

PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company	 STMicroelectronics International N.V
1.2 PCN No.	ADG/23/14370
1.3 Title of PCN	STL42P6LLF6 (6B6401): Double Stitch Bonding Introduction
1.4 Product Category	STL42P6LLF6
1.5 Issue date	2023-10-26

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Mario ASTUTI
2.2.2 Marketing Manager	Martina GIUFFRIDA,Anna RANILO
2.2.3 Quality Manager	Diego Maria FERRARI

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Methods	Process flow chart: Revision change in Process like addition, deletion of process step	Subcon TFME (former NANTONG FUJITSU)

4. Description of change

	Old	New
4.1 Description	Single Stitch Bonding	Double Stitch Bonding
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact	

5. Reason / motivation for change

5.1 Motivation	Process rationalization
5.2 Customer Benefit	SERVICE CONTINUITY

6. Marking of parts / traceability of change

6.1 Description	Dedicated Finished Good Code
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7. Timing / schedule

7.1 Date of qualification results	2023-11-30
7.2 Intended start of delivery	2024-01-31
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	
8.2 Qualification report and qualification results	In progress

9. Attachments (additional documentations)

14370 Public product.pdf 14370 detail.pdf

10. Affected parts		
10. 1 Current		10.2 New (if applicable)
10.1.1 Customer Part No	10.1.2 Supplier Part No	10.1.2 Supplier Part No
	STL42P6LLF6	

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Product/process change notification:

STL42P6LLF6 (6B6401): Double Stitch Bonding Introduction

ADG/23/14370

Product family	Technology	Package
STL42P6LLF6	PMOS	Power FLAT 5x6 8L

(optional)

Description of the change
Double Stitch bonding introduction

Reason
Process Rationalization

Date of implementation
January 2024

Impact of the change	
Form	No Impact
Fit	No Impact
Function	No Impact
Reliability	No Impact
Processibility	No Impact

Qualification of the change
<ul style="list-style-type: none"> First Reliability lot completed the tests with positive results Final Reliability reports will be provided by November The new double stitches bonding is ensuring the same quality and electrical characteristics as the current products.



646B Double Stitches CONVERSION from Single Stitch

Agenda

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Change Description

4

ZVEI Guidelines

5

Double stitches realization

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Ribbon bonding comparison
Single Vs Double Stitches

7

Test Vehicle selected

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Products List impacted

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Qualification plan

10

Conclusions

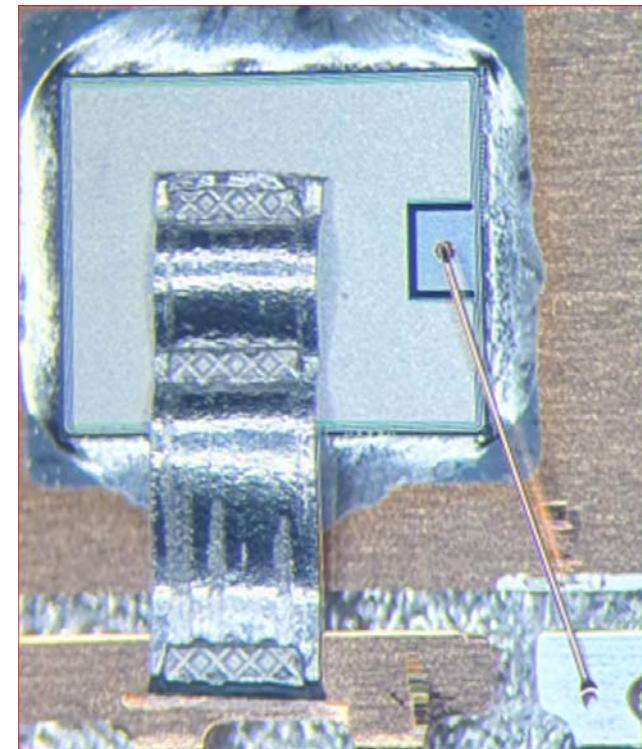
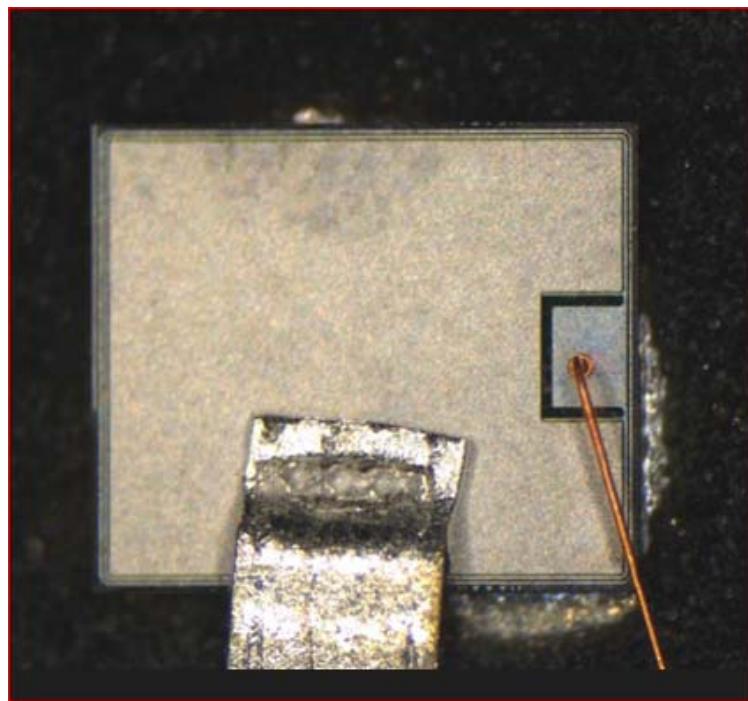
Change description

- Aim of this document is to describe the qualification activity to use ribbon bonding from single to double stitches.
- The TV identified have been :
 - 6B64 (INDUSTRIAL)
- No any change from the rest of Assy step either Testing point of view in TFME and SHZ
- First Reliability lot completed the tests with positive results
- Final Reliability reports will be provided by November
- The new double stitches bonding is ensuring the same quality and electrical characteristics as the current products.

ZVEI Guidelines

ID	Type of change	Assessment of impact on Supply Chain regarding following aspects		Remaining risks within Supply Chain?	Understanding of semiconductors experts	Examples to explain	A: Application level B: Boardlevel C: Component level * Not relevant for qualification matrix
		No	Yes				
x SEM-PA-17	Change of specified-assembly process sequence (deletion and/or additional process step)	--	P	(--): no influence in final product integrity or specified sequence (P): influence in final product integrity or specified sequence e.g. deletion of optical inspection e.g. change lead finishing pre trim & form to post trim & form	(--): e.g. additional cleaning step e.g. deletion of optical inspection (P): e.g. change lead finishing pre trim & form to post trim & form		C

Double Stitches realization



Ribbon bonding comparison Single Vs Double Stitches

# item	Stitch - before changing	Stitch - after changing	change
BOM	-	-	No
Assy process steps	-	-	No
T&Finisching	-	-	No
Ribbon size	-	-	No
Ribbon bonding	Single	Double	Yes
Machines	-	-	No
Location	-	-	no

Test Vehicle selected

Commercial products

STL42P6LLF6



ST silicon line

6B6401

Product list impacted

Commercial → STL42P6LLF6

Qualification plan

Test name	Condition/Method	Steps	Perform this trials for each lot
Thermal Cycle	Ambient Temp Range =-55°C /+150 °C	1000 cycles	77unit x 3lots
Environmental Sequence	ES (100TC @ Ta=-55°C /+150 °C + 96hAC)	TC 100 + PCT96h	77unit x 3lots
HTS	150 °C	1000H	77unit x 3lots

For the deep details to see the Qual report

Conclusions

- Qualification activity has been performed to qualify the new bonding process step from current Single Stitch to Double Stitches in TFME .
- All reliability tests (AEC-Q101 requirement) have been completed with positive results.
- Neither functional or parametric rejects were detected at final electrical test.
- The report shows the positive results achieved.
- The new Ribbon Bonding by Double Stitches is ensuring the same quality and electrical characteristics as the current products.

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Public Products List

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PCN Title : STL42P6LLF6 (6B6401): Double Stitch Bonding Introduction

PCN Reference : ADG/23/14370

Subject : Public Products List

Dear Customer,

Please find below the Standard Public Products List impacted by the change.

STL42P6LLF6		
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