

## Product Change Notification

(Notification – P2201002-DI)

(MCP-AC-21-0014/0086 / MCP-AB-22-0014/0015 / DPE015)

January 21, 2022

**To:** *Our Valued Customer (Insert Customer Name Here)*

The purpose of this notification is to communicate a product change of select Renesas Electronics America, Inc. (REA) devices.

This notification announces one or more of the following changes to select RL78 devices. See the change specification number and the appendix for additional details.

- Addition of Greatek Electronics Inc.(Greatek) as an Assembly Site
- Addition of King Yuan Electronics Co., Ltd. (KYEC) as a Final Test (Sorting) Site
- Package Outline Change
- Lead Frame Inner Pattern Change
- Die Mount Material Change
- Resin Material Change
- Marking Font Change
- Storage Condition Change
- Tape & Reel Tape Width Change

There may be a change to the form. There is no impact to the part number, specifications, characteristics, fit, quality & reliability of the products.

**Affected Products:** A review of our records indicates the list of products in the appendix may affect your company.

Part numbers given in this list are for active part numbers in REA database at the time of this notification.

**Key Dates:**

Shipments from REA of the parts with the changes begins.
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April 1, 2022
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**Response:** No response is required. REA will consider this notification approved 30 days after its issue. If you anticipate volumes beyond your regular rate prior to the transition date, please contact your REA sales representative with a forecast of your requirements.

If the customer provides a timely acknowledgement, the customer shall have 90 days (an additional 60 days) from the date of receipt of this notification in which to make any objections to the notification. If the customer does not make any objections to this notification within 90 days of the receipt of the notification, then Renesas will consider the notification as approved. If customer cannot accept the notification, then the customer must provide Renesas with a last time buy demand and purchase order.

Please contact your REA sales representative for any questions or comments. Thank you for your attention.

Sincerely,

Renesas Electronics America, Inc.

**Appendix A: Affected Part List**

Booking Part Number		
R5F110PEAFB#10	R5F110PJAFB#10	R5F111PGGG03FB#50
R5F110PEAFB#30	R5F110PJAFB#30	R5F111PGGG04FB#50
R5F110PEAFB#50	R5F110PJAFB#50	R5F111PHAFB#10
R5F110PEGFB#10	R5F110PJGFB#10	R5F111PHAFB#30
R5F110PEGFB#30	R5F110PJGFB#30	R5F111PHAFB#50
R5F110PEGFB#50	R5F110PJGFB#50	R5F111PHGFB#10
R5F110PFAFB#10	R5F111PEAFB#10	R5F111PHGFB#30
R5F110PFAFB#30	R5F111PEAFB#30	R5F111PHGFB#50
R5F110PFAFB#50	R5F111PEAFB#50	R5F111PJAFB#10
R5F110PFGFB#10	R5F111PEGFB#10	R5F111PJAFB#30
R5F110PFGFB#30	R5F111PEGFB#30	R5F111PJAFB#50
R5F110PFGFB#50	R5F111PEGFB#50	R5F111PJGFB#10
R5F110PGAFB#10	R5F111PFAFB#10	R5F111PJGFB#30
R5F110PGAFB#30	R5F111PFAFB#30	R5F111PJGFB#50
R5F110PGAFB#50	R5F111PFAFB#50	R5F111MPEAFB#10
R5F110PGGFB#10	R5F111PFGFB#10	R5F111MPEAFB#30
R5F110PGGFB#30	R5F111PFGFB#30	R5F111MPEAFB#50
R5F110PGGFB#50	R5F111PFGFB#50	R5F111MPFAFB#10
R5F110PHAFB#10	R5F111PGAFB#10	R5F111MPFAFB#30
R5F110PHAFB#30	R5F111PGAFB#30	R5F111MPFAFB#50
R5F110PHAFB#50	R5F111PGAFB#50	R5F111MPGAFB#10
R5F110PHGFB#10	R5F111PGGFB#10	R5F111MPGAFB#30
R5F110PHGFB#30	R5F111PGGFB#30	R5F111MPGAFB#50
R5F110PHGFB#50	R5F111PGGFB#50	

## Appendix B: Change Specification #1 - Summary (RL78/L1A & RL78/L1C)

Item		Additional Factory	Existing Factory
Assembly Factory		Greatek	RSB
Sorting Factory		KYEC	RSB
Package	Outline	Changed	
Lead Frame	Material	No Difference	
	Inner Pattern	Changed	
Die Mount	Material	Ag Epoxy Paste D *	Ag Epoxy Paste A *
Bonding Wire	Material	No Difference; Cu (Pd Coating)	
Resin	Material	Epoxy Resin D * (Halogen-Free)	Epoxy Resin A * (Halogen-Free)
Plating	Material	No Difference	
Marking	Font	Changed	
	Digit Number	No Difference	
Packing	Tray / Emboss Tape	No Difference	
Storage Conditions	After Opening	30°C/60%RH/ within 168hr	30°C/70%RH/ within 168hr

\* Factory certified materials - there are differences in materials, but there is no change in reliability or characteristics.

The storage conditions for Greatek products after opening the moisture-proof bag comply with JEDEC standards.

## Appendix C: Change Specification #1 - Package Outline

There is no change in footprint for additional factory products.

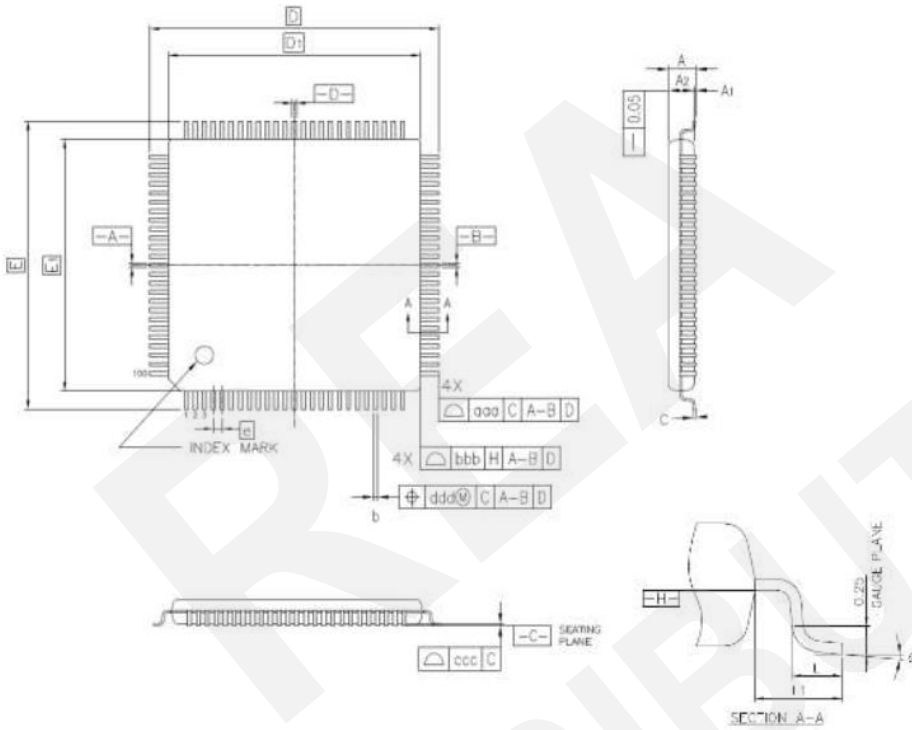
Dimension Comparison: 14mm x 14mm 0.5mm pitch 100pin LQFP

Greatek Symbol	14x14mm 100pin LQFP PLQP0100KP-A			RSB Symbol	14x14mm 100pin LQFP PLQP0100KB-B		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	16.00	-	HD	15.80	16.00	16.20
D1	-	14.00	-	D	13.90	14.00	14.10
E	-	16.00	-	HE	15.80	16.00	16.20
E1	-	14.00	-	E	13.90	14.00	14.10
N	-	100	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.15	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.000	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

Greatek package symbols complied JEDEC standard.

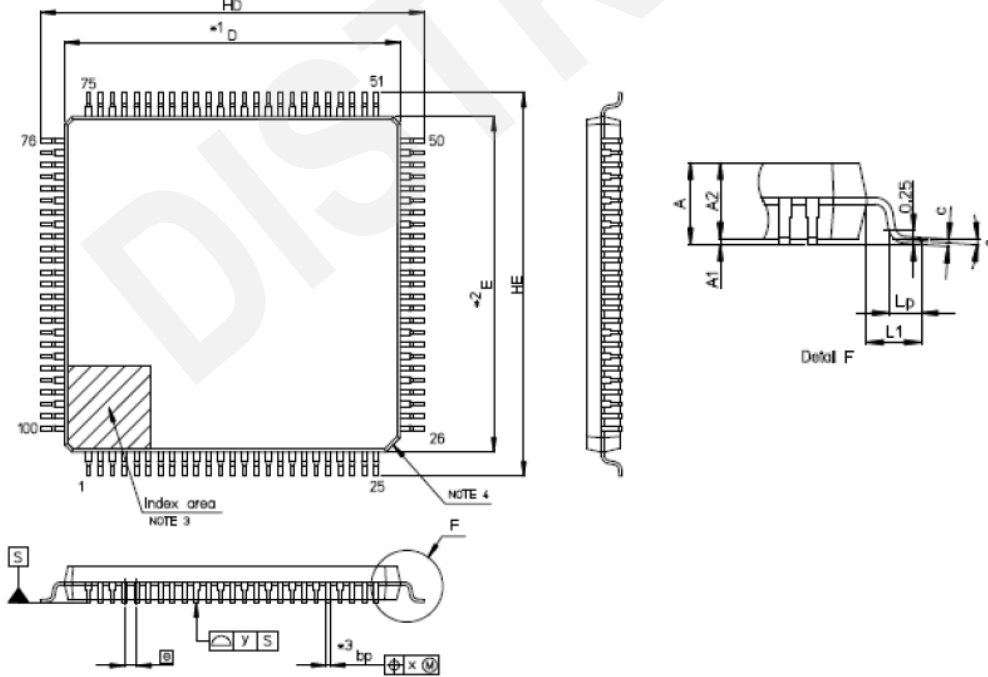
### Appendix C: Change Specification #1 - Package Outline (cont.)

14mm x 14mm 0.5mm pitch 100pin LFQFP Package Outline (Greatek)  
 RENESAS Code : PLQP0100KP-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A <sub>1</sub>	0.05	—	0.15
A <sub>2</sub>	1.35	1.40	1.45
D	—	16.00	—
D <sub>1</sub>	—	14.00	—
E	—	16.00	—
E <sub>1</sub>	—	14.00	—
N	—	100	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L <sub>1</sub>	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08

14mm x 14mm 0.5mm pitch 100pin LFQFP Package Outline (RSB)  
 RENESAS Code : PLQP0100KB-B



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	13.9	14.0	14.1
E	13.9	14.0	14.1
A <sub>2</sub>	—	1.4	—
HD	15.8	16.0	16.2
HE	15.8	16.0	16.2
A	—	—	1.7
A <sub>1</sub>	0.05	—	0.15
bp	0.15	0.20	0.27
c	0.09	—	0.20
θ	0°	3.5°	8°
e	—	0.5	—
x	—	—	0.08
y	—	—	0.08
L <sub>p</sub>	0.45	0.6	0.75
L <sub>1</sub>	—	1.0	—

### Appendix D: Change Specification #1 - Lead Frame Inner Pattern Change

\* Package Section and die pad shape are reference examples.

Assembly Line	PKG Cross Section	Die Pad Shape
Additional Factory		<p style="text-align: center;">Greatek</p>
Existing Factory		<p style="text-align: center;">RSB</p>

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

### Appendix E: Change Specification #1 - Font Change

※ Characters are reference example

Assembly Line	Greatek (Additional Factory)	RSB (Existing Factory)
Overall Photo		
Enlarged Photo		

**Appendix F: Change Specification #1 - 4M Changing Points**

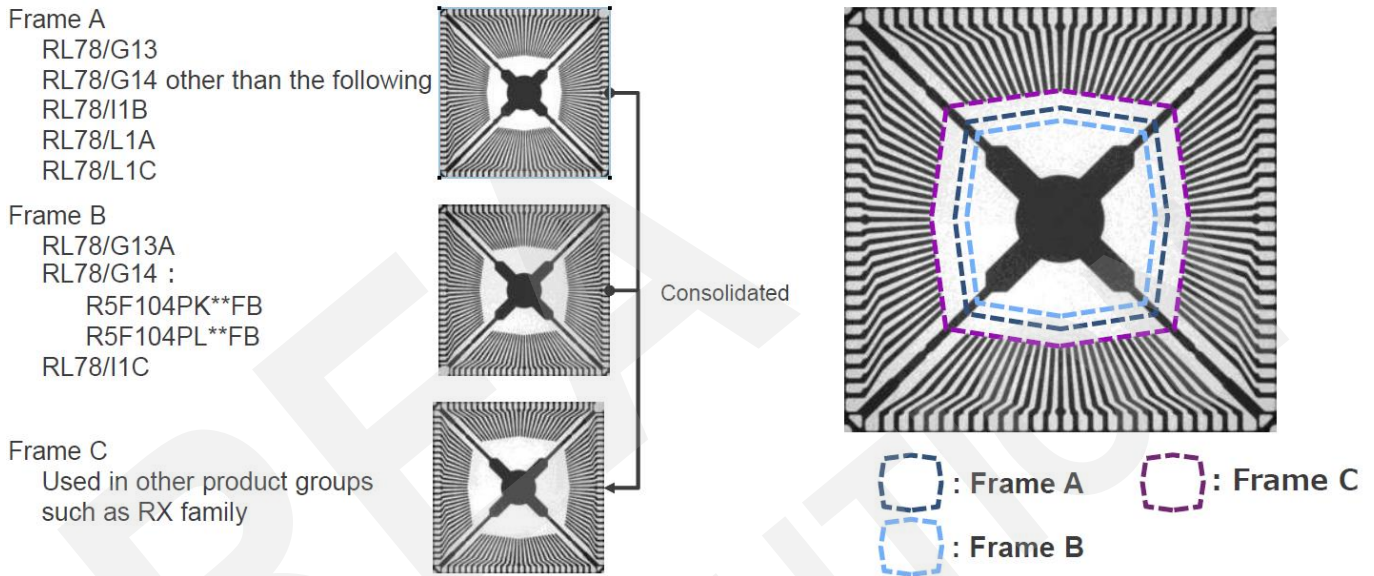
Item	Check Result	Judgement
Machine	Changing at assembly and sorting. The machines are equivalent to present machines. They are producing similar products and checks of the additional products have found no risk in production.	No Risk
Method	The same as current products.	No Risk
Man (Operator)	Using operator certification system. Only certificated operator can work for the production.	No Risk
Material	Using certified materials. The products have been certificated by reliability test same as existing products and have no risk.	No Risk

**Appendix G: Change Specification #2 - Change Summary (RL78/L1A & RL78/L1C)**

Item		After Consolidated	Current
Target Assembly Factory		RSB	
Target Sorting Factory		RSB	
Package	Outline	No Difference	
Lead Frame	Material	No Difference	
	Inner Pattern	Changed	
Die mount	Material	No Difference	
Bonding wire	Material	No Difference	
Resin	Material	No Difference	
Plating	Material	No Difference	
Marking	Font	No Difference	
	Digit Number	No Difference	

### Appendix H: Change Specification #2 - Lead Frame Inner Pattern Change

14x14mm 0.5mm pitch 100pin LFQFP Lead Frame  
Consolidate into certified and proven lead frames.



### Appendix I: Change Specification #2 - Efforts for Changing Lead Frames

The change points are verified and there are no problems.

Change Point	Failure Mode	Cause	Response At Startup	Judgement
Lead Frame Change	Assembly Failure	Positional Deviation	Mass productivity has been evaluated for similar products with the same PKG outline.	No Problem
	Impact on Reliability	Delamination After Reflow	Mass productivity has been evaluated for similar products with the same PKG outline.	No Problem

### Appendix J: Change Specification #2 - 4M Changing Points

Item	Check Result	Judgement
Machine	The same as existing products.	No Risk
Method	The same as existing products.	No Risk
Man (Operator)	Using operator certification system. Only certificated operator can work for the production.	No Risk
Material	Using certified materials. The products have been certificated by reliability test same as existing products and have no risk.	No Risk

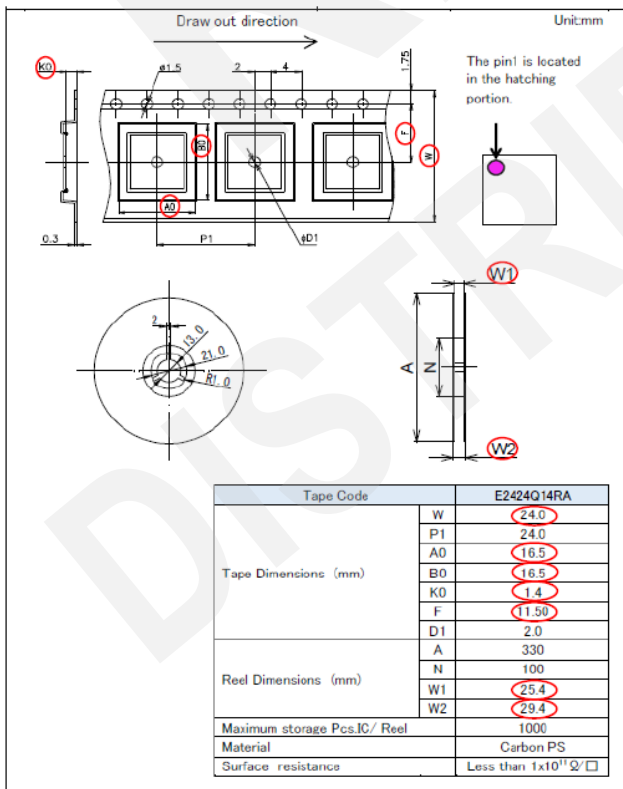
### Appendix K: Change Specification #3 - Change Summary (RL78/L1A & RL78/L1C)

Material	Item	New	Current
Carrier Tape	Tape Name	E2424Q14RA	MTE3224H-100P6Q-A
	Feed Hole	<b>Single Side Hole</b>	Both Sides Hole
	Tape Width	<b>24mm</b>	32mm
	Tape Thickness	0.3mm	0.3mm
	Pocket Size	<b>16.5x16.5</b>	17.3x17.3
	Pitch Between Pockets	24mm	24mm
	Material	PS	PS
Reel	Reel Diameter	330mm	330mm
	Core Diameter	100mm	100mm
	Reel Width	<b>24mm</b>	32mm
Cover Tape	Tape Width	<b>21.3mm</b>	25.5mm

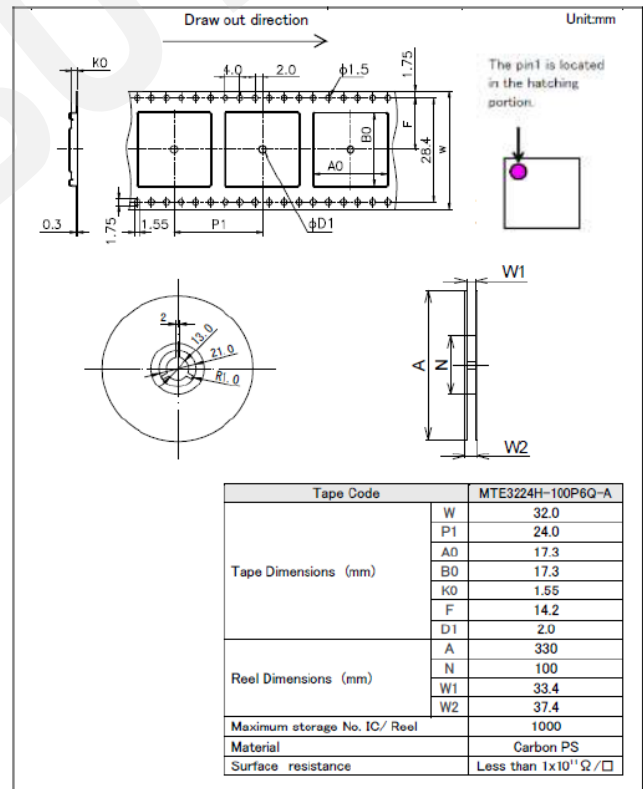
\* RL78/L1A and RL78/L1C 14x14mm 100pin products are target products.  
Other RL78 14x14mm products are using the carrier tape after consolidation.

### Appendix L: Change Specification #3 - T&R Drawing Comparison

New (Width:24mm)



Current (Width:32mm)





**Appendix M: Change Specification #3 - 4M Changing Points**

Item	Check Result	Judgement
Machine	The same as existing products.	No Risk
Method	The same as existing products.	No Risk
Man (Operator)	Using operator certification system. Only certificated operator can work for the production.	No Risk
Material	Using certified materials. The products have been certificated by reliability test same as existing products and have no risk.	No Risk