

## Product Change Notice (PCN)

**Subject:** Assembly site transfer for Low Power SRAM 48-ball FBGA products

**Publication Date:** 2/6/2025

**Effective Date:** 5/6/2025

### Revision Description:

Initial Release

### Description of Change:

Regarding the assembly site for Low Power SRAM 48-ball FBGA products, Renesas changes the site from Amkor Technology Japan, Inc. Kumamoto (hereinafter referred as ATJ-Kumamoto) to Greatek Electronics Inc. (hereinafter referred as GTK).

The assembly materials of GTK products use GTK's standard materials. Regarding the comparison table between ATJ-Kumamoto products and GTK products, please refer to page 3 and after.

### Affected Product List:

RMLV0416EGBG-4S2#AC0	RMLV0416EGBG-4S2#KC0	RMLV0816BGBG-4S2#AC0	RMLV0816BGBG-4S2#KC0
RMLV1616AGBG-5S2#AC0	RMLV1616AGBG-5S2#KC0	RMLV1616AGBG-4U2#AC0	RMLV1616AGBG-4U2#KC0
RMLV1616AGBG-5U2#AC0	RMLV1616AGBG-5U2#KC0	RMLV3216AGBG-5S2#AC0	RMLV3216AGBG-5S2#KC0
RMWV6416AGBG-5S2#AC0	RMWV6416AGBG-5S2#KC0		

### Reason for Change:

To serve the objective of stable supply against the obsolescence of manufacturing equipment.

### Impact on Fit, Form, Function, Quality & Reliability:

No impact.

### Product Identification:

Identifiable by "Renesas internal code" and "country of origin indication" marked on the shipping label.

Please refer to page 6 for the shipping label specification.

In addition, the production history data can be inquired from the product's Date Code.

Please contact our sales representative.

**Qualification Status:** Please refer to the Appendix on page 7.

**Sample Availability Date:** Now Available

**Device Material Declaration:** Now Available

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.

<b>For additional information regarding this notice, please contact your Renesas sales representative.</b>
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# Comparison table between ATJ-Kumamoto products and GTK products

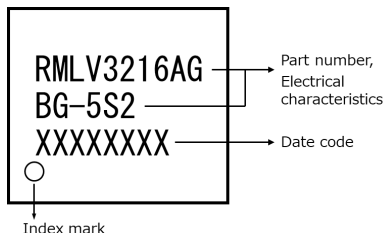
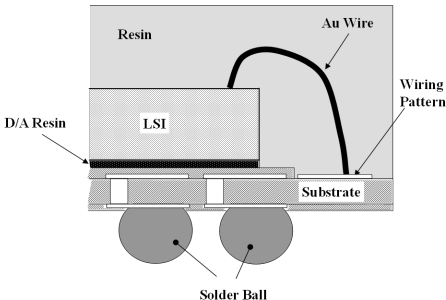
(1) 4Mb, 8Mb, 16Mb products

Part Number : RMLV0416EGBG-4S2, RMLV0816BGBG-4S2, RMLV1616AGBG-5S2/-4U2/-5U2

Item			Pre-change (ATJ-Kumamoto)	Post-change (GTK)
Orderable Part Number  (Tray = Tray packing, T&R = Tape & Reel packing)			RMLV0416EGBG-4S2#AC0 (Tray)	No change
			RMLV0416EGBG-4S2#KC0 (T&R)	No change
			RMLV0816BGBG-4S2#AC0 (Tray)	No change
			RMLV0816BGBG-4S2#KC0 (T&R)	No change
			RMLV1616AGBG-5S2#AC0 (Tray)	No change
			RMLV1616AGBG-5S2#KC0 (T&R)	No change
			RMLV1616AGBG-4U2#AC0 (Tray)	No change
			RMLV1616AGBG-4U2#KC0 (T&R)	No change
			RMLV1616AGBG-5U2#AC0 (Tray)	No change
			RMLV1616AGBG-5U2#KC0 (T&R)	No change
Assembly site			Amkor Technology Japan, Inc. Kumamoto	Greatek Electronics Inc.
JEITA Package Code			P-TFBGA48-7.5x8.5-0.75	No change
Package marking specification (example)			<div><div><div>RMLV0416EG BG-4S2 XXXXXXXX</div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div>Part number Electrical characteristics</div><div>Date code</div><div>Index mark</div></div>	No change in specification
Inside structure of package			<div><div><div>Resin</div><div>Au Wire</div><div>Wiring Pattern</div><div>LSI</div><div>D/A Resin</div><div>Substrate</div><div>Solder Ball</div></div></div>	No change in specification
Assembly material	Sub-strate	Material	Glass epoxy	Glass epoxy
		Pattern Layout	Current specification	New specification
	Solder ball		Sn-3Ag-0.5Cu	Sn-3Ag-0.5Cu
	Dia bonding		Epoxy paste	Epoxy paste
	Wire bonding		Au	Au
	Mold		Epoxy resin (Halogen-free)	Epoxy resin (Halogen-free)
Die thickness			200μm	203μm
Final test site			Powertech Technology Inc. (Taiwan)	No change
Packing specification			Current specification	No change
Moisture-proof performance			MSL 3	No change
Shipping label (*1)			Current specification	No change in format (Changes in internal code and country of origin)

(\*1) Please refer to page 6 for the shipping label specification.

**(2) 32Mb product**
**Part Number : RMLV3216AGBG-5S2**

Item			Pre-change (ATJ-Kumamoto)	Post-change (GTK)
Orderable Part Number  (Tray = Tray packing, T&R = Tape & Reel packing)			RMLV3216AGBG-5S2#AC0 (Tray)	No change
			RMLV3216AGBG-5S2#KC0 (T&R)	No change
Assembly site			Amkor Technology Japan, Inc. Kumamoto	Greatek Electronics Inc.
JEITA Package Code			P-TFBGA48-7.5x8.5-0.75	No change
Package marking specification			<div></div>	No change in specification
Inside structure of package			<div></div>	No change in specification
Assembly material	Sub- strate	Material	Glass epoxy	Glass epoxy
		Pattern Layout	Current specification	New specification
	Solder ball		Sn-3Ag-0.5Cu	Sn-3Ag-0.5Cu
	Dia bonding		Epoxy paste	Epoxy film
	Wire bonding		Au	Au
	Mold		Epoxy resin (Halogen-free)	Epoxy resin (Halogen-free)
Die thickness			200μm	102μm
Final test site			Powertech Technology Inc. (Taiwan)	No change
Packing specification			Current specification	No change
Moisture-proof performance			MSL 3	No change
Shipping label (*1)			Current specification	No change in format (Changes in internal code and country of origin)

(\*1) Please refer to page 6 for the shipping label specification.

(3) 64Mb product

Part Number : RMWV6416AGBG-5S2

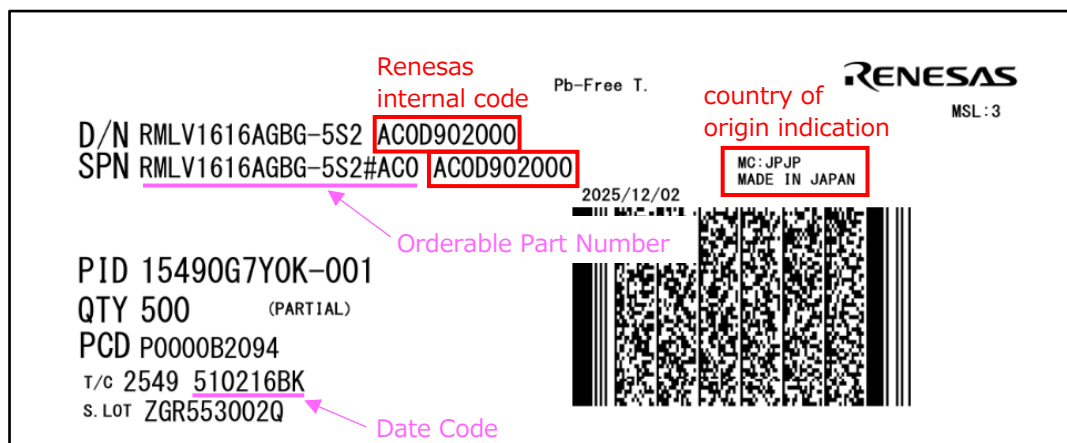
Item			Pre-change (ATJ-Kumamoto)	Post-change (GTK)
Orderable Part Number  (Tray = Tray packing, T&R = Tape & Reel packing)			RMWV6416AGBG-5S2#AC0 (Tray)	No change
			RMWV6416AGBG-5S2#KC0 (T&R)	No change
Assembly site			Amkor Technology Japan, Inc. Kumamoto	Greatek Electronics Inc.
JEITA Package Code			P-TFBGA48-7.5x8.5-0.75	No change
Package marking specification			<div><div><div>RMWV6416AG</div><div>BG-5S2</div><div>XXXXXXXX</div></div><div><div>Part number, Electrical characteristics</div><div>Date code</div></div><div><div>○</div><div>Index mark</div></div></div>	No change in specification
Inside structure of package			<div><div><div>Resin</div><div>I.C. 2</div><div>Spacer</div><div>I.C. 1</div><div>D/A Resin</div><div>Substrate</div><div>Solder Ball</div></div><div><div>Au Wire</div><div>Wiring Pattern</div></div></div>	<div><div><div>Resin</div><div>I.C. 2</div><div>I.C. 1</div><div>D/A Resin</div><div>Substrate</div><div>Solder Ball</div></div><div><div>Au Wire</div><div>Wiring Pattern</div></div></div>
Assembly material	Substrate	Material	Glass epoxy	Glass epoxy
		Pattern Layout	Current specification	New specification
	Solder ball		Sn-3Ag-0.5Cu	Sn-3Ag-0.5Cu
	Dia bonding		Epoxy film	Epoxy film
	Wire bonding		Au	Au
	Mold		Epoxy resin (Halogen-free)	Epoxy resin (Halogen-free)
Die thickness			90μm x2chip	102μm x2chip
Final test site			Powertech Technology Inc. (Taiwan)	No change
Packing specification			Current specification	No change
Moisture-proof performance			MSL 3	No change
Shipping label (*1)			Current specification	No change in format (Changes in internal code and country of origin)

(\*1) Please refer to page 6 for the shipping label specification.

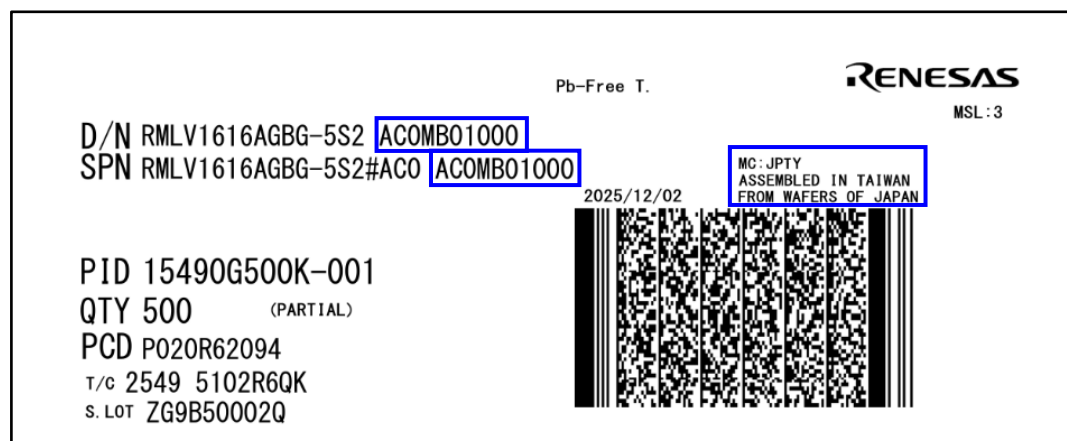
# Shipping label specification:

- Label format itself is unchanged.
- Written specifications: “Renesas internal code” and “country of origin display” are changed.  
See below for example.

## Pre-change (ATJ-Kumamoto)



## Post-change (GTK)



## Appendix : Reliability test result

- Products : RMLV0416EGBG-4S2, RMLV0816BGBG-4S2,  
RMLV1616AGBG-5S2, RMLV1616AGBG-4U2, RMLV1616AGBG-5U2,  
RMLV3216AGBG-5S2, RMWV6416AGBG-5S2

- Assembly site : GTK

### Reliability test result

Test Items	Reference	Test Conditions	Results Reject/Size
High Temperature Operating Life	JESD22-A108	Ta = 125 °C, Vcc max, 1000 h	0/228
Low Temperature Operating Life	JESD22-A108	Tj = -40 °C, Vcc max, 1000 h	0/32
High Temperature Storage Life	JESD22-A103	Ta = 150 °C, 1000 h	0/75
Temperature Humidity Bias (HAST)	JESD22-A110	Ta = 130 °C, 85% RH, Vcc max, 96 h	0/75
Temperature Cycling	JESD22-A104	Ta = -55 °C to +125 °C, 600 cycles	0/75
Unbiased Temperature Humidity (Unbiased HAST)	JESD22-A118	Ta = 130 °C, 85%RH, 96h	0/66
Resistance to Soldering Heat	JESD22-A113, J-STD-020	Bake:125 °C, 24 h Moisture Soak: 30 °C 70% RH, 192h (JEDEC-MSL3 Equivalent) Reflow: 260 °C peak, 255 °C 30 s, 3 times	0/33
Electrostatic discharge (HBM Method)	JS-001	C = 100 pF, R = 1.5 kΩ, ±1000 V	0/3
Electrostatic discharge (CDM Method)	JESD22-C101	±500 V	0/3
Latch-up (I-Test)	JESD78	±150 mA	0/3
Estimated Failure Rate	-	6.3 FIT or less Prerequisites: Ta = 55 °C, Ea = 0.7 eV, C.L. = 60%	
System Soft Error Testing (SSER)	JESD89-1	0.62FIT/Mbit or less(no error) Prerequisites: C.L. = 60%	

Reliability test results may include data from family representative products. MSL Preconditioning was performed prior to HAST, Unbiased HAST and Temperature Cycling.

The Criteria shall follow the electrical characteristics in Specifications, except for Solderability and SSER.

Preconditioning Details: Bake (125 °C, 24 h) -> Moisture Soak (30 °C 70% RH, 192 h) -> Reflow (260 °C peak, 3 times)