RENESAS

PCN# : [MCP-AC-21-0018]

Product Change Notice (PCN)

Subject: **Assembly & sorting factory addition, assembly materials addition & change and wafer process factory addition for RL78 family LQFP package products**

Publication Date: 12/27/2021

Effective Date: 3/1/2022

Revision Description:

Initial release.

Description of Change:

PKG type		Products group		
		G13	G14	L12
LQFP	10x10mm 52pin	√	√	√

Kawashiri wafer: Renesas Semiconductor KL Sdn. Bhd. (RSKL) addition
Saijo wafer: Renesas Semiconductor KL Sdn. Bhd. (RSKL) addition
“Refer to the difference specification for details.”
MCP-AB-21-0089_RL78_LQFP_Difference specification_RSKL_52pin

Description of change point case

Before change			After change		
WP&WT	ASSY	FT	WP&WT	ASSY	FT
Kawashiri	RSB	RSB	Kawashiri	RSB **RSKL**	RSB **RSKL**
			Saijo	**RSKL**	**RSKL**

Note: Description for change point.
“Bold: Factory addition”

Affected Product List:

Refer to attached file “PN_list_RL78_LQFP_52pin”.

Reason for Change:

Stable supply for RL78 series LQFP products.

Impact on specifications and characteristics:

No change.

Impact on quality & reliability

No change.

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: 3/1/2022

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		Applicable difference document	Reliability report	
			Kawashiri wafer	Saijo wafer			
R5F100JCAFA#10	10mm x 10mm 52pin	RL78/G13	Y	Y	Difference_specification_RSKL_52pin	MCR-22-0107	MCR-22-0108
R5F100JCAFA#30	10mm x 10mm 52pin	RL78/G13	Y	Y	Difference_specification_RSKL_52pin	MCR-22-0107	MCR-22-0108
R5F100JCAFA#50	10mm x 10mm 52pin	RL78/G13	Y	Y	Difference_specification_RSKL_52pin	MCR-22-0107	MCR-22-0108
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R5F100JCGFA#30	10mm x 10mm 52pin	RL78/G13	Y		Difference_specification_RSKL_52pin	MCR-22-0107	
R5F100JCGFA#50	10mm x 10mm 52pin	RL78/G13	Y		Difference_specification_RSKL_52pin	MCR-22-0107	
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R5F100JDGFA#50	10mm x 10mm 52pin	RL78/G13	Y		Difference_specification_RSKL_52pin	MCR-22-0107	
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R5F104JJGFA#50	10mm x 10mm 52pin	RL78/G14	Y		Difference_specification_RSKL_52pin	MCR-22-0107	
R5F10RJ8AFA#10	10mm x 10mm 52pin	RL78/L12	Y	Y	Difference_specification_RSKL_52pin	MCR-22-0107	MCR-22-0108
R5F10RJ8AFA#30	10mm x 10mm 52pin	RL78/L12	Y	Y	Difference_specification_RSKL_52pin	MCR-22-0107	MCR-22-0108
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DIFFERENCE OF SPECIFICATION (RL78 FAMILY LQFP PRODUCTS) 10x10mm 0.65 mm pitch 52pin

Assembly factory: RSKL Sorting factory: RSKL

December 23. 2021

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

Ver.1.0

MCP-AB-21-0090

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(Rev. 5.0-1 October 2020)

DIFFERENCE OUTLINE

■ Target package

10x10mm 0.65mm pitch 52pin LQFP

■ Difference points

1) Assembly factory

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

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

2) Sorting factory

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

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

3) Wafer process factory

Existing factory: Renesas Semiconductor Manufacturing Kawashiri

Additional factory: Renesas Semiconductor Manufacturing Saijo

※At the same time as the addition of RSKL, the Saijo factory will be added to the wafer process factory.

DIFFERENCE OUTLINE

4) Assembly material:

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

5) 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.

6) Marking

Change the marking font and specification.

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

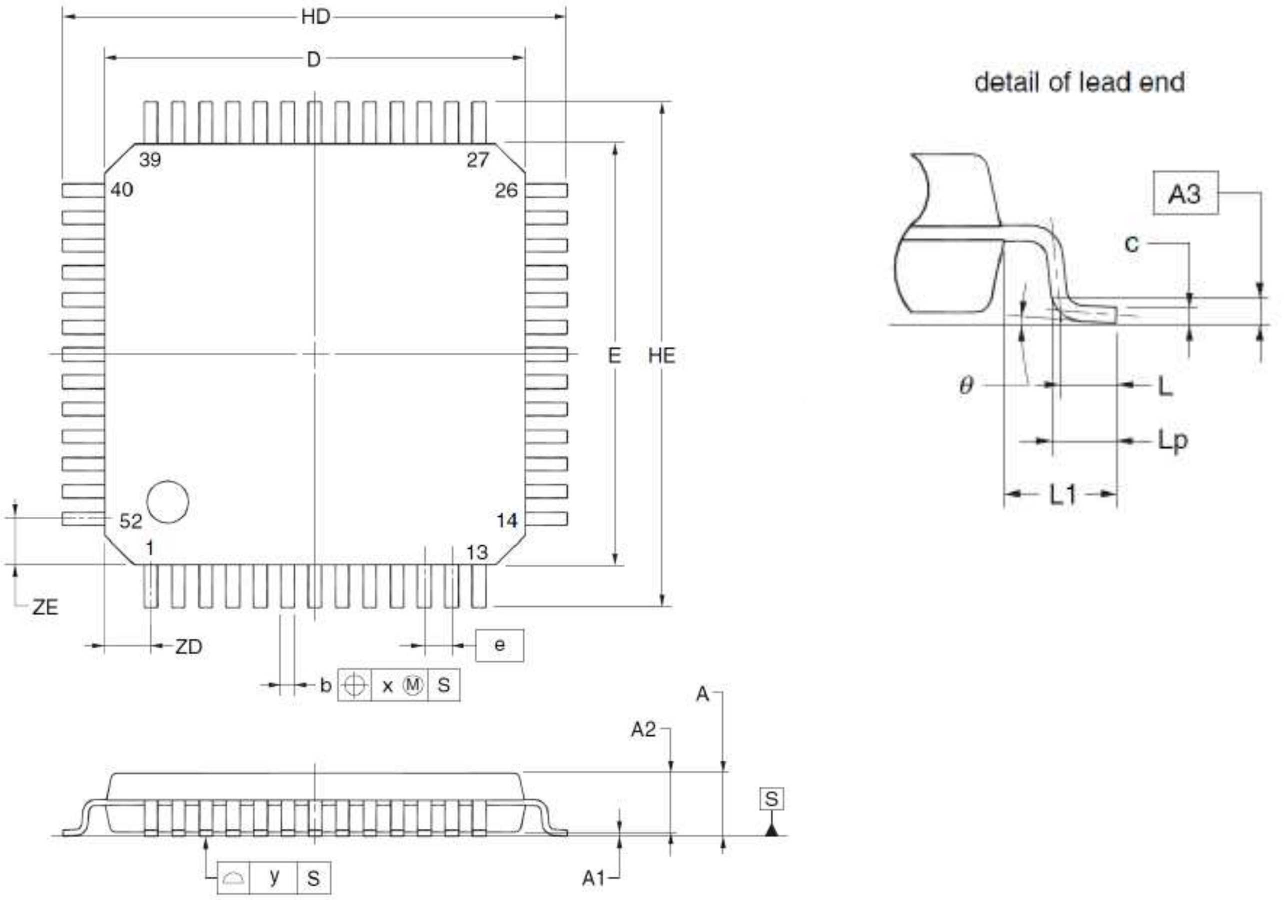
Difference of specification

Item		Additional factory	Existing factory
Wafer process factory		Kawashiri / Saijo	Kawashiri
Assembly factory		RSKL	RSB
Sorting factory		RSKL	RSB
Package	Outline	There are differences (Refer to pages 6 to 8)	
Lead frame	Material	No difference	
	Inner pattern	There are differences (Refer to pages 9)	
Die mount	Material	Ag epoxy paste B *	Ag epoxy paste A *
Bonding wire	Material	No difference; Cu (Pd coating)	
Resin	Material	Epoxy resin B * (halogen-free)	Epoxy resin A * (halogen-free)
Plating	Material	No difference	
Marking	Font	There are differences (Refer to pages 10)	
	Digit number	There are differences (Refer to pages 11)	
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.

10mm×10mm 0.65mm pitch 52pin LQFP Package outline (RSKL)

RENESAS Code : PLQP0052JD-B

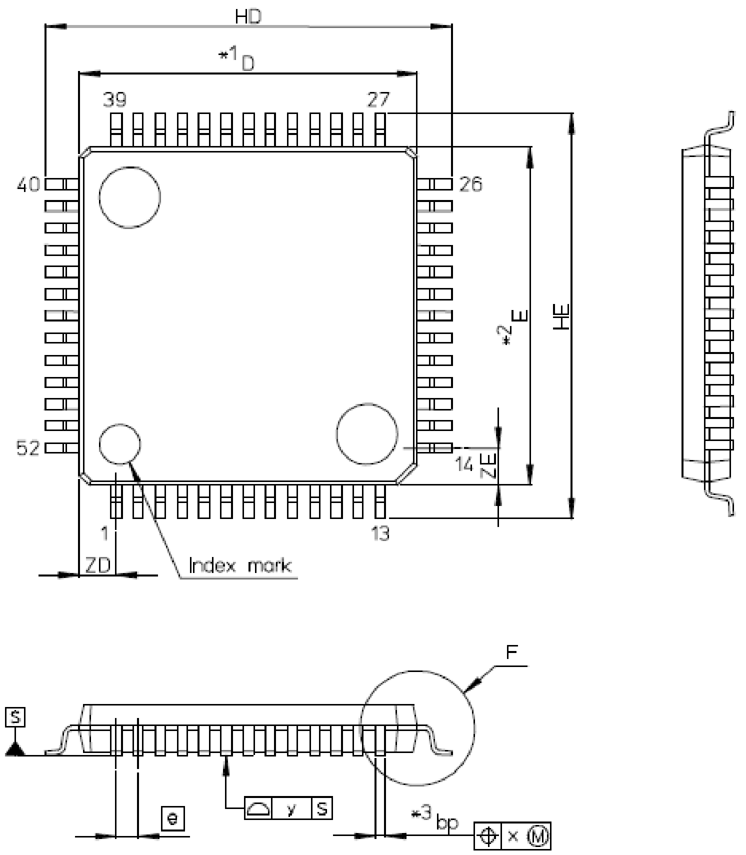

detail of lead end

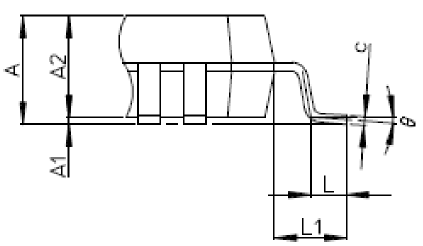
(UNIT:mm)

ITEM	DIMENSIONS
D	10.00±0.20
E	10.00±0.20
HD	12.00±0.20
HE	12.00±0.20
A	1.60 MAX.
A1	0.10±0.05
A2	1.40±0.05
A3	0.25
b	$0.32^{+0.08}_{-0.07}$
c	$0.145^{+0.055}_{-0.045}$
L	0.50
Lp	0.60±0.15
L1	1.00±0.20
θ	$3^{\circ}{}^{+5^{\circ}}_{-3^{\circ}}$
e	0.65
x	0.13
y	0.10
ZD	1.10
ZE	1.10

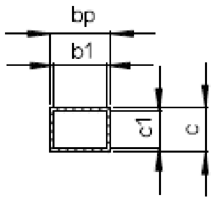
10mm×10mm 0.65mm pitch 52pin LQFP Package outline (RSB)

RENESAS Code : PLQP0052JA-A





Detail F



Terminal cross section

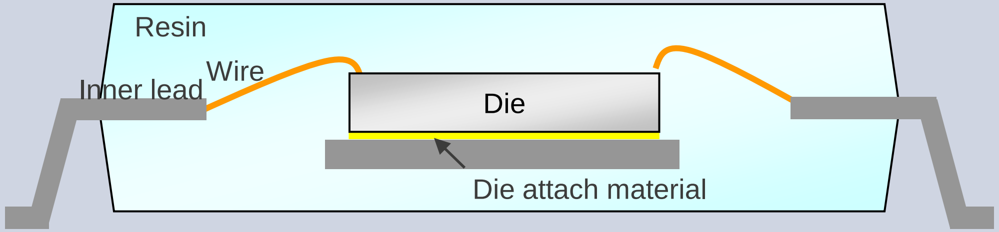
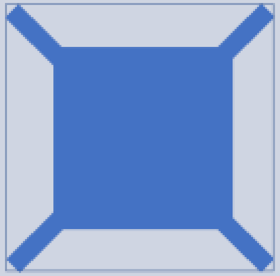
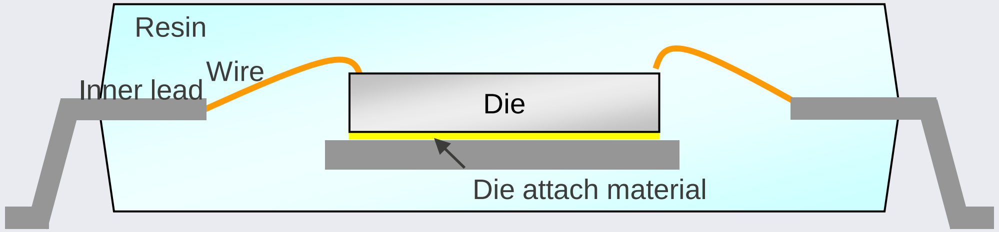
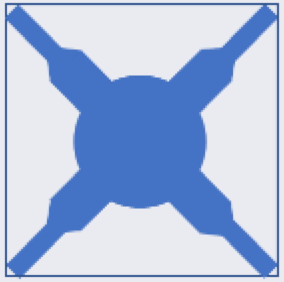
Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	9.9	10.0	10.1
E	9.9	10.0	10.1
A2	—	1.4	—
HD	11.8	12.0	12.2
HE	11.8	12.0	12.2
A	—	—	1.7
A1	0.05	0.1	0.15
bp	0.27	0.32	0.37
b1	—	0.30	—
c	0.09	0.145	0.20
c1	—	0.125	—
θ	0°	—	8°
e	—	0.65	—
x	—	—	0.13
y	—	—	0.10
ZD	—	1.1	—
ZE	—	1.1	—
L	0.35	0.5	0.65
L1	—	1.0	—

Dimension comparison: 10mm×10mm 0.65mm pitch 52pin LQFP

RSKL Symbol	10x10mm 52pin LQFP PLQP0052JD-B			RSB Symbol	10x10mm 52pin LQFP PLQP0052JA-A		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
D	9.80	10.00	10.20	D	9.90	10.00	10.10
E	9.80	10.00	10.20	E	9.90	10.00	10.10
HD	11.80	12.00	12.20	HD	11.80	12.00	12.20
HE	11.80	12.00	12.20	HE	11.80	12.00	12.20
A	-	-	1.60	A	-	-	1.70
A1	0.05	0.10	0.15	A1	0.05	0.10	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
A3	-	0.25	-	-	-	-	-
b	0.25	0.32	0.40	bp	0.27	0.32	0.37
-	-	-	-	b1	-	0.30	-
c	0.10	0.145	0.20	c	0.09	0.145	0.20
-	-	-	-	c1	-	0.125	-
L	-	0.50	-	L	0.35	0.50	0.65
Lp	0.45	0.60	0.75	-	-	-	-
L1	0.80	1.00	1.20	L1	-	1.00	-
Θ	0°	3°	8°	Θ	0°	-	8°
e	-	0.65	-	e	-	0.65	-
x	-	0.13	-	x	-	-	0.13
y	-	0.10	-	y	-	-	0.10
ZD	-	1.10	-	ZD	-	1.10	-
ZE	-	1.10	-	ZE	-	1.10	-

Package structure image

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

Assembly Line	PKG cross section	Die pad shape
Additional factory		 RSKL
Existing factory		 RSB

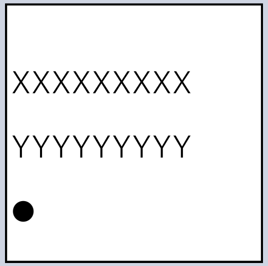
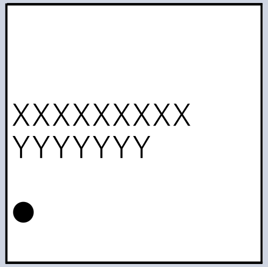
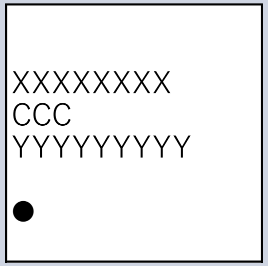
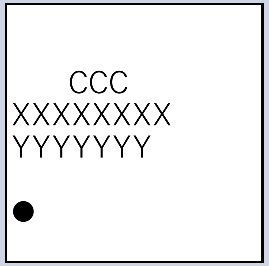
※ There is no impact on the reliability by die pad shape

Marking visibility

※Character is reference example

Assembly Line	RSKL (Additional factory)	RSB (Existing factory)
Overall photo		
Enlarged photo		

10x10mm 0.65mm pitch 52pinLQFP marking specifications

Product	RSKL (Additional factory)	RSB (Existing factory)
Blank products		
	1st row 9 characters: product name 2nd row - 3rd row 9 characters: Lot №	1st row – 2nd row 9 characters: product name 3rd row 7 characters: Lot №
ROM products		
	1st row 8 characters: product name 2nd row 3 characters: ROM code 3rd row 9 characters: Lot №	1st row 3 characters: ROM code 2nd row 8 characters: product name 3rd row 7 characters: Lot №

4M changing points (Addition of assembly and sorting factory , Change of material)

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

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
Machine	The machines are equivalent to current machines.	No risk
Method	The same as current products.	No risk
Man	Using operator certification system. Only certificated operator can work for the production.	No risk
Material	The same material is used.	No risk

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