

## Product Change Notice (PCN)

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

**Publication Date :** 9/21/2022

**Revision A :** 10/06/2022

**Effective Date :** 12/20/2022

### Revision Description:

Initial Release

#### Revision A :

1. Minor document amendment : Re-arrange Appendix A - Affected Product List to Table 1 and Table 2.
2. PCN22028A will replace PCN22028 previously published on 09/21/2022. There is no change to effective date because there is no change to the effective date.

### 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 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: <a href="mailto:PCN-US@RENEASAS.COM">PCN-US@RENEASAS.COM</a>                                    | Europe: <a href="mailto:PCN-EU@RENEASAS.COM">PCN-EU@RENEASAS.COM</a> | Japan: <a href="mailto:PCN-JP@RENEASAS.COM">PCN-JP@RENEASAS.COM</a> | Asia Pac: <a href="mailto:PCN-APAC@RENEASAS.COM">PCN-APAC@RENEASAS.COM</a> |

**Appendix A : Affected Products (Update Affected Product List)**

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

**Affected Product List (MSL 1 change to MSL 3)**

|               |                   |                    |                   |
|---------------|-------------------|--------------------|-------------------|
| ICL3221CVZ    | ICL3221EIVZ-T7A   | ICL3232ECV-16Z-T7A | ICL3232IVZ-T7A    |
| ICL3221CVZ-T  | ICL3221CVZ-TS2705 | ICL3232ECVZ-TR6013 | ICL3232CVZ-TS2705 |
| ICL3221ECVZ   | ICL3232CVZ        | ICL3232EIV-16Z     | ISL43141IVZ       |
| ICL3221ECVZ-T | ICL3232CVZ-T      | ICL3232EIV-16Z-T   | ISL43141IVZ-T     |
| ICL3221EIVZ   | ICL3232ECV-16Z    | ICL3232IVZ         | ISL84522IVZ       |
| ICL3221EIVZ-T | ICL3232ECV-16Z-T  | ICL3232IVZ-T       | ISL84522IVZ-T     |

**Table 2** – Adding Greatek and UTL as alternate assembly site , wire material change from Gold to Copper and Moisture Sensitivity Level remains as MSL 3 (No change)

**Affected Product List (Remains as MSL 3)**

|                   |                 |               |                 |
|-------------------|-----------------|---------------|-----------------|
| ICL3222CVZ        | ICL3222EIVZ-T   | ICL3241EIVZ   | ICL3243EIVZ-T7A |
| ICL3222CVZ-T      | ICL3223EIVZ     | ICL3241EIVZ-T |                 |
| ICL3222CVZ-TS2705 | ICL3223EIVZ-T   | ICL3243ECVZ   |                 |
| ICL3222ECVZ       | ICL3223EIVZ-T7A | ICL3243ECVZ-T |                 |
| ICL3222ECVZ-T     | ICL3223IVZ      | ICL3243EIVZ   |                 |
| ICL3222EIVZ       | ICL3223IVZ-T    | ICL3243EIVZ-T |                 |

Appendix B - Qualification Results (see attached)

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

 Pass Qualification

 Qualified by Extension