

Version: 1.0

In case of any question, please contact:

Düsseldorf, 12.02.2019

☐ acknowledge
☐ acceptable
☐ unacceptable (pls. comment)
☐ not applicable

Company: _____
 Name & Position: _____
 Phone / Fax No.: _____

--

PCN EE-QR-190208-01

Details of Change:

Target product RL78/G12 , 20pin SSOP

Addition of wafer fabrication factory

Current factory: Renesas Semiconductor Manufacturing Kawashiri

Additional factory: Renesas Semiconductor Manufacturing Saijo

Change of material

Bonding wire:

Current material: Gold (Au)

Change material: Copper (Cu).

Die mount material change:

The material of die mount will be changed because of usage of materials which are certified and have actual production at each factory.

Difference of specification (RL78/G12 20pin SSOP)

WAFER FABRICATION: KAWASHIRI → KAWASHIRI/SAIJO

ASSEMBLY: RSB, SORTING:RSB

BONDING WIRE : Au → Cu

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 (Ag epoxy paste)	Change (Ag epoxy paste)
Bonding wire	Material	Au	Cu (Pd coating)
Resin	Material	No change	
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.

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) Die mount
- 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*****#V5, R5F1*****#X0 , R5F1*****#X5
New part number: R5F1*****#35, R5F1*****#55
- Specification and characteristics of product:
No change
- Quality and reliability:
No 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
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

(Change of material)

Item	Check Result	Judgement
Machine	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 that the additional products have no risk on the production.	No risk
Method	Bonding method (thermosonic bonding) and process flow for the Cu wiring are same as the Au wiring.	No risk
Man	No change.	No risk
Material	Using only certificated copper wire. And furthermore certificated materials for the Cu wiring products are applied. The products have been certificated by reliability test, same as gold wire products and have no risk.	No risk

Difference of specification (RL78/G12 20pin SSOP)

ASSEMBLY: RSB, SORTING:RSB

BONDING WIRE : Au → Cu

Difference of specification (Change of wire)

Item		Current	New
Wafer fabrication factory		Kawashiri	Kawashiri
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 (Ag epoxy paste)	Change (Ag epoxy paste)
Bonding wire	Material	Au	Cu (Pd coating)
Resin	Material	No change	
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.

Outline:

- Addition of wafer fabrication factory:No change
Renesas Semiconductor Manufacturing Kawashiri 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) Die mount
- 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****GSP#V0, R5F1****GSP#V5, R5F1****GSP#X0 , R5F1****GSP#X5
New part number: R5F1****GSP#35, R5F1****GSP#55
- Specification and characteristics of product:
No change
- Quality and reliability:
No change

4M Changing Points:

(Change of material)

Item	Check Result	Judgement
Machine	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 that the additional products have no risk on the production.	No risk
Method	Bonding method (thermosonic bonding) and process flow for the Cu wiring are same as the Au wiring.	No risk
Man	No change.	No risk
Material	Using only certificated copper wire. And furthermore certificated materials for the Cu wiring products are applied. The products have been certificated by reliability tests, same as gold wire products and have no risk.	No risk

Product List

R5F10266ASP#V0	R5F1026AASP#V0
R5F10266ASP#V5	R5F1026AASP#V5
R5F10266ASP#X0	R5F1026AASP#X0
R5F10266ASP#X5	R5F1026AASP#X5
R5F10266DSP#V0	R5F1026ADSP#V0
R5F10266DSP#X0	R5F1026ADSP#V5
R5F10266GSP#V0	R5F1026AGSP#V0
R5F10266GSP#X0	R5F1026AGSP#V5
R5F10266GSP#X5	R5F1026AGSP#X0
R5F10267A101SP#V0	R5F1026AGSP#X5
R5F10267AA00SP#V0	R5F10366ASP#V0
R5F10267AA01SP#V0	R5F10366ASP#V5
R5F10267ASP#V0	R5F10366ASP#X0
R5F10267ASP#V5	R5F10367ASP#V0
R5F10267ASP#X0	R5F10367ASP#V5
R5F10267ASP#X5	R5F10367ASP#X0
R5F10267GSP#V0	R5F10367ASP#X5
R5F10268AA06SP#X0	R5F10367DSP#V0
R5F10268ASP#V0	R5F10367DSP#X0
R5F10268ASP#V5	R5F10367DSP#X5
R5F10268ASP#X0	R5F10368AA00SP#V0
R5F10268ASP#X5	R5F10368AA01SP#V0
R5F10268AXXXSP#V5	R5F10368AA01SP#X0
R5F10268DSP#X0	R5F10368AA02SP#V0
R5F10268GSP#V0	R5F10368AA05SP#V0
R5F10268GSP#V5	R5F10368ASP#V0
R5F10268GSP#X0	R5F10368ASP#V5
R5F10268GSP#X5	R5F10368ASP#X0
R5F10269AB01SP#X5	R5F10368ASP#X5
R5F10269ASP#V0	R5F10369ASP#V0
R5F10269ASP#V5	R5F10369ASP#V5
R5F10269ASP#X0	R5F10369ASP#X0
R5F10269ASP#X5	R5F10369ASP#X5
R5F10269DE02SP#X0	R5F1036AASP#V0
R5F10269DSP#V0	R5F1036AASP#V5
R5F10269DSP#X0	R5F1036AASP#X0
R5F10269GSP#V0	R5F1036AASP#X5
R5F1026AAA00SP#X0	R5F1036ADSP#V5
R5F1026AAA01SP#X0	