

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.

PCN No: PCN25008 rev0

Title: NPN Planar Transistor SOT-223 Wafer Diameter and Mold Compound Change

Issue Date: 2025/4/29

PCN Type:

Change of wafer diameter, change of mold compound

Effectivity:

Expected 1st device shipment date: 2025/7/28 or earlier if approved by customer

Product Category (Description):

NPN Planar transistor in SOT-223

Description of Change:

Taiwan Semiconductor Company has successfully qualified the 6inch wafer for selected NPN Planar transistor SOT-223 parts. The replaced 5inch wafer will end of life. This change will secure the production delivery requirement with comparable wafer performance.

Full electrical characterization and reliability testing has been completed on representative part numbers to ensure no change to device functionality and electrical performance.

Change details

Item	Current	New	Remarks
Wafer Diameter	5 inch	6 inch	Different
Mold Compound	Supplier H	Supplier S	Different. But both green mold compound

Qualification and Reliability Result:

NO.	Test	Specification	Condition	Readpoint	Result (Rej/SS)
1	Preconditioning	J-STD-020	MSL-3 (3x reflow at 260degC)	--	--
2	TC	JESD22-A104	-65°C/15min to 150°C/15min,	1000cycles	0/231
3	Unbiased HAST	JESD22-A118	130°C/85% RH; unbiased	96hrs	0/231
4	HAST	JESD22-A110	130°C/85% RH; Vr=-42V	96hrs	0/231
5	RSH	JESD22-B106	SMD (Pb free): 260°C; 10 sec	--	0/30
6	HTSL	JESD22-A103	150°C	500hrs	0/231

NO.	Test	Specification	Condition	Readpoint	Result (Rej/SS)
7	HTRB	MIL-STD-750-1	150°C; V=80% rated V	1000hrs	0/231
8	IOL	MIL-STD-750	Ta=25°C; ΔTj=100°C; 2.0 min on/off	1500cyc	0/231
9	Wire Bond Pull	MIL-STD-750-2	Per assembly spec	--	0/25
10	Wire Bond Shear	AECQ101-003	Per assembly spec	--	0/25
11	Die Shear	MIL-STD-750-2	Per assembly spec	--	0/25
12	ESD-HBM	AECQ101-001	Per product datasheet	--	0/10
13	ESD-CDM	AECQ101-005	Per product datasheet	--	0/10
14	PV	Per product datasheet	Test over the part temp range	--	0/90

Conclusion:

1. The change device successfully passed consumer product reliability requirement per JESD22.
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 on 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
NPN Planar	SOT-223	TSC873CW
NPN Planar	SOT-223	TSC966CW