



Process/Product Change Notification Form

Doc no: QF-2 Rev A04

PCN No:	68 Rev A02
Notice Date:	30 September 2023
Title:	Qualification of UBM Plating process

Type of Change:	<input type="checkbox"/> Product	<input checked="" type="checkbox"/> Process/Material	<input type="checkbox"/> Other:
Level of Change	<input checked="" type="checkbox"/> Major	<input type="checkbox"/> Minor	<input type="checkbox"/> Information Only
PCN SUBMISSION PURPOSE:	<input checked="" type="checkbox"/> For Approval <input type="checkbox"/> For Customer Notification Only		

Products Affected: All WLCSP (Wafer level CSP) products (Please refer to the table in description of change section)

Reason for Change: Supplier material discontinuation and PFAS-free qualification.

Description of Change:

- Niv/Cu Etchant Surfactant is used for UBM etching during bumping using the sputtering process.
- The sub-supplier will discontinue this chemical. No other supplier is found to offer the same chemistry.
- Assembly supplier (ASE) is moving to the plating process for both UBM and RDL Cu plating.
- Passivation material is changed to PFAS-free material (BL301) for both CMOS and MEMs wafers.
- Details of the change are compared as shown below,

CMOS Wafer	Product (As-Is)	Product (To-Be)	Product (As-Is)	Product (To-Be)
Device Type	SIE 1P1M	SIE 1P1M	SIE 2P2M	SIE 2P2M
Product	SiT1576 / SiT1580 / SiT1581 / SiT1566 / SiT1568/ SiT1569 / SiT1572 / SiT1573 / SiT1579		SiT8021 / SiT3901 / SiT1552 / SiT1532 / SiT1533 / SiT1534	
Wafer Size	8	8	8	8
Ball Type	Ball Drop	Ball Drop	Ball Drop	Ball Drop
Passivation 1 (Type / Thickness)	HD8820 - 5um	BL301 - 7.5um	HD8820 - 5um	BL301 - 7.5um

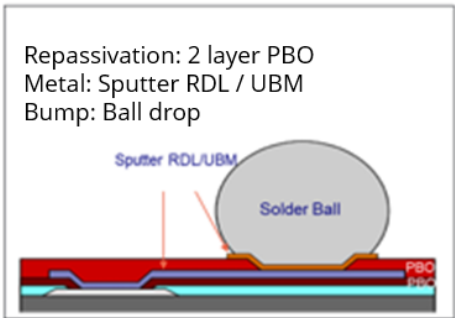
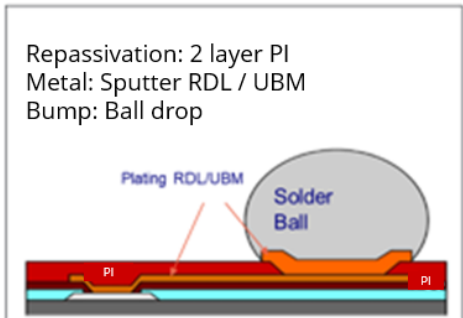
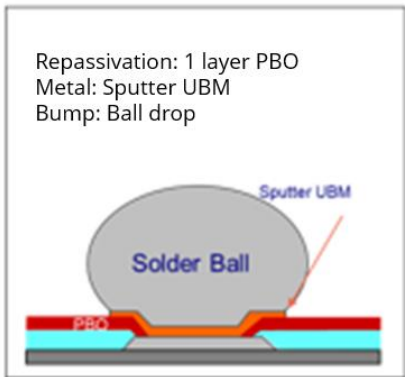
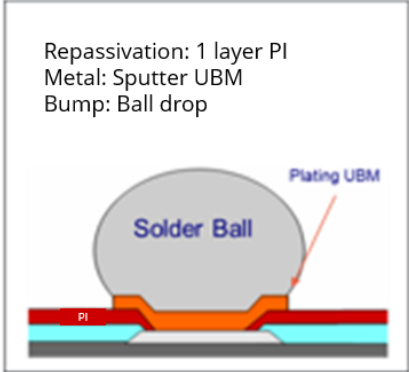


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RDL (Type / Thickness)	n/a	n/a	Sputter Ti0.2um/Al 1.5um/Ti 0.2um	Sputter Ti 1k/Cu 2k Plating Cu 4um
UBM (Type / Thickness)	Sputter Ti 0.2um/NiV0.325um/ Cu0.8um	Sputter Ti 1k/ Cu 2k Plating Cu 8.6um	n/a	n/a
Passivation 2 (Type / Thickness)	n/a	n/a	HD8820 - 5um	BL301 – 7.5um
UBM (Type / Thickness)	n/a	n/a	Sputter Al 0.4um/ NiV 0.325um / Cu 0.8um	Sputter Ti 1k/Cu 2k Plating Cu 8.6um

MEMS Wafer	Product (As-Is)	Product (To-Be)
Device Type	SIE 1P1M	SIE 1P1M
Product	SiT1576 / SiT1580 / SiT1581 / SiT1566 / SiT1568/ SiT1569 / SiT1572 / SiT1573 / SiT1579	
Wafer Size	8	8
Ball Type	Ball Drop	Ball Drop
Passivation 1 (Type / Thickness)	HD8820 - 5um	BL301 – 5um
RDL (Type / Thickness)	n/a	n/a
UBM (Type / Thickness)	Sputter Ti 1k/ Cu 2k Plating Cu 8.6um	Sputter Ti 1k/ Cu 2k Plating Cu 8.6um

Device Type	AS-IS (SPUTTER RDL/UBM)	TO-BE (PLATED RDL/UBM)
SIE 2P2M	<p>Repassivation: 2 layer PBO Metal: Sputter RDL / UBM Bump: Ball drop</p> 	<p>Repassivation: 2 layer PI Metal: Sputter RDL / UBM Bump: Ball drop</p> 
SIE 1P1M	<p>Repassivation: 1 layer PBO Metal: Sputter UBM Bump: Ball drop</p> 	<p>Repassivation: 1 layer PI Metal: Sputter UBM Bump: Ball drop</p> 

Last time buy orders are required to be placed by 06/15/2024. The last shipment of product tied to the last time buy orders, is expected by 12/15/2024.

Samples will be available, upon request. Please contact our sales and customer service representatives for sample requests or any clarifications.

Qualification Details:

Planned by Aug 10, 2024.



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Proposed Change Implementation date:	September 30, 2024
First Planned Ship Date:	Q4, 2024

Effect of Change: <input checked="" type="checkbox"/> None <input type="checkbox"/> Description below (ea. Product Quality, Performance, Reliability)	
Document/s Attached: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
PCN Coordinator:	GUNASEGARAN ARCHUNAN
Job Title:	SR QUALITY MANAGER

Customer Acknowledgement:

For Major change, SiTime requires approval from customer by signing this document or approval by email to the respective Sales. For any further clarifications, kindly contact SiTime sales support at salesupport@sitime.com for assistance. If SiTime does not receive any response by October 31st, 2023, it will be considered as acceptance of this change.

For customers managed by distributors, it is the distributor's responsibility to ensure their end customers are notified and approval is obtained according to PCN requirements.

No approval is required for PCN customer notification only.

Acknowledged by :

Date :

Customer's Company :

Remove this Signature Box for customer notification only.

Change Level Description: (as per JESD46):

Major Change: Process/Product change affecting the form, fit, function, quality and reliability of the product. Customer acknowledgement is requested.

Minor Change: Process/Product change does not affect the form, fit, function, quality and reliability of the product. Customer acknowledgement is requested.

Information Only: Customer response is not required.