

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: PCN25006 rev0

Title: Change of Epoxy, Molding compound and Bonding Wire

Issue Date: 2025/4/17

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

PCN Coordinator

Name : Nica Maderazo

E-Mail : nica.maderazo@ts.com.tw

Phone: +886-2-8913-1588 Ext: 2204

PCN Originator

Name : Melinda Luo

E-Mail : Melinda_luo@mail.tew.com.cn

Phone: 0086-22-59816699 Ext: 2032

Reliability Engineer

Name : Aiping Zhang

E-Mail : aiping@mail.tew.com.cn

Phone: 0086-22-59816699 Ext: 2034

PCN Type:

Change of Epoxy, Molding compound and Bonding Wire

Effectivity:

Expected 1st device shipment date: 2025/7/16 or earlier if approved by customer

Last Order Date: 2025/10/14

Last Delivery Date: 2026/10/9

Product Category (Description):

IC parts of SOP-8 and SOT-23 packages. Details, please see part number list.

Description of Change:

Taiwan Semiconductor Company successfully qualified the new epoxy, molding compound and wire for affected parts of SOP-8 and SOT-23. This change is to ensure robust quality performance of these parts and supply sustainability.

BOM comparison:

Item	Before	After	Remarks
Die attach material	Silver Epoxy	Silver Epoxy	Different material composition percentage
Molding compound	Supplier H/ Green Compound	Supplier S / Green Compound	Both green compound but different supplier
Wire	Cu 1mil PdCu 1mil	AuPdCu 1mil	Different material composition

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

Qualification and Reliability Result:

NO.	Test	Specification	Condition	Readpoint	Result (Rej/SS)
1	Preconditioning	JESD22A-113	1.Baking 125°C 24H 2.30°C 60%RH 192H 3.Reflow 260°C 3×	Soak: MSL3:192Hrs IR Reflow:3times	0/240*6lots
2	Temperature Cycling	JESD22-A104	-65°C/15min to 150 °C/15min	1000cycles	0/80*6lots
3	Unbiased Highly Accelerated Stress Test	JESD22-A118	Ta=130°C, 85%RH,	96hrs	0/80*6lots
4	Highly Accelerated Stress Test	JESD22-A110	130°C/85% RH; V=80% VR; 42V max	192 Hours	0/80*6lots
5	High Temperature Storage Life	JESD22-A103	150°C	1000Hrs	0/80*6lots
6	High Temperature Operating Life	JESD22-A108	125°C; Vcc≥Vcc max,	1000hrs	0/80*6lots
7	Early Life Failure Rate	JESD22-A108	125°C; Vcc≥Vcc max,	48hrs	0/100*6lots
8	Wire Bond Shear	JESD22 B116	Per assembly spec CPK≥1.33		0/30*6lots

NO.	Test	Specification	Condition	Readpoint	Result (Rej/SS)
9	Wire Bond Pull	MIL 883	Per assembly spec CPK $\geq$ 1.33		0/30*6lots
10	Solderability	J-STD-002 JESD22-B102	260°C	5secs	0/15*6lots
11	Electrical Distribution	AEC-Q100-009	Per product spec		0/30*6lots

Conclusion:

1. The change device successfully passed consumer product reliability requirement.
2. Electrical performance is comparable before and after change and can satisfy TSC datasheet specification. Data is available upon customer request.

Identification and Traceability:

Item	Identification
Traceability	Product date code

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:

Family	Package	TSC P/N
Voltage Dual Comparators	SOP-8	TS393CS RLG
Dual Operational Amplifiers	SOP-8	TS358CS RLG
Voltage Regulator	SOP-8	TS2951CS30 RLG
Voltage Regulator	SOP-8	TS2951CS33 RLG
Voltage Regulator	SOP-8	TS2951CS50 RLG
Inverting Regulator	SOP-8	TS34063CS RLG
adjustable shunt regulator	SOT-23	TS432ACX RFG
adjustable shunt regulator	SOT-23	TS432BCX RFG
Voltage Regulator	SOT-23	TS9011DCX RFG
Voltage Regulator	SOT-23	TS9011KCX RFG
Voltage Regulator	SOT-23	TS9011SCX RFG
Voltage Regulator	SOT-23	TS5204CX33 RFG
Voltage Regulator	SOT-23	TS5204CX50 RFG

Appendix: Wire information

Package	TSC P/N	Before	After
		Wire	Wire
SOP-8	TS393CS	PdCu 1mil	AuPdCu 1mil
SOP-8	TS2951CS30	PdCu 1mil	AuPdCu 1mil
SOP-8	TS2951CS33	PdCu 1mil	AuPdCu 1mil
SOP-8	TS2951CS50	PdCu 1mil	AuPdCu 1mil
SOP-8	TS358CS	Cu 1mil	AuPdCu 1mil
SOP-8	TS34063CS	Cu 1mil	AuPdCu 1mil
SOT-23	TS432ACX	Cu 1mil	AuPdCu 1mil
SOT-23	TS432BCX	Cu 1mil	AuPdCu 1mil
SOT-23	TS9011DCX	Cu 1mil	AuPdCu 1mil
SOT-23	TS9011KCX	Cu 1mil	AuPdCu 1mil
SOT-23	TS9011SCX	Cu 1mil	AuPdCu 1mil
SOT-23	TS5204CX33	Cu 1mil	AuPdCu 1mil
SOT-23	TS5204CX50	Cu 1mil	AuPdCu 1mil