

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: PCN22005

Title: SSD products bonding wire and wafer diameter change

Issue Date: 2022/5/3

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

PCN Coordinator

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PCN Type: Change of bonding wire and wafer diameter

Effectivity:

Expected 1st device shipment date: 2022/8/1
Last order date: 2022/10/30
Last delivery date: 2023/10/30

Product Category (Description):

Identified part numbers assembled in SOD-323/123/323F/523F/723F, SOT-363 packages. The full lists of products affected are listed in the "List of Affected Devices" section.

Package	Family
SOD-323F	SKY, SWCH, ZENER
SOD-523F	SKY, SWCH, ZENER
SOD-723F	SKY
SOT-363	SKY
SOD-323	SKY, SWCH
SOD-123	ZENER

Description of Change:

This PCN is to inform customers regarding the initiated changes by TSC supplier for devices manufactured in SOD-323/123/323F/523F/723F, SOT-363 to ensure the continuity of supply and guarantee commitment on customer service and satisfaction.

Details of changes on the each package are enclosed in this notification letter. Include the electrical test data as coincide for comparison report

Reliability and electrical tests has been completed on representative part numbers to ensure no change to device functionality or electrical specifications in the datasheet. Refer to reliability report below.

Change Comparison

Item	From	To	Remarks
Wafer Diameter	5"	6"	Different
Bonding wire	Au	Cu	Different

Qualification and Reliability Result:

NO.	Test	Test Conditions/ Standard	No. of Lots	Sample Size	Result
1	Pre-conditioning	JESD22-A113, J-STD-020 Temp. Cycle: -40 °C ~ +60 °C, 5 cycles Bake: 125 °C for 24 hrs. Soak: > MSL1: 85 °C RH: 85 %, 168 Hrs IR Reflow Temperature: 260 (+5/-0)°C @ 3x cycles	3 lots	308	PASS
2	Temperature Cycling	JESD22-A104 '-55(-10/+0)°C/15min to 150(+15/-0)°C/15min, 1000 cycles	3 lots	77	PASS

3	TC Delamination Test (TCDT)	JESD22-A104, AEC-Q101 Appendix 6, J-STD-035 100 % C-SAM after TC, If delam: Decap, inspect + wire pull on all wires from top 5 delam units. If no delam: no action needed	3 lots	77	PASS
4	HAST	JESD22-A110, Ta=130°C, 85%RH 80% rated VR up to 5.6Vmax, 96Hours	3 lots	77	PASS
5	Intermittent Operational Life	Ta=25°C, ΔTj >= 100 °C, SMD 2 mins ON + 2 mins OFF , TO92 3.5 mins ON + 3.5 mins OFF 6000 cycle	3 lots	77	PASS
6	Destructive Physical Analysis (DPA)	JESD22-A104, JESD22-B116 TC passed choose 2pcs of the 1 lot HAST or H3TRB passed choose 2 pcs of the 1 lot: Visual inspection, SAM, X-ray, decapsulation than Visual inspection	3 lots	4	PASS
7	Resistance to Solder Heat	JESD22-A111 SMD, B-106 PTH Pb free: 260(+5/-0)°C , 10 sec (+2/-0)	3 lots	30	PASS
8	Wire Bond Pull	MIL-STD-750 Method 2037 Pre and Post process change comparison to evaluate process change robustness.	3 lots	10 bonds ≥ 5 parts	PASS
9	Bond Shear	AEC-Q101-003 Cpk: JEDEC: ≥ 1.33	3 lots	10 bonds ≥ 5 parts	PASS

Note: Representative qualification report based on part number series

Conclusion: All representative part numbers for the change passed the qualification and reliability per JESD-22 and JESD-47 requirement

Effect of Change:

There is no impact on the form, fit, function, reliability or process ability. This change will guarantee Taiwan Semiconductor commitment on customer service and satisfaction through continuous improvement.

List of Affected Devices:

Package	Part Number	Package	Part Number	Package	Part Number
SOD-323F	1N4148WS	SOD-323F	BZT52B62S	SOD-323F	UDZS5V1B
SOD-323F	1N4448WS	SOD-323F	BZT52B68S	SOD-323F	UDZS5V6B
SOD-323F	1N914BWS	SOD-323F	BZT52B75S	SOD-323F	UDZS6V2B
SOD-323F	1SS355	SOD-323F	BZT52C2V4S	SOD-323F	UDZS6V8B
SOD-323F	BAS316WS	SOD-323F	BZT52C2V7S	SOD-323F	UDZS7V5B
SOD-323F	BAV19WS	SOD-323F	BZT52C3V0S	SOD-323F	UDZS8V2B
SOD-323F	BAV20WS	SOD-323F	BZT52C3V3S	SOD-323F	UDZS9V1B
SOD-323F	BAV21WS	SOD-323F	BZT52C3V6S	SOD-323F	UDZS10B
SOD-323F	BAT42WS	SOD-323F	BZT52C3V9S	SOD-323F	UDZS11B
SOD-323F	BAT43WS	SOD-323F	BZT52C4V3S	SOD-323F	UDZS12B
SOD-323F	BAS316WS	SOD-323F	BZT52C4V7S	SOD-323F	UDZS13B
SOD-323F	BZT52B2V4S	SOD-323F	BZT52C5V1S	SOD-323F	UDZS15B
SOD-323F	BZT52B2V7S	SOD-323F	BZT52C5V6S	SOD-323F	UDZS16B
SOD-323F	BZT52B3V0S	SOD-323F	BZT52C6V2S	SOD-323F	UDZS18B
SOD-323F	BZT52B3V3S	SOD-323F	BZT52C6V8S	SOD-323F	UDZS20B
SOD-323F	BZT52B3V6S	SOD-323F	BZT52C7V5S	SOD-323F	UDZS22B
SOD-323F	BZT52B3V9S	SOD-323F	BZT52C8V2S	SOD-323F	UDZS24B
SOD-323F	BZT52B4V3S	SOD-323F	BZT52C9V1S	SOD-323F	UDZS27B
SOD-323F	BZT52B4V7S	SOD-323F	BZT52C10S	SOD-323F	UDZS30B
SOD-323F	BZT52B5V1S	SOD-323F	BZT52C11S	SOD-323F	UDZS33B
SOD-323F	BZT52B5V6S	SOD-323F	BZT52C12S	SOD-323F	UDZS36B
SOD-323F	BZT52B6V2S	SOD-323F	BZT52C13S	SOD-323F	M3Z2V4C
SOD-323F	BZT52B6V8S	SOD-323F	BZT52C15S	SOD-323F	M3Z36VC
SOD-323F	BZT52B7V5S	SOD-323F	BZT52C16S	SOD-323F	M3Z39VC
SOD-323F	BZT52B8V2S	SOD-323F	BZT52C18S	SOD-323F	M3Z75VC
SOD-323F	BZT52B9V1S	SOD-323F	BZT52C20S	SOD-323F	M3Z2V0C
SOD-323F	BZT52B10S	SOD-323F	BZT52C22S	SOD-323F	RB751V-40WS
SOD-323F	BZT52B11S	SOD-323F	BZT52C24S	SOD-323F	BAT54AW
SOD-323F	BZT52B12S	SOD-323F	BZT52C27S	SOD-523F	1SS400
SOD-323F	BZT52B13S	SOD-323F	BZT52C30S	SOD-523F	BZT52C2V7K
SOD-323F	BZT52B15S	SOD-323F	BZT52C33S	SOD-523F	BZT52C3V0K
SOD-323F	BZT52B16S	SOD-323F	BZT52C36S	SOD-523F	BZT52C3V3K
SOD-323F	BZT52B18S	SOD-323F	BZT52C39S	SOD-523F	BZT52C3V6K
SOD-323F	BZT52B20S	SOD-323F	BZT52C43S	SOD-523F	BZT52C3V9K
SOD-323F	BZT52B22S	SOD-323F	BZT52C47S	SOD-523F	BZT52C4V3K
SOD-323F	BZT52B24S	SOD-323F	BZT52C51S	SOD-523F	BZT52C4V7K
SOD-323F	BZT52B27S	SOD-323F	BZT52C56S	SOD-523F	BZT52C5V1K
SOD-323F	BZT52B30S	SOD-323F	BZT52C62S	SOD-523F	BZT52C5V6K
SOD-323F	BZT52B33S	SOD-323F	BZT52C68S	SOD-523F	BZT52C6V2K
SOD-323F	BZT52B36S	SOD-323F	BZT52C75S	SOD-523F	BZT52C6V8K
SOD-323F	BZT52B39S	SOD-323F	RB500V-40-UA	SOD-523F	BZT52C7V5K
SOD-323F	BZT52B43S	SOD-323F	UDZS3V6B	SOD-523F	BZT52C8V2K
SOD-323F	BZT52B47S	SOD-323F	UDZS3V9B	SOD-523F	BZT52C9V1K
SOD-323F	BZT52B51S	SOD-323F	UDZS4V3B	SOD-523F	BZT52C10K
SOD-323F	BZT52B56S	SOD-323F	UDZS4V7B	SOD-523F	BZT52C11K

Package	Part Number	Package	Part Number	Package	Part Number
SOD-523F	BZT52C12K	SOD-323F	M3Z5V6B	SOD-323F	M3Z11VC
SOD-523F	BZT52C13K	SOD-323F	M3Z6V2B	SOD-323F	M3Z12VC
SOD-523F	BZT52C15K	SOD-323F	M3Z6V8B	SOD-323F	M3Z13VC
SOD-523F	BZT52C16K	SOD-323F	M3Z7V5B	SOD-323F	M3Z15VC
SOD-523F	BZT52C18K	SOD-323F	M3Z8V2B	SOD-323F	M3Z16VC
SOD-523F	BZT52C20K	SOD-323F	M3Z9V1B	SOD-323F	M3Z18VC
SOD-523F	BZT52C22K	SOD-323F	M3Z10VB	SOD-323F	M3Z20VC
SOD-523F	BZT52C24K	SOD-323F	M3Z11VB	SOD-323F	M3Z22VC
SOD-523F	BZT52C27K	SOD-323F	M3Z12VB	SOD-323F	M3Z24VC
SOD-523F	BZT52C30K	SOD-323F	M3Z13VB	SOD-323F	M3Z27VC
SOD-523F	BZT52C33K	SOD-323F	M3Z15VB	SOD-323F	M3Z30VC
SOD-523F	BZT52C36K	SOD-323F	M3Z16VB	SOD-323F	M3Z33VC
SOD-523F	BZT52C39K	SOD-323F	M3Z18VB	SOD-323F	M3Z36VC
SOD-523F	BZT52C43K	SOD-323F	M3Z20VB	SOD-323F	M3Z39VC
SOD-523F	BZT52C47K	SOD-323F	M3Z22VB	SOD-323F	M3Z43VC
SOD-523F	BZT52C51K	SOD-323F	M3Z24VB	SOD-323F	M3Z47VC
SOD-523F	BZT52C56K	SOD-323F	M3Z27VB	SOD-323F	M3Z51VC
SOD-523F	BZT52C62K	SOD-323F	M3Z30VB	SOD-323F	M3Z56VC
SOD-523F	BZT52C68K	SOD-323F	M3Z33VB	SOD-323F	M3Z62VC
SOD-523F	BZT52C75K	SOD-323F	M3Z36VB	SOD-323F	M3Z68VC
SOD-523F	BZX584B2V4	SOD-323F	M3Z39VB	SOD-323F	M3Z75VC
SOD-523F	BZX584B75	SOD-323F	M3Z43VB	SOD-523F	BAT54M5
SOD-523F	RB520S-30	SOD-323F	M3Z47VB	SOD-523F	RB751M5-40
SOD-523F	RB521S-30	SOD-323F	M3Z51VB	SOD-323F	RB751V-40WS
SOD-523F	RB751M5-40	SOD-323F	M3Z56VB	SOD-523F	BZX584B2V4
SOD-723F	RB520G-30	SOD-323F	M3Z62VB	SOD-523F	BZX584B2V7
SOD-323	1N4148WS-G	SOD-323F	M3Z68VB	SOD-523F	BZX584B3V0
SOD-323	BAS316	SOD-323F	M3Z75VB	SOD-523F	BZX584B3V3
SOD-323	BAV19WS-G	SOD-323F	M3Z2V0C	SOD-523F	BZX584B3V6
SOD-323	BAV20WS-G	SOD-323F	M3Z2V2C	SOD-523F	BZX584B3V9
SOD-323	BAV21WS-G	SOD-323F	M3Z2V4C	SOD-523F	BZX584B4V3
SOD-323	RB751V-40	SOD-323F	M3Z2V7C	SOD-523F	BZX584B4V7
SOT-363	BAT54T	SOD-323F	M3Z3V0C	SOD-523F	BZX584B5V1
SOT-363	BAT54AD	SOD-323F	M3Z3V3C	SOD-523F	BZX584B5V6
SOT-363	BAT54SD	SOD-323F	M3Z3V6C	SOD-523F	BZX584B6V2
SOT-363	BAT54BR	SOD-323F	M3Z3V9C	SOD-523F	BZX584B6V8
SOD-323F	BAT54M3	SOD-323F	M3Z4V3C	SOD-523F	BZX584B7V5
SOD-323F	M3Z2V4B	SOD-323F	M3Z4V7C	SOD-523F	BZX584B8V2
SOD-323F	M3Z2V7B	SOD-323F	M3Z5V1C	SOD-523F	BZX584B9V1
SOD-323F	M3Z3V0B	SOD-323F	M3Z5V6C	SOD-523F	BZX584B10
SOD-323F	M3Z3V3B	SOD-323F	M3Z6V2C	SOD-523F	BZX584B11
SOD-323F	M3Z3V6B	SOD-323F	M3Z6V8C	SOD-523F	BZX584B12
SOD-323F	M3Z3V9B	SOD-323F	M3Z7V5C	SOD-523F	BZX584B13
SOD-323F	M3Z4V3B	SOD-323F	M3Z8V2C	SOD-523F	BZX584B15
SOD-323F	M3Z4V7B	SOD-323F	M3Z9V1C	SOD-523F	BZX584B16
SOD-323F	M3Z5V1B	SOD-323F	M3Z10VC	SOD-523F	BZX584B18

Package	Part Number	Package	Part Number	Package	Part Number
SOD-523F	BZX584B20	SOD-123	BZT52C2V4-G	SOD-123	BZT52C13-G
SOD-523F	BZX584B22	SOD-123	BZT52C2V7-G	SOD-123	BZT52C15-G
SOD-523F	BZX584B24	SOD-123	BZT52C3V0-G	SOD-123	BZT52C16-G
SOD-523F	BZX584B27	SOD-123	BZT52C3V3-G	SOD-123	BZT52C18-G
SOD-523F	BZX584B30	SOD-123	BZT52C3V6-G	SOD-123	BZT52C20-G
SOD-523F	BZX584B33	SOD-123	BZT52C3V9-G	SOD-123	BZT52C22-G
SOD-523F	BZX584B36	SOD-123	BZT52C4V3-G	SOD-123	BZT52C24-G
SOD-523F	BZX584B39	SOD-123	BZT52C4V7-G	SOD-123	BZT52C27-G
SOD-523F	BZX584B43	SOD-123	BZT52C5V1-G	SOD-123	BZT52C30-G
SOD-523F	BZX584B47	SOD-123	BZT52C5V6-G	SOD-123	BZT52C33-G
SOD-523F	BZX584B51	SOD-123	BZT52C6V2-G	SOD-123	BZT52C36-G
SOD-523F	BZX584B56	SOD-123	BZT52C6V8-G	SOD-123	BZT52C39-G
SOD-523F	BZX584B62	SOD-123	BZT52C7V5-G	SOD-123	BZT52C43-G
SOD-523F	BZX584B68	SOD-123	BZT52C8V2-G	SOD-123	BZT52C47-G
SOD-523F	BZX584B75	SOD-123	BZT52C9V1-G	SOD-123	BZT52C51-G
		SOD-123	BZT52C10-G	SOD-123	BZT52C56-G
		SOD-123	BZT52C11-G	SOD-123	BZT52C62-G
		SOD-123	BZT52C12-G	SOD-123	BZT52C68-G
				SOD-123	BZT52C75-G