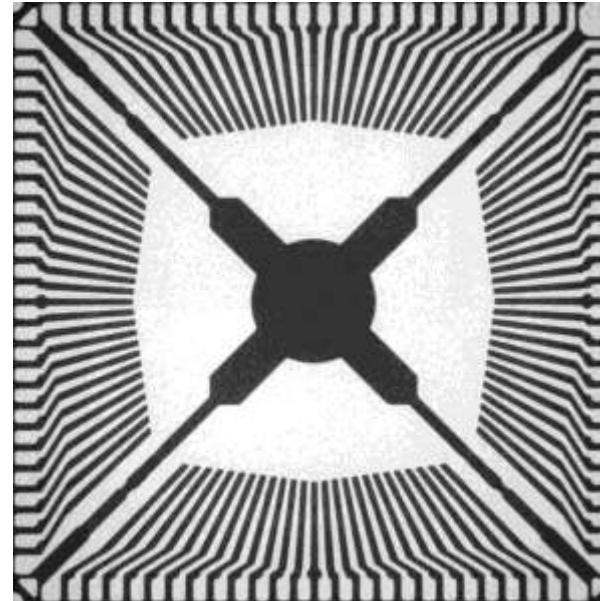
14×14mm 0.5mm pitch 100pin LFQFP lead frame

Consolidate into certified and proven lead frames.

Before change: “**Frame A**”



After change “**Frame C**”



RX, RL78 family  
(Notified for M16C family)

# Marking visibility

※Character is reference example

|                       | Surface                                                                             | Back side                                                                            |
|-----------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Additional mold resin |   |   |
| Current mold resin    |  |  |

# Manufacturing equipment and manufacturing process: No change

| Verification item                   | Before change                    | After change                                                                                    |
|-------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------|
| Manufacturing equipment and process | Dicing process                   | Dicing process<br>There are no changes in equipment or manufacturing methods.                   |
|                                     | Die bonding process              | Die bonding process<br>There are no changes in equipment or manufacturing methods.              |
|                                     | Wire bonding process             | Wire bonding process<br>There are no changes in equipment or manufacturing methods.             |
|                                     | Molding process                  | Molding process<br>There are no changes in equipment or manufacturing methods.                  |
|                                     | Marking / lead treatment process | Marking / lead treatment process<br>There are no changes in equipment or manufacturing methods. |
|                                     | Inspection                       | Inspection<br>There is no change in inspection.                                                 |
|                                     | Packing                          | Packing<br>There is no change in packing.                                                       |
|                                     | Warehousing / Shipment           | Warehousing / Shipment<br>There are no changes in warehousing or shipments.                     |

# 4M change points (Lead frame shape change)

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| Item            | Check Result                                                                                                                                                | Judgement      |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Machine</b>  | There is no change in the equipment.                                                                                                                        | <b>No risk</b> |
| <b>Method</b>   | There is no change in the manufacturing method.                                                                                                             | <b>No risk</b> |
| <b>Man</b>      | Adopt operator certification system. Only certificated operator can work for the production.                                                                | <b>No risk</b> |
| <b>Material</b> | Only use certificated materials.<br>The lead frame to be changed has a mass production record. It has been confirmed that there is no problem with quality. | <b>No risk</b> |

## 4M change points (Mold resin change)

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| Item            | Check Result                                                                                                                                                | Judgement      |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Machine</b>  | There is no change in the molding equipment.                                                                                                                | <b>No risk</b> |
| <b>Method</b>   | There is no change in the mold manufacturing method.                                                                                                        | <b>No risk</b> |
| <b>Man</b>      | Adopt operator certification system. Only certificated operator can work for the production.                                                                | <b>No risk</b> |
| <b>Material</b> | Only use certificated materials.<br>The mold resin to be changed has a mass production record. It has been confirmed that there is no problem with quality. | <b>No risk</b> |

# Concrete approach at change

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| Items                          | Failure mode          | factor                    | At process establishment                                                              | Judgement |
|--------------------------------|-----------------------|---------------------------|---------------------------------------------------------------------------------------|-----------|
| The shape of lead frame change | Assembly failure      | Die misaligned            | Mass productivity was evaluated using similar products with the same PKG outline.     | No risk   |
|                                | Impact on reliability | Delamination after reflow | Reliability evaluation with similar products with the same PKG outline is no problem. | No risk   |
| Mold resin change              | Impact on reliability | Delamination after reflow | Reliability evaluation with similar products with the same PKG outline is no problem. | No risk   |

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