PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	ADG/21/12824
1.3 Title of PCN	SPC56xPxL3x, SPC56xPxL5x (FP60): Activation of TSMC as Additional Diffusion Plant
1.4 Product Category	see list
1.5 Issue date	2021-05-31

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	Luca RODESCHINI
2.1.2 Marketing Manager	Matteo MOIOLI
2.1.3 Quality Manager	Alberto MERVIC

3. Change

3.1 Category	**3.2 Type of change**	**3.3 Manufacturing Location**
Transfer	Line transfer for a full process or process brick (process step, control plan, recipes) from one site to another site: Wafer fabrication	Subco TSMC (Taiwan) - receiving plant

4. Description of change

	Old	**New**
4.1 Description	ST Crolles (France)	ST Crolles (France) and TSMC (Taiwan)
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact	

5. Reason / motivation for change

5.1 Motivation	Service - Capacity Improvement. Expansion of current silicon diffusion capacity (volumes increase) and flexible/secure production asset – dual sourcing strategy
5.2 Customer Benefit	CAPACITY INCREASE

6. Marking of parts / traceability of change

6.1 Description	Dedicated Finished Good Codes

7. Timing / schedule

7.1 Date of qualification results	2022-03-31
7.2 Intended start of delivery	2022-03-31
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description			
8.2 Qualification report and qualification results	In progress	**Issue Date**	

9. Attachments (additional documentations)

12824 Public product.pdf
12824 Details.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
	SPC560P54L3BEABR	
	SPC560P54L3BEABY	

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PRODUCT/PROCESS CHANGE NOTIFICATION

TITLE	**SPC56xPxL3x, SPC56xPxL5x (FP60): Activation of TSMC as Additional Diffusion Plant**
IMPACTED PRODUCTS	ST silicon line FP60 assembled in LQFP 100 14x14x1.4 package: - SPC560P54L3BEABR - SPC560P54L3BEABY - SPC560P60L3BEABR - SPC560P60L3CEFAY - SPC56AP54L3B2FBR - SPC56AP60L3B2FBR - SPC56AP60L3BEAAR - SPC560P60L3CEFAR - SPC56AP60L3BEFBR - SPC56AP60L3BEFBY ST silicon line FP60 assembled in LQFP 144 20x20x1.4 package: - SPC560P54L5BEAAR - SPC560P54L5C2AAR - SPC560P54L5CEAAR - SPC560P60L5CEAAR - SPC560P60L5CEFAR - SPC56AP60L5CEFAY - SPC56AP60L5CEFAR
MANUFACT. STEP	Silicon Diffusion
INVOLVED PLANT	TSMC (recipient Plant – ST Subcontractor Fab14A 300mm located in Tainan (Taiwan) - Automotive qualified and certified IATF-16949
CHANGE REASON	Service – Capacity Improvement. Expansion of current silicon diffusion capacity (volumes increase) and flexible/secure production asset – dual sourcing strategy
CHANGE DESCRIPTION	Activation of TSMC Fab14A as additional or alternative diffusion source

FB64 – Bolero1.5M, FB50 – Bolero 512K and FP50 – Pictus 512K, other automotive devices of the same Technology Platform, are currently running in TSMC – FB14A

TRACEABILITY

Dedicated Finished Good code (internal part number) as per following table:

Package	Commercial Product	Crolles Finished Good	TSMC Finished Good
LQFP144 20x20	SPC560P54L5BEAAR	60P54L5BEEAAR700	60P54L5BEEAAR709
	SPC560P54L5C2AAR	60P54L5CE2AAR700	60P54L5CE2AAR709
	SPC560P54L5CEAAR	60P54L5CEEAAR700	60P54L5CEEAAR709
	SPC560P60L5CEAAR	60P60L5CEEAAR700	60P60L5CEEAAR709
	SPC560P60L5CEFAR	60P60L5CEEFAR700	60P60L5CEEFAR709
	SPC56AP60L5CEFBR	6AP60L5CEEFBR700	6AP60L5CEEFBR709
	SPC56AP60L5CEFAY	6AP60L5CEEFAY700	6AP60L5CEEFAY709
	SPC56AP60L5CEFAR	6AP60L5CEEFAR700	6AP60L5CEEFAR709
LQFP100 14x14	SPC560P54L3BEABY	60P54L3BEEABY700	60P54L3BEEABY709
	SPC560P54L3BEABR	60P54L3BEEABR700	60P54L3BEEABR709
	SPC560P60L3BEABR	60P60L3BEEABR700	60P60L3BEEABR709
	SPC560P60L3BEABY	60P60L3BEEABY700	60P60L3BEEABY709
	SPC56AP54L3B2FBR	6AP54L3BE2FBR700	6AP54L3BE2FBR709
	SPC56AP54L3BEFBR	6AP54L3BEEFBR700	6AP54L3BEEFBR709
	SPC56AP60L3BEAAR	6AP60L3BEEAAR700	6AP60L3BEEAAR709
	SPC560P60L3CEFAY	60P60L3CEEFAY700	60P60L3CEEFAY709
	SPC56AP60L3B2FBR	6AP60L3BE2FBR700	6AP60L3BE2FBR709
	SPC560P60L3CEFAR	60P60L3CEEFAR700	60P60L3CEEFAR709
	SPC56AP60L3BEFBR	6AP60L3BEEFBR700	6AP60L3BEEFBR709
	SPC56AP60L3BEFBY	6AP60L3BEEFBY700	6AP60L3BEEFBY709

VALIDATION

According to ZVEI (AEC-Q100/Q006) recommendations, item SEM-PW-13 - Move all or parts of production to a different wafer fab site:

AEC-Q100 Revision H	Temperature Humidity Bias or biased HAST	Autoclave or Unbiased HAST	Temperature Cycling	Power Temperature Cycling	High Temperature Operating Life	Early Life Failure Rate	NVM Endurance, Data Retention, and Operational Life	Wire Bond Shear	Wire Bond Pull	Electromigration	Time Depending Dielectric Breakdown
	THB	AC	TC	PTC	HTOL	ELFR	EDR	WBS	WBP	EM	TDDB
	A2	A3	A4	A5	B1	B2	B3	C1	C2	D1	D2
●	●	●	●	M	●	●	J	●	●	●	●

AEC-Q100 Revision H	Hot Carrier Injection	Negative Bias Temperature Instability	Stress Migration	Electronic Discharge Human Body Model	Electronic Discharge Charged Device Model	Latch up	Electrical Distribution	Hermetic Package Test	Die Shear	Parameter-Analysis: Comparison of current with changed device characterization, electrical distribution	For Cu Wire Products: Consider AEC-Q006
	HCI	NBTI	SM	HBM	CDM	LU	ED	MECH	DS		
	D3	D4	D5	E2	E3	E4	E5	G1-4	G7		
●	●	●	●	●	●	●	●	H	H	●	●

Only AEC-Q100 will be specifically run on FP60 device. AEC-Q006 will be covered by similarity with the other M10 products already qualified in TSMC i.e. FB64, FB50 & FP50

CURRENT PRODUCTS

Current products will be transferred to TSMC Fab14A Taiwan. ST Crolles 300mm diffusion line will remain active as alternative solution.

Together with the above activity, opportunity is taken to rationalize products portfolio, by terminating some impacted devices (PTN – Product termination Notice in progress), as per below table:

Package	Terminated CP	Replacement
LQFP144 20x20	SPC560P54L5BEAAY	SPC56AP60L5CEFAY - Superset
	SPC560P54L5C2AAY	SPC56AP60L5CEFAY - Superset
	SPC560P54L5CEAAY	SPC56AP60L5CEFAY - Superset
	SPC560P60L5CEAAY	SPC56AP60L5CEFAY - Superset
	SPC560P60L5CEFAY	SPC56AP60L5CEFAY - Superset
	SPC56AP60L5BEFAR	SPC56AP60L5CEFAR - Superset
	SPC56AP60L5BEFAY	SPC56AP60L5CEFAY - Superset
	SPC56AP60L5CEFBR	SPC56AP60L5CEFAR - Superset
	SPC56AP60L5CEFBY	SPC56AP60L5CEFAY - Superset
LQFP100 14x14	SPC560P60L3BEABY	SPC560P60L3CEFAY - Superset
	SPC56AP54L3B2FBY	SPC56AP60L3BEFBY
	SPC56AP54L3BEFBR	SPC56AP60L3BEFBR
	SPC56AP54L3BEFBY	SPC56AP60L3BEFBY
	SPC56AP60L3B2FBY	SPC56AP60L3BEFBY
	SPC56AP60L3BEAAY	SPC560P60L3CEFAY - Superset
	SPC56AP60L3BEABR	SPC56AP60L3BEFBR
	SPC56AP60L3BEABY	SPC56AP60L3BEFBY

REPORTS	Transfer validation is presently in progress. AEC-Q100 Reliability Report will be available by Q1 2022
IMPLEMENT.	Change activation is proposed upon ST full qualification, pending Customer approval. Production is expected to start within Q1 2022

Public Products List

Publict Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

PCN Title : SPC56xPxL3x, SPC56xPxL5x (FP60): Activation of TSMC as Additional Diffusion Plant

PCN Reference : ADG/21/12824

Subject : Public Products List

Dear Customer,

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

SPC560P54L5CEAAR	SPC560P54L3BEABY	SPC56AP60L3BEABY
SPC560P54L5CEAAY	SPC560P60L3BEABR	SPC56AP60L5CEFBY
SPC560P60L5CEAAY	SPC56AP60L5CEFBR	SPC560P54L5BEAAY
SPC56AP60L5CEFAR	SPC560P54L3BEABR	SPC56AP60L3BEFBR
SPC560P54L5BEAAR	SPC560P60L3CEFAR	SPC56AP60L5CEFAY
SPC56AP60L5BEFAY	SPC560P60L5CEFAR	SPC56AP60L3BEAAY
SPC56AP60L3BEFBY	SPC56AP60L3BEAAR	SPC56AP54L3BEFBR
SPC560P60L5CEAAR	SPC560P60L5CEFAY	SPC56AP60L3BEABR
SPC560P60L3CEFAY	SPC56AP54L3BEFBY	SPC56AP60L5BEFAR
SPC560P60L3BEABY		

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