

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: PCN23005 rev0

Title: Additional wafer supplier for TSS0230LU

Issue Date: 2023/4/28

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

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PCN Type:

Additional wafer supplier

Effectivity:

Expected 1st device shipment date: 2023/7/27

Product Category (Description):

Part Number TSS0230LU assembled in package 0603-B provided by Taiwan Semiconductor Co. Ltd.

Description of Change:

Taiwan Semiconductor Company supplier (Vendor code: 2273, F) is qualifying additional wafer supplier for TSS0230LU. 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 I	N/A
Location	Japan	Taiwan	N/A
Wafer diameter	6"	6"	Same
Die size	0.37mm x 0.37mm	0.31mm x 0.31mm	Different
Die passivation	PSG	SiO2	Different
Top metal back metal	Al / Ti-Ni-Ag	Al / Ti-Ni-Ag	Same

Qualification and Reliability Result:

1. Electrical test comparison

TSS0230LU	ITEM	VR(V)	VF(mV)	IR(uA)
	TEST Condition	IR=5mA	IF=200mA	VR=10V
	SPEC.	> 30	< 500	<30
Current	MIN	49.076	416.000	2.431
	MAX	51.121	423.000	2.771
	AVG.	50.466	420.033	2.617
	CPK	11.718	14.250	108.786
Additional	MIN	50.740	367.000	6.174
	MAX	52.906	377.000	7.981
	AVG.	52.054	370.433	6.949
	CPK	15.060	17.100	17.009

Conclusion: Additional wafer supplier has similar electrical performance compared with existing supplier.

2. Device/Package Qualification

NO.	Test	Test Conditions	No. of Lots	Sample Size	Result
1	Pre-conditioning	J-STD-020 MSL-1 (3x reflow at 260°C)	3	3*231	Passed
2	Temperature Cycling	JESD22-A104 -55(-10/+0)°C/15min to 150(+15/-0) °C/15min, 1000cycles	3	3*77	Passed
3	Unbiased Highly Accelerated Stress Test	JESD22-A118 Ta=130°C, 85%RH, 96hrs	3	3*77	Passed

4	High Humidity High Temp. Reverse Bias	JESD22-A101, Ta=85°C/85%RH 80% rated Vr up to 100V, 1000 hrs	3	3*77	Passed
5	Resistance to solder heat	JESD22-A111 SMD (Pb free): 260°C; 10 sec	3	3*10	Passed
6	Intermittent Operating Life	MIL-STD-750 Ta=25°C; ΔTj=100°C; 2.0 min on/off,7500cycles	3	3*77	Passed
7	ESD-HBM	JS-001 per product spec	3	3*30	CAP: 8KV
8	ESD-CDM	JS-002 per product spec	3	3*30	CAP: 1KV
9	Destructive Physical Analysis	AEC-Q101-004, Post-TC, Post- HAST	3	3*4	Passed
10	Wire Bond Pull	MIL-STD-750-2 per assembly spec	1	1*30	Passed
11	Die Shear	MIL-STD-750-2 per assembly spec	1	1*5	Passed
12	Thermal Resistance	JESD24 per product datasheet	1	1*5	Passed

Conclusion: Affected parts using additional wafer can satisfy the product reliability requirement.

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.

Identification and Traceability:

Item	Identification
Traceability	Product date code

List of Affected Devices:

Family	Package	P/N
Surface Mount Schottky Barrier Diode	0603-B	TSS0230LU