

## Process Change Notification

This is to inform you that a design and/or process change will be implemented to the affected product(s) and this notification is for your information and concurrence. This change is planned to take effect in 90 calendar days from the date of this notification.

Please work with your local Taiwan Semiconductor Sales Representative to manage your inventory of unchanged 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.

**PCN No: PCN24006 rev0**

**Title:** Changing supplier and product datasheet revision for SOT-23

**Issue Date: 2024/7/9**

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

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**PCN Type:**

Changing supplier and product datasheet revision for SOT-23

**Effectivity:**

Expected 1st device shipment date: 2024/10/7

Last Order Date: 2025/1/6

Last Delivery Date: 2026/1/6

**Product Category (Description):**

Affected parts of SOT-23 provided by Taiwan Semiconductor Co. Ltd.

**Description of Change:**

This PCN is being issued to inform TSC customers of qualifying a new supplier for the affected SOT-23 devices.

The product will be transferred to the new outsourcing assembly and test site to ensure continuity of supply and guarantee commitment on customer service and satisfaction.

There will be differences on the product BOM and product electrical specifications.

Pls see below BOM comparison table between the current and new supplier.

Detailed changes on the product datasheet are provided as addendum to this letter of notification.

**Changes Comparison:**

Item	From	To	Remarks
Supplier Code (factory code)	3467(B)	3250(Q)	New Source
Wafer Supplier	F / R	H/CW/U	Different wafer source
Lead frame	A194	A194	Same material, different supplier
Epoxy	Ag	Ag	Same
Wire bond	Cu Wire	Cu Wire	Same material, different supplier
Compound	EME-G630	EMG-600-2	Different
Plating	Pure Sn	Pure Sn	Same material, different supplier
Packing	Dry Pack	Non Dry Pack	New Supplier is qualified at MSL 1
MSL Level	3	1	Different

**Packing information:**

Item	Packing Code	Reel Size	Reel (pcs)	Box (pcs)	Carton (pcs)	Carton Size (mm)
From	RFG	7" Plastic	3,000	12,000	144,000	575x358x208
To	RFG	7" Plastic	3,000	30,000	120,000	510x305x235

**Product Datasheet Revisions:**

Item	From	To
Datasheet	<ol style="list-style-type: none"> <li>Old POD drawing</li> <li>Parametric specification, details see comparison report</li> </ol>	<ol style="list-style-type: none"> <li>Modify POD drawing to align with JEDEC standard</li> <li>Parametric specification, details see comparison report</li> </ol>

## Qualification and Reliability Result:

NO.	Test	Test Conditions/ Standard	No. of Lots	Sample Size	Result
1	Preconditioning	JESD22A-113 1.Baking 125°C 24H 2.85°C 85%RH 168H 3.Reflow 260°C 3×	5	77	PASS
2	High Temperature Reverse Bias	JESD22-A108, MIL-STD-750 M1038 Tj=Tjmax, at least 80% rated VDS, 1000Hours	5	77	PASS
3	Temperature Cycling	JESD22-A104 -55(-10/+0)°C/15min to 150(+15/-0)°C/15min, 1000 cycles	5	77	PASS
4	Unbiased Highly Accelerated Stress Test	JESD22-A118, Ta=130°C, 85%RH, 96hrs	5	77	PASS
5	Highly Accelerated Stress Test	JESD22-A110, 130°C/85% RH; V=80% VR; 42V max, 192 Hours	5	77	PASS
6	Intermittent Operational Life	JESD22A122, Ta=25°C; ΔTj=100°C; 2.0 min on/off, 15000 cycles	5	77	PASS
7	High Temperature Storage Gate Bias	JESD22-A103 150°C (+10, -0) , 1000Hrs	5	77	PASS
8	High Temperature Gate Bias	JESD22-A108 150°C; V=100% rated Vgs, 1000Hrs	5	77	PASS
9	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	5	4	PASS
10	Resistance to Solder Heat	JESD22-A111 SMD Pb free: 260(+5/- 0)°C , 10+2-0 sec	5	30	PASS
11	Thermal Resistance	JESD24, per product datasheet	1	5	PASS
12	Solderability	J-STD-002 245 °C ± 5 °C (Pb-free) 5sec	5	10	PASS
13	Wire Bond Shear	MIL-STD-750 per assembly spec	5	10	PASS
14	Wire Bond Pull	MIL-STD-750 per assembly spec	5	10	PASS
15	Die Shear	MIL-STD-750-2 per assembly spec	5	5	PASS
16	Parametric Verification	Product Datasheet, Test over the part temp range	5	10	PASS
17	ESD characterization	HBM, JS-001per product spec	5	30	Cap: 150V~450V
		CDM, JS-002 per product spec	5	30	Cap: 1KV

### Note:

The new supplier devices successfully passed consumer grade qualification per JESD22 or AEC-Q101.

**Identification and Traceability:**

<b>Item</b>	<b>Identification</b>
Traceability	Lot number on the label

**Effect of Change:**

There is no impact in product electrical specification, functionality, quality and reliability. This change will guarantee Taiwan Semiconductor commitment on customer service and satisfaction through continuous improvement.

**List of Affected Devices:**

<b>Family</b>	<b>Package</b>	<b>TSC P/N</b>
N-Channel Power MOSFET	SOT-23	TSM2302CX RFG
P-Channel Power MOSFET	SOT-23	TSM2305CX RFG
N-Channel Power MOSFET	SOT-23	TSM2306CX RFG
P-Channel Power MOSFET	SOT-23	TSM2307CX RFG
N-Channel Power MOSFET	SOT-23	TSM2308CX RFG
N-Channel Power MOSFET	SOT-23	TSM2312CX RFG
N-Channel Power MOSFET	SOT-23	TSM2314CX RFG
N-Channel Power MOSFET	SOT-23	TSM2318CX RFG
P-Channel Power MOSFET	SOT-23	TSM2323CX RFG
N-Channel Power MOSFET	SOT-23	TSM2328CX RFG