

## Product Change Notice (PCN)

**Subject:** Add Amkor, Taiwan as Alternate Bump and Assembly Location on FCBGA-400

**Publication Date:** 10/21/2024

**Effective Date:** 1/20/2025

**Revision Description:**

Initial Release

**Description of Change:**

Renesas is adding Amkor, Taiwan as an alternate Bump and Assembly location in expanding the supply chain for FCBGA-400 package. The alternate location is the current qualified location for Renesas. The material sets of the current and the alternate locations are as shown in the table below. There will be changes in the material sets, equipment models and inspection items and sampling at the alternate location. The process flows are identical at all the qualified locations.

There will be no changes in the moisture sensitive level due to this change.

	Existing Bump and Assembly	Alternate Bump and Assembly
Material Set/Location	ASEK, Taiwan	Amkor, Taiwan
UBM (µm)	Ti / Cu / Ni (0.1 / 0.5 / 3)	Ti / Cu / Ni (0.1 / 0.2 / 2)
POLYIMIDE/ PASSIVATION 1 and 2	PI1 (HD4000E) Thickness 5 ± 1µm	HD4100 Thickness 5 ± 1µm
Substrate/supplier	ABF (KINSUS/Daeduck/UMTC)	ABF (KINSUS/Daeduck/UMTC)
Flux	WF-6317	AWF-15
UnderFill	Namics UA32,LA	NAU-27
Solder ball	SAC305	SAC305
Solder ball diameter (µm)	600 ± 25µm	600 ± 25µm

**Affected Product List:** 80HCPS1616CHMG, 80HCPS1616CHMGI, 80HSPS1616CHMG, 80HSPS1616CHMGI.

**Reason for Change:**

The change is to create additional supplies to secure business continuity.

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

The change will have no impact on the form, fit, function, quality, reliability and environmental compliance of the products.

**Product Identification:**

Assembly lot# prefix denotes Bump & Assembly Location

Assembly Lot# Prefix	Bump & Assembly Location	Existing/Alternate Location
R	ASEK Taiwan	Existing location
AT	Amkor Taiwan	Alternate location

**Qualification Status:** Completed. Refer Appendix A

**Sample Availability Date:** 8 weeks from sample booking date

**Device Material Declaration:** Available upon request

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 [idt-pcn@lm.renesas.com](mailto:idt-pcn@lm.renesas.com)

**Appendix A - Qualification Results**
**Affected Package:** FCBGA-400

**Qual Vehicle:** FCBGA-400

**Assembly Material:** As shown in page 1

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

Test Descriptions	Test Method	Test Results (Rej/SS)				
		Lot 1	Lot 2	Lot 3	Lot 4	Lot 5
* Temperature Cycling (-55 °C to 125 °C, 700 cycles)	JESD22-A104	0/25	0/25	0/25	0/25	0/25
* Temperature Humidity biased (85 °C/85%RH, 96 Hrs)	JESD22-A101	0/25	0/25	0/25	0/25	0/25
* HAST - unbiased (130 °C/85%RH, 96 Hrs)	JESD22-A118	0/25	0/25	0/25	0/25	0/25
High Temperature Storage Bake (150 °C, 1000 Hrs)	JESD22-A103	0/25	0/25	0/25	0/25	0/25
Physical Dimensions	JESD22-B100	0/30	0/30	0/30	0/30	0/30
Solder Ball Shear Test (1000 Hrs)	JESD22-B117	0/5	0/5	0/5	0/5	0/5
Moisture Sensitivity Level, MSL	J-STD-20 MSL 4, 260 °C	0/25	0/25	0/25	0/25	0/25

*\*Tests were subjected to Preconditioning per JESD22-A113 prior to stress test*