

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: PCN24011 rev0

Title: Die Changes on BZT52B3V6S~36S, BZT52C2V4S~47S and BZT52C2V7K~47K

Issue Date: 2024/12/31

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

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Reliability Engineer

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PCN Type:

Die Size and Passivation Change

Effectivity:

Expected 1st device shipment date: 2025/3/31

Last Order Date: 2025/6/30

Last Delivery Date: 2026/6/25

Product Category (Description):

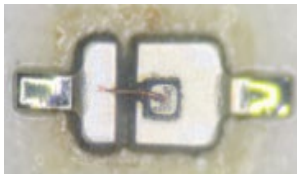
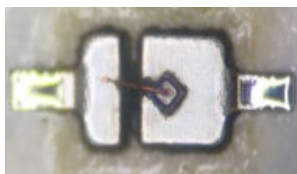
BZT52B3V6S~36S, BZT52C2V4S~47S and BZT52C2V7K~47K

Description of Change:

Taiwan Semiconductor Company supplier (Vendor code: 4999) successfully qualified a smaller die size with different passivation material for BZT52B3V6S~36S, BZT52C2V4S~47S and BZT52C2V7K~47K.

This change ensures product robustness and guarantees commitment to continuous improvement.

Details of Change

Item	Before	After	Remarks
Die size	0.32*0.32mm	0.26*0.26mm	Different
Die passivation material	SiO ₂ +Si ₃ N ₄	SiO ₂	Different
Bond Layout			Different for BZT52B3V6S~36S& BZT52C2V4S~47S; No change for BZT52C2V7K~47K

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 2.85°C 85%RH 168H 3.Reflow 260°C 3×		0/308
2	Temperature Cycling	JESD22-A104	-55(-10/+0)°C/15min to 150(+15/-0)°C/15min,	1000cycles	0/77
3	Unbiased Highly Accelerated Stress Test	JESD22-A118	Ta=130°C, 85%RH,	96hrs	0/77
4	Highly Accelerated Stress Test	JESD22-A110	130°C/85% RH; V=80% VR; 42V max	192hrs	0/77
5	High Temperature Storage Life	JESD22-A103	150°C(+10, -0)	1000hrs	0/77
6	Intermittent Operational Life	JESD22A122	Ta=25°C; ΔTj=100°C; 2.0 min on/off	15000 cycles	0/77
7	Steady State Operational	MIL-STD-750-1	rated IZ max, Tj = 150°C		0/77

NO.	Test	Specification	Condition	Readpoint	Result (Rej/SS)
8	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		0/4
9	Resistance to Solder Heat	JESD22-A111	SMD Pb free: 260(+5/-0)°C , 10+2-0 sec		0/30
10	Thermal Resistance	JESD24	per product datasheet		0/5
11	Wire Bond Pull	MIL-STD-750,	per assembly spec		0/30
12	Die Shear	MIL-STD-750-2	per assembly spec		0/5
13	ESD-HBM	JS-001	per product spec		Cap: 8KV
14	ESD-CDM	JS-002	per product spec		Cap: 2KV

Conclusion:

1. The change device successfully passed consumer product reliability requirement per JESD22 and AEC-Q.
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 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:

Package	Part Number	Package	Part Number	Package	Part Number
SOD-323F	BZT52B3V6S	SOD-323F	BZT52B6V2S	SOD-323F	BZT52B11S
SOD-323F	BZT52B3V9S	SOD-323F	BZT52B6V8S	SOD-323F	BZT52B12S
SOD-323F	BZT52B4V3S	SOD-323F	BZT52B7V5S	SOD-323F	BZT52B13S
SOD-323F	BZT52B4V7S	SOD-323F	BZT52B8V2S	SOD-323F	BZT52B15S
SOD-323F	BZT52B5V1S	SOD-323F	BZT52B9V1S	SOD-323F	BZT52B16S
SOD-323F	BZT52B5V6S	SOD-323F	BZT52B10S	SOD-323F	BZT52B18S
SOD-323F	BZT52B20S	SOD-323F	BZT52C24S	SOD-523F	BZT52C24K
SOD-323F	BZT52B22S	SOD-323F	BZT52C27S	SOD-523F	BZT52C27K

Package	Part Number	Package	Part Number	Package	Part Number
SOD-323F	BZT52B24S	SOD-323F	BZT52C30S	SOD-523F	BZT52C30K
SOD-323F	BZT52B27S	SOD-323F	BZT52C33S	SOD-523F	BZT52C33K
SOD-323F	BZT52B30S	SOD-323F	BZT52C36S	SOD-523F	BZT52C36K
SOD-323F	BZT52B33S	SOD-323F	BZT52C39S	SOD-523F	BZT52C39K
SOD-323F	BZT52B36S	SOD-323F	BZT52C43S	SOD-523F	BZT52C43K
SOD-323F	BZT52C2V4S	SOD-323F	BZT52C47S	SOD-523F	BZT52C47K
SOD-323F	BZT52C2V7S	SOD-523F	BZT52C2V7K		
SOD-323F	BZT52C3V0S	SOD-523F	BZT52C3V0K		
SOD-323F	BZT52C3V3S	SOD-523F	BZT52C3V3K		
SOD-323F	BZT52C3V6S	SOD-523F	BZT52C3V6K		
SOD-323F	BZT52C3V9S	SOD-523F	BZT52C3V9K		
SOD-323F	BZT52C4V3S	SOD-523F	BZT52C4V3K		
SOD-323F	BZT52C4V7S	SOD-523F	BZT52C4V7K		
SOD-323F	BZT52C5V1S	SOD-523F	BZT52C5V1K		
SOD-323F	BZT52C5V6S	SOD-523F	BZT52C5V6K		
SOD-323F	BZT52C6V2S	SOD-523F	BZT52C6V2K		
SOD-323F	BZT52C6V8S	SOD-523F	BZT52C6V8K		
SOD-323F	BZT52C7V5S	SOD-523F	BZT52C7V5K		
SOD-323F	BZT52C8V2S	SOD-523F	BZT52C8V2K		
SOD-323F	BZT52C9V1S	SOD-523F	BZT52C9V1K		
SOD-323F	BZT52C10S	SOD-523F	BZT52C10K		
SOD-323F	BZT52C11S	SOD-523F	BZT52C11K		
SOD-323F	BZT52C12S	SOD-523F	BZT52C12K		
SOD-323F	BZT52C13S	SOD-523F	BZT52C13K		
SOD-323F	BZT52C15S	SOD-523F	BZT52C15K		
SOD-323F	BZT52C16S	SOD-523F	BZT52C16K		
SOD-323F	BZT52C18S	SOD-523F	BZT52C18K		
SOD-323F	BZT52C20S	SOD-523F	BZT52C20K		
SOD-323F	BZT52C22S	SOD-523F	BZT52C22K		