

## Product Change Notice (PCN)

**Subject:** Factory addition and assembly materials change for RL78 family LQFP package products.

**Publication Date:** 1/21/2022

**Effective Date:** 4/1/2022

**Revision Description:**

Initial release.

**Description of Change:**

PKG type		Products group			
		G13	G14	L12	L13
LQFP	12x12mm 64pin	√	√	√	√

Wafer process factory: Renesas Semiconductor Manufacturing Saijo addition

Assembly/sorting factory: Renesas Semiconductor (Beijing) Co.,Ltd (RSB) addition

“Refer to the difference specification for details.”

MCP-AB-22-0008\_RL78\_LQFP\_Difference specification\_1212 64pin RSB

MCP-AB-22-0009\_RL78\_LQFP\_Difference specification\_1212 64pin\_RSKL

**Change point**

Before change			After change		
WP&WT	ASSY	FT	WP&WT	ASSY	FT
Kawashiri	RSKL	RSKL	Kawashiri	RSKL <b>RSB*</b>	RSKL <b>RSB*</b>
-	-	-	<b>Saijo</b>	<b>RSKL**</b> <b>RSB*</b>	<b>RSKL**</b> <b>RSB*</b>

Note: Description for change point.

“Bold: Factory addition”

\*: Some products add **RSB** and some do not.

\*\* : Some products add **RSKL** and some do not.

**Affected Product List:**

Refer to attached file “PN\_list\_RL78\_LQFP\_1212 64pin”.

**Reason for Change:**

Stable supply for RL78 series LQFP products.

**Impact on specifications, characteristics, 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 2/28/2022. [Qualification Status]

**Sample Availability Date:** 4/1/2022

**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.**





Booking PN	Package	Group	Addition for RSKL (Existing)			Addition for RSB (Additional WP)		Applicable difference document	
			Saijo wafer	Kawashiri wafer	Saijo wafer	RSKL addition	RSB addition		
R5F10WLCAFA#10	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLCAFA#30	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLCAFA#50	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLDFAFA#10	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLDFAFA#30	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLDFAFA#50	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLEAFA#10	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLEAFA#30	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLEAFA#50	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLFAFA#10	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLFAFA#30	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLFAFA#50	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLGFAFA#10	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLGFAFA#30	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		
R5F10WLGFAFA#50	12mm x 12mm 64pin	RL78/L13	Y	Y	Y	Difference specification_1212 64pin RSKL	Difference specification_1212 64pin RSB		

# Difference of specification (RL78 family LQFP products) 12x12mm 0.65mm pitch 64pin

Assembly factory: RSKL

January 11, 2022

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

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MCP-AB-22-0009



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(Rev. 5.0-1 October 2020)



# Difference outline

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- Target
  - Package outline: 12mm x 12mm 0.65mm pitch 64pin LQFP
  - Assembly/sorting factory: Renesas Semiconductor KL Sdn. Bhd. (RSKL)
  
- Wafer process factory addition: Renesas Semiconductor Manufacturing Saijo
  - Specification and characteristics of product:  
No change
  - Quality and reliability  
No change

# Difference of specification

Item		This time	Current
Wafer factory		Kawashiri / Saijo	Kawashiri
Assembly factory		RSKL	
Sorting factory		RSKL	
Package	Outline	No difference	
Lead frame	Material	No difference	
	Inner lead design	No difference	
Die mount	Material	No difference	
Bonding wire	Material	No difference: Cu (Pd coating)	
Mold resin	Material	No difference	
Plating	Material	No difference	
Marking	Font	No difference	
	Digit number	No difference	
Packing	Tray / T&R	No difference	
Storage conditions	after opening	No difference	

# 4M changing points (Wafer process addition)

Process transfer will be performed without change of the basic chip design (chip size, chip patterns).

Item	Check Result	Judgement
<b>Machine</b>	The machines are equivalent to current machines.	<b>No risk</b>
<b>Method</b>	The same as current products.	<b>No risk</b>
<b>Man</b>	Using operator certification system. Only certificated operator can work for the production.	<b>No risk</b>
<b>Material</b>	The same material is used.	<b>No risk</b>

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# DIFFERENCE OF SPECIFICATION (RL78 FAMILY LQFP PRODUCTS) 12x12mm 0.65 mm pitch 64pin

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

January 11. 2022

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

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MCP-AB-22-0008

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(Rev. 5.0-1 October 2020)

# DIFFERENCE OUTLINE

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- Target package

12x12mm 0.65mm pitch 64pin LQFP

- Difference points

- 1) Assembly factory

Existing factory: Renesas Semiconductor KL Sdn. Bhd. (RSKL)

Additional factory: Renesas Semiconductor (Beijing) Co.,Ltd (RSB)

- 2) Sorting factory

Existing factory: Renesas Semiconductor KL Sdn. Bhd. (RSKL)

Additional factory: Renesas Semiconductor (Beijing) Co.,Ltd (RSB)

- 3) Assembly material:

Lead frame, Die mount paste and Mold resin are used certificated materials.



# DIFFERENCE OUTLINE

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## 4) Package outline

There is no change in footprint for additional factory products.

Please refer to the package outline drawing and dimension comparison for the external dimensions.

## 5) Marking

Change the marking font.

- Specification and characteristics of product:  
No change
- Quality and reliability:  
No change

# DETAIL OF FACTORY CHANGE

PKG	Size [mm]	Pin count	Pitch [mm]	PKG thickness [mm]	Factories (This time)	Factory (Existing)
LQFP	12x12	64	0.65	1.4	RSKL RSB	RSKL

Renesas Semiconductor (Beijing) Co.,Ltd (RSB)  
Renesas Semiconductor KL Sdn. Bhd. (RSKL)

# Difference of specification

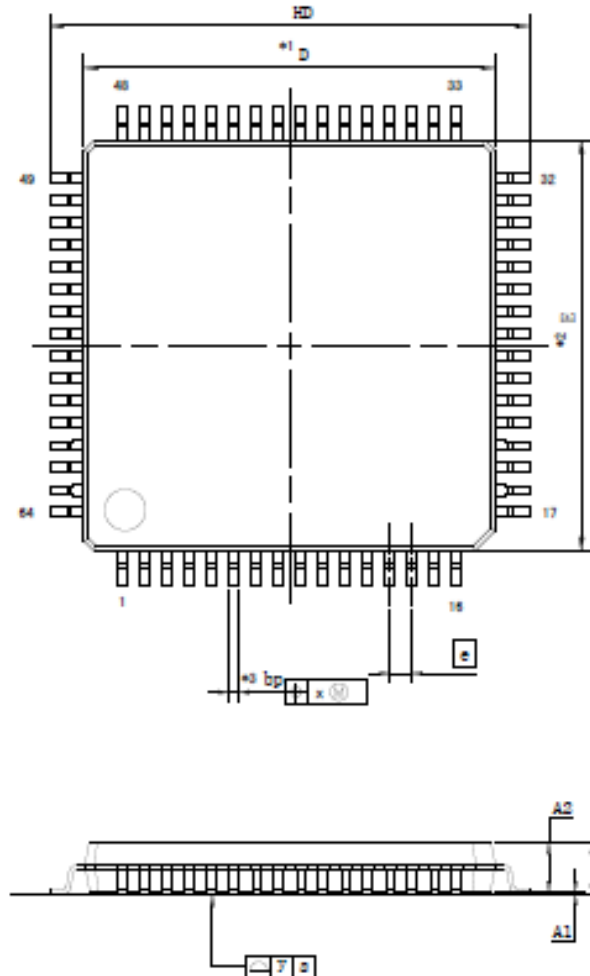
Item		This time	Existing factory
Assembly factory		RSB	RSKL
Sorting factory		RSB	RSKL
Package	Outline	There are differences (Refer to pages 7 to 9)	
Lead frame	Material	No difference	
	Inner pattern	There are differences (Refer to pages 10)	
Die mount	Material	Ag epoxy paste A *	Ag epoxy paste B *
Bonding wire	Material	No difference; Cu (Pd coating)	
Resin	Material	Epoxy resin A * (halogen-free)	Epoxy resin B * (halogen-free)
Plating	Material	No difference	
Marking	Font	There are differences (Refer to pages 11)	
	Digit number	No difference	
Packing	Tray/ Emboss tape	No difference	
Storage conditions	after opening	No difference	

\* Factory certified materials.

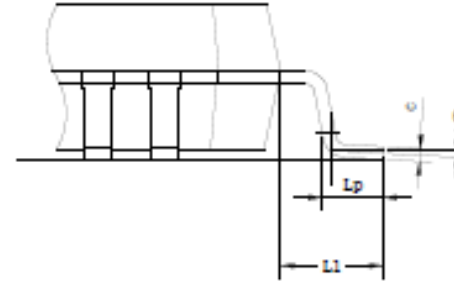
There are differences in materials, but there is no change in reliability or characteristics.

# 12mm × 12mm 0.65mm pitch 64pin LQFP Package outline (RSB)

RENESAS Code : PLQP0064JB-A



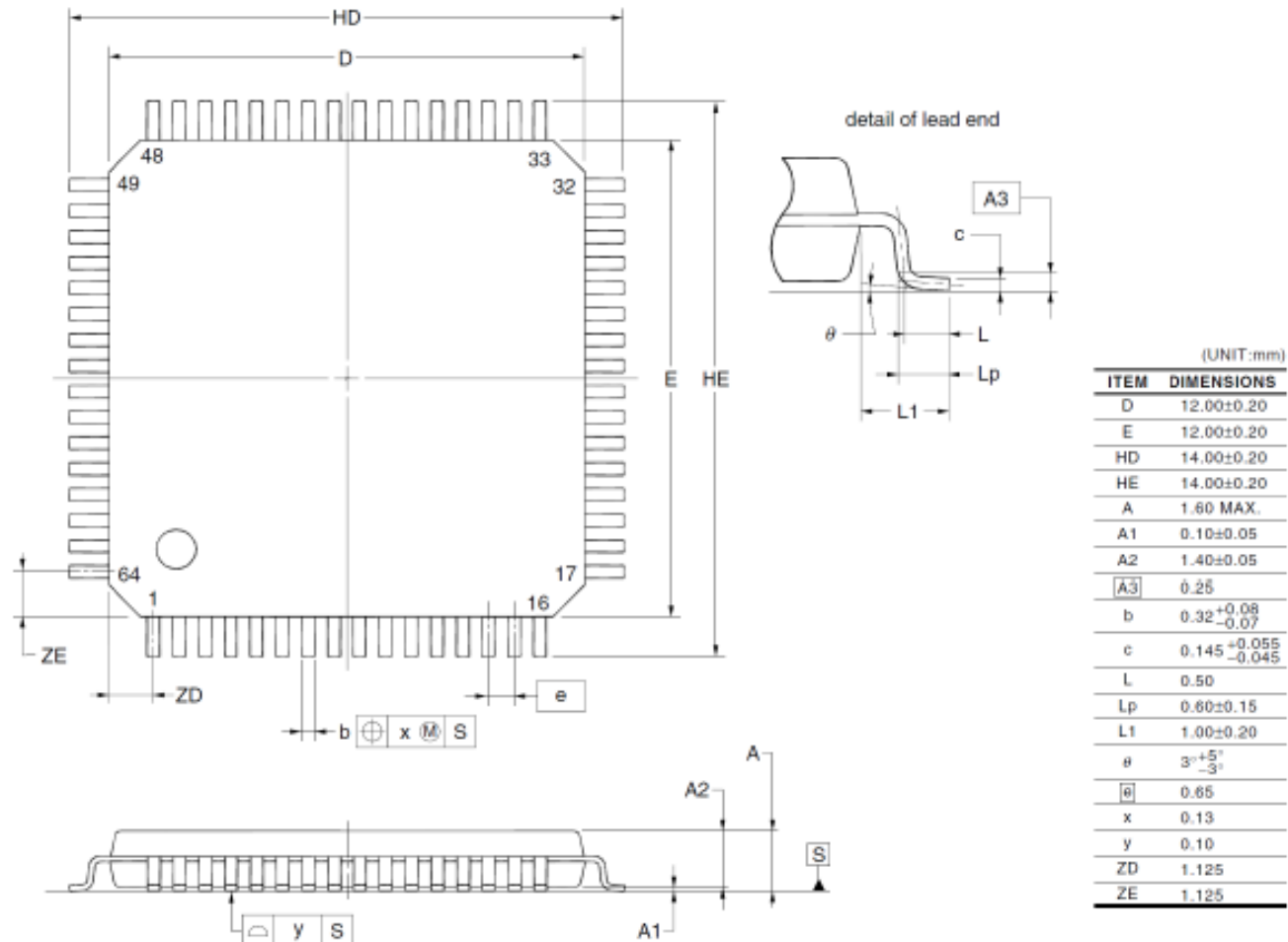
detail of lead end



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
E	11.90	12.00	12.10
D	11.90	12.00	12.10
A <sub>2</sub>	—	1.40	—
H <sub>D</sub>	13.80	14.00	14.20
H <sub>E</sub>	13.80	14.00	14.20
A	—	—	1.70
A <sub>1</sub>	0.05	—	0.15
L <sub>p</sub>	0.45	0.60	0.75
L <sub>1</sub>	—	1.00	—
b <sub>p</sub>	0.27	0.32	0.37
c	0.09	—	0.20
e	—	0.65	—
θ	0.00	3.50	8.00
x	—	—	0.08
y	—	—	0.08

# 12mm x 12mm 0.65mm pitch 64pin LQFP Package outline (RSKL)

RENESAS Code : PLQP0064JA-A

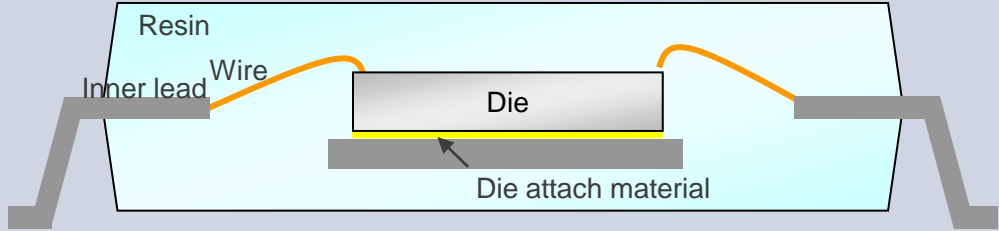

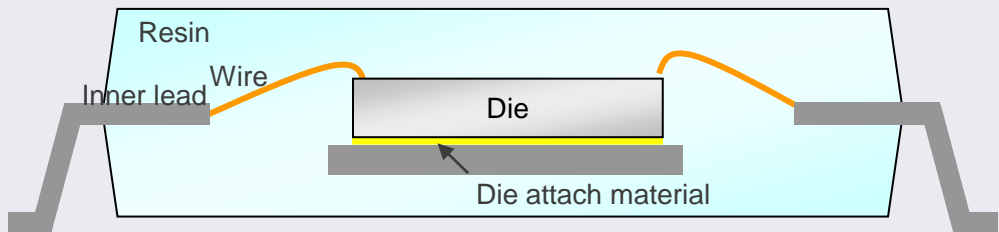
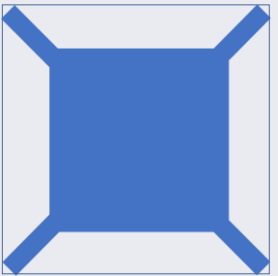


# Dimension comparison: 12mm×12mm 0.65mm pitch 64pin LQFP

RSB Symbol	12x12mm 64pin LQFP PLQP0064JB-A			RSKL Symbol	12x12mm 64pin LQFP PLQP0064JA-A		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
E	11.90	12.00	12.10	E	11.80	12.00	12.20
D	11.90	12.00	12.10	D	11.80	12.00	12.20
HE	13.80	14.00	14.20	HE	13.80	14.00	14.20
HD	13.80	14.00	14.20	HD	13.80	14.00	14.20
A	-	-	1.70	A	-	-	1.60
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	-	1.40	-	A2	1.35	1.40	1.45
Lp	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	0.80	1.00	1.20
bp	0.27	0.32	0.37	bp	0.27	0.32	0.37
c	0.09	-	0.20	c	0.09	-	0.20
e	-	0.65	-	e	-	0.65	-
θ	0°	3.5°	8°	θ	0°	3.5°	8°
y	-	-	0.08	y	-	-	0.08
x	-	-	0.08	x	-	-	0.08

# Package structure image

\* Package Section and die pad shape is a reference example.

Assembly Line	PKG cross section	Die pad shape
Additional factory	 <p>Resin Inner lead Wire Die Die attach material</p>	 <p>RSB</p>
Existing factory	 <p>Resin Inner lead Wire Die Die attach material</p>	 <p>RSKL</p>

※ There is no impact on the reliability by die pad shape



# Marking visibility

※Character is reference example

Assembly Line	RSB (Additional factory)	RSKL (Existing factory)
Overall photo	 <p>A photograph of a dark green square chip with four circular mounting holes. The chip is marked with the text "R5F100LJA" on the top line and "149GZ00" on the bottom line in a yellowish-gold color.</p>	 <p>A photograph of a dark green square chip with four circular mounting holes. The chip is marked with the text "R5F10RLCA" on the top line, "2141IME51" on the second line, and "MALAYSIA" on the third line in a light grey color.</p>
Enlarged photo	 <p>An enlarged view of the RSB chip marking, showing the characters "R5F" in a yellowish-gold color. The characters are slightly blurred and have a soft, diffused appearance.</p>	 <p>An enlarged view of the RSKL chip marking, showing the characters "R5F" in a light grey color. The characters are very faint and difficult to distinguish from the background.</p>

# 4M changing points

## (Addition of assembly and sorting factory , Change of material)

Item	Check Result	Judgement
<b>Machine</b>	<p>Changing at assembly and sorting. The machines are equivalent to present machines.</p> <p>There are production of similar products and we have already checked the additional products have no risk on the production.</p>	<b>No risk</b>
<b>Method</b>	The same as current products.	<b>No risk</b>
<b>Man</b>	Using operator certification system. Only certificated operator can work for the production.	<b>No risk</b>
<b>Material</b>	<p>Only use certificated materials.</p> <p>The products has been certificated by reliability test same as existing products and have no risk.</p>	<b>No risk</b>

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