

## Process Change Notification

This is to inform you that a design and/or process change will be implemented to the affected product(s) listed below. This notification requires your concurrence within 45 days upon receipt of this notification.

The plan change/s will take effect 90 calendar days from the date of this notification.

Please work with your local Taiwan Semiconductor Sales Representative to manage your inventory of unchanged/ existing product if your evaluation of this change will require more than 90 calendar days.

Please contact your local Taiwan Semiconductor Field Quality Service or Customer Quality Engineer within 45 days of receipt of this notification if you require any additional data or samples.

**Change No: PCN25012 rev0**

**Title:** Additional wafer source for TS4148 RCG

**Issue Date:** 2025/8/25

If you have any questions concerning this change, please contact:

**Change Coordinator**

Name :

E-Mail: |

Phone:

**PCN Originator**

Name :

E-Mail: |

Phone: |

**Reliability Engineer**

Name :

E-Mail: |

Phone:

**PCN Type:**

Additional wafer source for TS4148 RCG

**Effectivity:**

Expected 1st device shipment date: 2025/11/25 or earlier if approved by customer

**Product Category (Description):**

TS4148 RCG

**Description of Change:**

This PCN is being issued to inform TSC customers of qualifying additional wafer supplier for TS4148 RCG. This will ensure wafer supply and production delivery requirement with similar or comparable wafer performance. There will be no other changes on the product BOM and product outline.

| Item                   | Current         | Additional      | Remarks           |
|------------------------|-----------------|-----------------|-------------------|
| Wafer Source           | Supplier P      | Supplier R      | Additional source |
| Wafer diameter         | 5"              | 6"              | Different         |
| Die size               | 240±20um        | 320±20um        | Different         |
| Die thickness          | 120±30um        | 170±20          | Different         |
| Die passivation        | SiO2            | SiO2            | No change         |
| Top metal / back metal | Ni, Ag / Ni, Ag | Ni, Ag / Ni, Ag | No change         |

Remark: Detailed information in the comparison report will be provided upon customer request.

**Qualification and Reliability Result:**

| NO. | Test                                     | Test Conditions/ Standard                                                   | No. of Lots | Sample Size | Result |
|-----|------------------------------------------|-----------------------------------------------------------------------------|-------------|-------------|--------|
| 1   | Preconditioning                          | JESD22A-113<br>1.Baking 125°C 24H<br>2.85°C 85%RH 168H<br>3.Reflow 260°C 3× | 3           | 320         | PASS   |
| 2   | High Temperature Reverse Bias            | JESD22-A108, MIL-STD-750 M1038<br>Tj=Tjmax, at least 80% rated VR, 500hrs   | 3           | 80          | PASS   |
| 3   | Temperature Cycling                      | JESD22-A104 -55(-10/+0)°C/15min to 150(+15/-0)°C/15min, 500 cycles          | 3           | 80          | PASS   |
| 4   | Unbiased Highly Accelerated Stress Test  | JESD22-A118, Ta=130°C, 85%RH, 96hrs                                         | 3           | 80          | PASS   |
| 5   | High Temperature & Humidity Reverse Bias | JESD22-A101, 85°C/85% RH; Vin=80% rated V (100V max), 1000hrs               | 3           | 80          | PASS   |

| NO. | Test                               | Test Conditions/ Standard                                                                                                                         | No. of Lots | Sample Size | Result |
|-----|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------|
| 6   | Intermittent Operational Life      | JESD22A122, Ta=25°C; ΔTj=100°C; 2.0 min on/off, 7500 cycles                                                                                       | 3           | 80          | PASS   |
| 7   | High temperature storage life test | JESD22-A103, 150°C, 500hrs                                                                                                                        | 3           | 80          | PASS   |
| 8   | Destructive Physical Analysis      | AEC-Q101-004 TC passed choose 1 lot 2pcs HAST or H3TRB passed choose 1lot 2 pcs;Visual inspection,SAM,X-ray,de-capsulation than Visual inspection | 3           | 4           | PASS   |
| 9   | Parametric Verification            | Product Datasheet, Test over the part temp range                                                                                                  | 1           | 10          | PASS   |

**Conclusion:** The new supplier successfully passed consumer product reliability requirement.

**Identification and Traceability:**

| Item         | Identification                                                              |
|--------------|-----------------------------------------------------------------------------|
| Traceability | The wafer source traceability is done through lot number and product label. |

**Effect of Change:**

There is no impact in product form, fit and function.

**List of Affected Devices:**

| Family                        | Package         | TSC P/N    |
|-------------------------------|-----------------|------------|
| Surface Mount Switching Diode | 0603 (Ceramics) | TS4148 RCG |