

Product Change Notice (PCN)

Subject: Alternate bond wire material and assembly facility of the listed Renesas TSSOP packaged products

Publication Date: 9/21/2022

Effective Date: 12/20/2022

Revision Description:

Initial Release

Description of Change:

Alternate assembly facility of the listed Renesas TSSOP packaged products

- *Greatek Electronics Inc., Taiwan R.O.C (Greatek)*
- *UTAC Thai Ltd., Bangkok, Thailand (UTL)*

List of changes :

- Adding Greatek and UTL as alternate assembly site,
- Wire material change from Gold to Copper
- Standardize Moisture Sensitivity Level from MSL1,2,3 to MSL3.

This notice is to inform you that Renesas will begin using Copper Wire bond material at Greatek and UTL facilities for the Listed Renesas Thin Shrink Small Outlined Package (TSSOP) products. The Copper bond wire is an alternate to the gold bond wire currently used for assembly of the listed products.

Reason for Change:

Greatek and UTL are existing assembly supplier for Renesas. Adding assembly site will expand current capabilities and capacities to optimize Renesas's ability to meet customer's delivery requirements. Both Greatek and UTL facility are ISO9001:2015 and IATF 16949:2016 certified. Greatek and UTL are existing assembly supplier for high volume assembly of TSSOP packaged products with both gold and copper bond wire material.

Impact on fit, form, function, quality & reliability:

The assembly qualification plan is designed using JEDEC and other applicable industry standards to confirm there is no impact to form, fit, function or interchangeability of the product. A summary of the qualification plan and results is included for reference. Please refer Appendix B. The remainder of the manufacturing operations (wafer fabrication, package level electrical test, etc) will continue to be processed to previously established manufacturing flow.

Products assembled with Copper bond wire are classified as Moisture Sensitivity Level Three (MSL3). As such, the affected devices will be packed, labeled and shipped as MSL3 upon implementation of the changes outlined in the PCN.

Product Identification:

Product affected by this change is identifiable via Renesas's internal traceability system. In addition, product assembled at Greatek and UTL may also be identified by the assembly site code (country of assembly) when marked on the devices. The site code for product assembled at

#	Assembly Site	Site Code	Remarks
1	Greatek	K	For Copper wire products
2	UTL	T	For Copper wire products

Customers may expect to receive product assembled using gold bond wire from the current facilities or copper bond wire from Greatek and UTL facilities until the existing inventory is depleted or earlier with customer's approval.

Qualification status: Completed, see attached

Sample availability: 11/21/2022

Device material declaration: Available upon request

Note : Sample is available November 21, 2022 onwards, and subject to availability. Customer may expect 1 – 2 months for sample replenishment.

Questions or requests pertaining to this change notice, including additional data or samples, must be sent to Renesas within 30 days of the publication date.

For additional information regarding this notice, please contact your regional change coordinator (below)			
Americas: PCN-US@RENESAS.COM	Europe: PCN-EU@RENESAS.COM	Japan: PCN-JP@RENESAS.COM	Asia Pac: PCN-APAC@RENESAS.COM

Appendix A : Affected Products

Table 1 – Adding Greatek and UTL as alternate assembly site , wire material change from Gold to Copper and Moisture Sensitivity Level change from MSL1,2,3 to MSL3.

Affected Product List

ICL3221CAZ	ICL3221CVZ-TS2705	ICL3232CBNZ-T	ICL3232IBNZ-T	ICL3243ECAZ-T
ICL3221CAZ-T	ICL3222CVZ	ICL3232CPZ	ICL3232IBNZ-T7A	ICL3243ECVZ
ICL3221CVZ	ICL3222CVZ-T	ICL3232CVZ	ICL3232IVZ	ICL3243ECVZ-T
ICL3221CVZ-T	ICL3222CVZ-TS2705	ICL3232CVZ-T	ICL3232IVZ-T	ICL3243EIAZ
ICL3221ECAZ	ICL3222ECAZ	ICL3232ECAZ	ICL3232IVZ-T7A	ICL3243EIAZ-T
ICL3221ECAZ-T	ICL3222ECAZ-T	ICL3232ECAZ-T	ICL3232CVZ-TS2705	ICL3243EIVZ
ICL3221ECVZ	ICL3222ECVZ	ICL3232ECBNZ	ICL3232ECBZ	ICL3243EIVZ-T
ICL3221ECVZ-T	ICL3222ECVZ-T	ICL3232ECBNZ-T	ICL3232ECBZ-T	ISL4243EIRZ
ICL3221EIAZ	ICL3222EIAZ	ICL3232ECBNZ-TS2800	ICL3232EIAZ-TS2709	ISL4243EIRZ-T
ICL3221EIAZ-T	ICL3222EIAZ-T	ICL3232ECV-16Z	ICL3241ECAZ	ICL3243EIVZ-T7A
ICL3221EIAZ-T7A	ICL3222EIVZ	ICL3232ECV-16Z-T	ICL3241ECAZ-T	ISL4243EIRZ-TS2568
ICL3221EIVZ	ICL3222EIVZ-T	ICL3232ECV-16Z-T7A	ICL3241EIAZ	ISL4243EIRZ-TS2705
ICL3221EIVZ-T	ICL3223EIVZ	ICL3232ECVZ-TR6013	ICL3241EIAZ-T	ISL43141IBZ
ICL3221EIVZ-T7A	ICL3223EIVZ-T	ICL3232EIAZ	ICL3241EIVZ	ISL43141IBZ-T
ICL3221IAZ	ICL3223EIVZ-T7A	ICL3232EIAZ-T	ICL3241EIVZ-T	ISL43141IVZ
ICL3221IAZ-T	ICL3223IAZ	ICL3232EIBNZ	ISL4241EIRZ	ISL43141IVZ-T
ICL3221IAZ-T7A	ICL3223IAZ-T	ICL3232EIBNZ-T	ISL4241EIRZ-T	ISL84522IBZ
ISL4221EIRZ	ICL3223IVZ	ICL3232EIV-16Z	ICL3243CBZ	ISL84522IBZ-T
ISL4221EIRZ-T	ICL3223IVZ-T	ICL3232EIV-16Z-T	ICL3243CBZ-T	ISL84522IVZ
ICL3221CAZ-TS2705	ICL3232CBNZ	ICL3232IBNZ	ICL3243ECAZ	ISL84522IVZ-T

Appendix B - Qualification Results (see attached)

Test Description	Condition	ICL3243ECVZ 28 Leads, TSSOP Package Greatek assembled	ICL3243ECVZ 28 Leads, TSSOP Package UTL assembled
Moisture Sensitivity Level	Level 3	N=88 Acc = 0 L3 Pb-Free	N=88 Acc = 0 L3 Pb-Free
Hot Temperature Operating Life (HTOL) +125°C	1000 hrs	N=240 Acc = 0 Pb-Free	N=240 Acc = 0 Pb-Free
Biased Highly Accelerated Stress Test (bHAST) +130°C ; 85% RH	96 hours	N=240 Acc = 0 L3 Pb-Free	N=240 Acc = 0 L3 Pb-Free
Unbiased Highly Accelerated Stress Test (uHAST) +130°C ; 85% RH	96 hours	N=255 Acc = 0 L3 Pb-Free	N=255 Acc = 0 L3 Pb-Free
Temperature Cycle (TCT) -65°C / +150°C	200 cycles	N=255 Acc = 0 L3 Pb-Free	N=255 Acc = 0 L3 Pb-Free
	500 cycles	N=240 Acc = 0 L3 Pb-Free	N=240 Acc = 0 L3 Pb-Free
Hot Temperature Storage (HTS) +150°C	500 hours	N=240 Acc = 0 Pb-Free	N=240 Acc = 0 Pb-Free
	1000 hours	N=240 Acc = 0 Pb-Free	N=240 Acc = 0 Pb-Free

 Pass Qualification

 Qualified by Extension