

## Product Change Notification

(Notification - P1803012-DIG)

(DOP001 / HMRL-AC-17-0016 / 1)

March 30, 2018

**To:** *Our Valued Digi-Key, Inc. Customer*

**Overview:** 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 L12/L13 devices (see Appendix 2 for details of the specific change).

1. Addition of Saijyo as a wafer fabrication site
2. Bonding Wire change from Gold (Au) to Copper (Cu)
3. Mold Resin material change

There is a part number change. There is no change in product specifications and/or characteristics. There is no impact to quality and/or reliability.

**Affected Products:** A review of our records indicates the attached list (see Appendix 1) of products may affected 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 replacement products begins.	<b>Aug. 1<sup>st</sup>, 2018</b>
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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.

You are encouraged to sample the suggested replacement device and begin qualification as soon as possible. Please contact you REA sales representative to obtain samples.

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 1: Digi-Key Part List

Booking Part Number	Replacement Part Number	Change Notes
R5F10RB8AFP#V0	R5F10RB8AFP#30	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RB8AFP#X0	R5F10RB8AFP#50	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RB8GFP#V0	R5F10RB8GFP#30	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RB8GFP#X0	R5F10RB8GFP#50	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBAAFP#V0	R5F10RBAAFP#30	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBAAFP#X0	R5F10RBAAFP#50	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBAGFP#V0	R5F10RBAGFP#30	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBAGFP#X0	R5F10RBAGFP#50	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBCAFP#V0	R5F10RBCAFP#30	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBCAFP#X0	R5F10RBCAFP#50	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBCGFP#V0	R5F10RBCGFP#30	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;
R5F10RBCGFP#X0	R5F10RBCGFP#50	1. Addition of Saijyo as a wafer fabrication site; 2. Bonding Wire change from Gold (Au) to Copper (Cu); 3. Mold Resin material change;

**Appendix 1: Digi-Key Part List (cont.)**

Booking Part Number	Replacement PN	PCN Notes for Customer Notification
R5F10RJ8AFA#V0	R5F10RJ8AFA#30	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJ8AFA#X0	R5F10RJ8AFA#50	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJ8GFA#V0	R5F10RJ8GFA#30	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJ8GFA#X0	R5F10RJ8GFA#50	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJAAFA#V0	R5F10RJAAFA#30	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJAAFA#X0	R5F10RJAAFA#50	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJAGFA#V0	R5F10RJAGFA#30	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJAGFA#X0	R5F10RJAGFA#50	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJCAFA#V0	R5F10RJCAFA#30	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJCAFA#X0	R5F10RJCAFA#50	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJCGFA#V0	R5F10RJCGFA#30	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;
R5F10RJCGFA#X0	R5F10RJCGFA#50	1. Bonding Wire change from Gold (Au) to Copper (Cu); 2. Mold Resin material change;

## Appendix 2: Change Details

### DIFFERENCE OF SPECIFICATION (RL78/L12,L13)

**WAFER FABRICATION: KAWASHIRI → KAWASHIRI/SAIJO ,  
ASSEMBLY: RSB , SORTING: RSB ,  
BONDING WIRE : Cu, Au → Cu**

MARCH.13, 2018

BROAD-BASED SOLUTION BUSINESS UNIT  
RENESAS ELECTRONICS CO., LTD.

TECHNOLOGY DIVISION  
RENESAS SEMICONDUCTOR PACKAGE & TEST SOLUTIONS CO., LTD.

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## Appendix 2: Change Details (cont.)

### Outline

- Addition of wafer fabrication factory:  
Current factory: Renesas Semiconductor Manufacturing Kawashiri 8 inch line  
Additional factory: Renesas Semiconductor Manufacturing Saijo 8 inch line
- Assembly factory: No change  
Renesas Semiconductor (Beijing) Co., Ltd. (RSB)
- Sorting factory: No change  
Renesas Semiconductor (Beijing) Co., Ltd. (RSB)
- Change of material: 1) Bonding wire, 2) Resin  
On the other hand, there is no change in material of the product which does not change the wire type.
- Change of ordering Part Number:  
The products which are changed the bonding wire from Gold (Au) to Copper (Cu) are changed the ordering Part Number as follows.  
Current part number: R5F1\*\*\*\*\*#V0, R5F1\*\*\*\*\*#X0  
New part number: R5F1\*\*\*\*\*#30, R5F1\*\*\*\*\*#50
- Specification and characteristics of product:  
No change
- Quality and reliability:  
No change

### Difference of specification (No change of wire )

Item		Current	New
Wafer fabrication factory		Kawashiri	Kawashiri / Saijo
Assembly factory			RSB
Sorting factory			RSB
Package	Outline		No change
Lead frame	Material		No change
	Inner pattern		No change
Die mount material	Material		No change
Bonding wire	Material		No change
Resin	Material		No change
Plating	Material		No change
Marking	Font		No change
	Digit number		No change
Packing	Tray / Emboss tape		No change

## Appendix 2: Change Details (cont.)

### Difference of specification (Change of wire )

Item		Current	New
Wafer fabrication factory		Kawashiri	Kawashiri / Saijo
Assembly factory		RSB	
Sorting factory		RSB	
Package	Outline	No change	
Lead frame	Material	No change	
	Inner pattern	No change	
Die mount material	Material	No change	
Bonding wire	Material	Au	Cu (Pd coating)
Resin	Material	Resin A-1 (halogen-free )	Resin A-2 (halogen-free )
Plating	Material	No change	
Marking	Font	No change	
	Digit number	No change	
Packing	Tray / Emboss tape	No change	

※ There is no impact on reliability and specification by material change.

### 4M changing points

(Addition of wafer fabrication factory)

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>

Appendix 2: Change Details (cont.)

## 4M changing points

(Change of material)

Item	Check Result	Judgement
<b>Machine</b>	Copper wire products are produced by same wire-bonding machine applied gold wire. To prevent copper wire oxidization, inert gas is used to wire-bonding process. There are production of similar copper wire products and we have already checked the additional products have no risk on the production.	<b>No risk</b>
<b>Method</b>	Bonding method (thermosonic bonding) and process flow for the Cu wiring are same as the Au wiring.	<b>No risk</b>
<b>Man</b>	No change.	<b>No risk</b>
<b>Material</b>	Using only certificated copper wire. And furthermore certificated materials for the Cu wiring products are applied. The products has been certificated by reliability test same as gold wire products and have no risk.	<b>No risk</b>