Product Change Notice

(PCN Tracking Number: EE-QR-220119-01)

Version: 1

Customer:	ALL Customers
Renesas Product Type:	M16C & M32C. Refer to separate file “Product List & Change Scenario.xlsx”
Description of Change:	Change of die attach material, lead frame and production factory (pages 2-4)
Reason for Change:	Due to the end of supply by the material manufacturer
Identification:	Identifiable via production history data from the trace code
Schedules:	Sample order deadline: e/o Jan. 2022 Sample delivery: b/o May 2022 (upon request) Reliability report: available (upon request) Requested approval e/o Oct. 2022 Change Implementation b/o Jan.2023
Anticipated Impact:	Fit, Form & Function: No change Quality & Reliability: No impact
Doc. No.:	EEQC-PCN-CR-22-0039
Internal Reference:	IMO-AZ-21-0003-1

In case of any question, please contact:

INITIATOR	TITLE	E-mail	PHONE No.
Farhad Banihashemi	Staff Engineer	farhad.banihashemi@renesas.com	+49-211-6503-1844

Düsseldorf, 20.01.2022

Customer Response:

(please fill in and return by e-mail, fax or mail)

- ☐ acknowledge
- ☐ acceptable
- ☐ inacceptable (pls. comment)
- ☐ not applicable

Company: ________________________________

Name & Position: ________________________________

Phone / Fax No.: ________________________________

Note: Acknowledgement must be received by Renesas within 30 days or Renesas will consider the change as approved. If timely acknowledgement is provided by Customer, then Customer shall have 90 days from the date of receipt of this PCN in which to make any objections to the 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. If customer cannot accept the PCN, they must provide Renesas with a last time buy demand and purchase order.

Comments:

________________________________ (Signature)

Details of Change:

Factory:
Before: Amkor Technology Japan, Inc. & Renesas Semiconductor (Beijing) Co., Ltd.

After: Amkor Technology Japan, Inc.

Die attach material: (Film →Ag paste)

Lead frame: (Fe →Cu, no change in shape.)

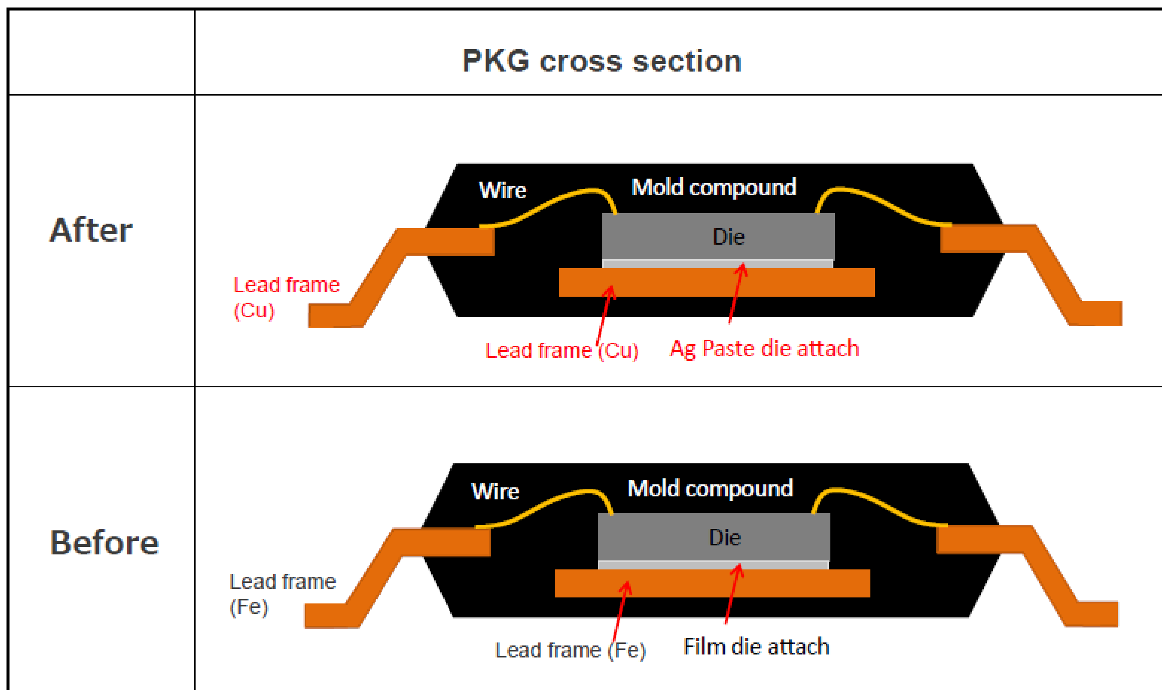
Item		Before	After
Die attach material	material	Film die attach	Ag paste die attach
Lead Frame	Raw material	Fe	Cu
Shape		No Change	

The changed material has a track record of mass production showing no change in reliability and characteristics.

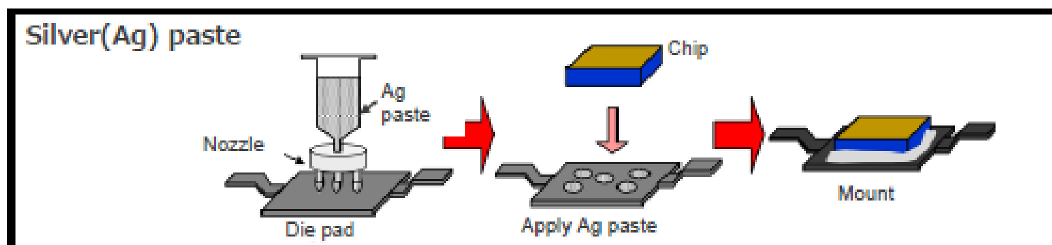
Changes in Manufacturing Equipment and Manufacturing Process:

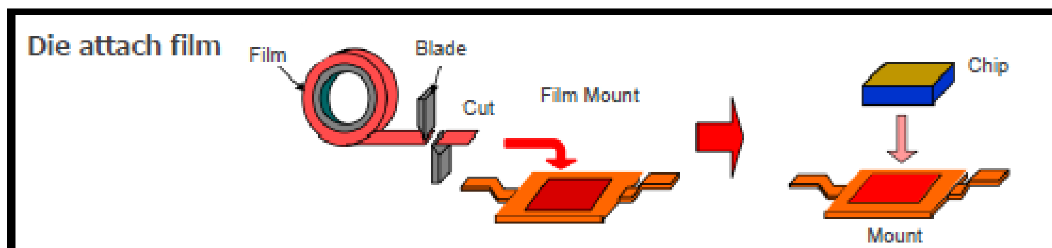
	Before	After	
Manufacturing equipment and process	Dicing process	Dicing process	There is no equipment and process change.
	Die attach process	Die attach process	There is no equipment and process change.
	Wire bonding process	Wire bonding process	There is no equipment and process change.
	Mold process	Mold process	There is no equipment and process change.
	Marking, Lead forming	Marking, Lead forming	There is no equipment and process change.
	Inspection	Inspection	There is no equipment and process change.
	Packing	Packing	There is no equipment and process change.
	Warehousing, shipping	Warehousing, shipping	There is no equipment and process change.

Package Structure (example):



Ag Paste /Die Attach Film Process (Image):





4M Changing Point Comparison:

Item	Check Result	Judgment
Machine	The manufacturing equipment has not changed.	No risk
Method	The manufacturing method has not changed.	No risk
Man	A worker certification system has been introduced and only workers who have received education and certification are engaged.	No risk
Material	Only Ag paste die attach material certified by OSAT will be used. The Ag paste die attach material to be changed has a track record of mass production. Only lead frame certified by OSAT will be used. The lead frame to be changed has a track record of mass production. We have confirmed that there is no problem with quality.	No risk

Changing point	Failure mode	factor	At process establishment	Judgment
Die attach material change	Chip support failure	Not enough elastic modulus caused by poor curing	Mass productivity was evaluated using similar products with the same PKG outline.	No risk
	Impact on reliability	Delamination after reflow	Reliability evaluation with similar products with the same PKG outline is no problem.	No risk
The material of lead frame change	Assembly failure	Die misaligned	Mass productivity was evaluated using representative products with the same PKG outline.	No risk
	Impact on reliability	Delamination after reflow	Reliability evaluation with representative products with the same PKG outline is no problem.	No risk

Product List:

Please refer to separate file “Product List & Change Scenario.xlsx”