PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data	
1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	AMS/23/14319
1.3 Title of PCN	Qualification of TFME Tongke for Assembly and Test for selected TO220 package
1.4 Product Category	See product list
1.5 Issue date	2023-10-16

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	Marcello SAN BIAGIO
2.1.2 Marketing Manager	Salvatore DI VINCENZO
2.1.3 Quality Manager	Jean-Marc BUGNARD

3. Change		
3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Transfer	Product transfer from one site to another site, even if test or process line is qualified	TFME Tongke

4. Description of change		
	Old	New
4.1 Description	Assembly and test : - ST Shenzhen	Assembly and test : - ST Shenzhen - TFME Tongke
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No impact	

5. Reason / motivation for change	
5.1 Motivation	The purpose of the introduction of TFME Tongke for Assembly and Test & Finishing activities is to further improve the rationalization of our manufacturing assets and provide a better support to our customers by enhancing the manufacturing process for higher volume production.
5.2 Customer Benefit	SERVICE IMPROVEMENT

6. Marking of parts / traceability of change	
6.1 Description	New Finished good codes

7. Timing / schedule	
7.1 Date of qualification results	2023-09-29
7.2 Intended start of delivery	2024-01-20
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation			
8.1 Description	14319 RER 6088-1810-W-2023_TO220 FP_SG_DG_TFME TONGKE - CHINA.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2023-10-16

9. Attachments (additional documentations)
14319 Public product.pdf 14319 RER 6088-1810-W-2023_TO220 FP_SG_DG_TFME TONGKE - CHINA.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
L7805ABP	L7805ABP	
L7805CP	L7805CP	
L7812CP	L7812CP	
L7815CP	L7815CP	
L7824CP	L7824CP	
L7905CP	L7905CP	
L7912CP	L7912CP	
L7915CP	L7915CP	
LM317P	LM317P	

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Public Products List

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PCN Title : Qualification of TFME Tongke for Assembly and Test for selected TO220 package

PCN Reference : AMS/23/14319

Subject : Public Products List

Dear Customer,

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

L7812CP	L7905CP	LM317P
L7815CP	L7912CP	L7805ABP
L7805CP	L7915CP	L7824CP

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Reliability Evaluation Report

LM317P, L7805ABP, LM217T-DG, LM337SP, L4940V5, L7912CV/ACV, LM317T, L7805ABV, LF50ABV
TO220 TFME TONGKE - CHINA

General Information	
Product Line	L317, LX05, 0137, L568, QL12, LF05
C/P	LM317P, L7805ABP, LM217T-DG, LM337SP, L4940V5, L7912CV/ACV, LM317T, L7805ABV, LF50ABV
Product Division	AMS
Package	TO220 FP, TO220SG/DG
Silicon process technology	BIP, HBIP40

Location	
Wafer fab	AM6F-Singapore SG6
Assembly Plant	TFME TONGKE - CHINA
Results	
Reliability Assessment	PASS

DOCUMENT INFORMATION

Version	Date	Pages	Comment
1.1	22 September 2023	4	

TABLE OF CONTENTS

1 APPLICABLE AND REFERENCE DOCUMENTS

Document reference	Short description
JESD47	Stress-Test-Driven Qualification of Integrated Circuits

2 GLOSSARY

Item	Short description
Tj	Temperature at junction of the device
T_A	Temperature of ambient air
RH	Relative Humidity
Vcc max	Max Operative Voltage

3 RELIABILITY EVALUATION OVERVIEW

3.1 Objectives

Reliability evaluation of the products with the attributes reported in the table below

Attributes	Value								
Product	LM317P	L7805ABP	LM217T-DG	LM337SP	L4940V5	L7912CV/ACV	LM317T	L7805ABV	LF50ABV
Process Technology	BIP	HBIP40	BIP	BIP	BIP	HBIP40	BIP	HBIP40	BIP
Diffusion Plant	AM6F-Singapore SG6								
Package	TO220 FP		TO220 DG				TO220 SG		
Assembly Plant	TFME TONGKE - CHINA								
Market Segment	INDUSTRIAL								

3.2 Conclusion

Qualification requirements have been fulfilled without exception. Reliability tests have shown that the devices behave correctly against environmental tests (no failure). The stability of electrical parameters during the accelerated tests demonstrates the ruggedness of the products and safe operation, which is consequently expected during their lifetime.

4 TESTS PLAN

ST refers to the JEDEC 47 for Industrial products when conducting reliability tests for the qualification of new assy plants.

4.1 Test plan and results summary

STRESS	Reference	Test Conditions	AECQ Requirements			Results	Note
			Sample Size/Lot	Number of Lots	Duration or Level		
ACCELERATED ENVIRONMENT STRESS TESTS							
Preconditioning (PC)	JESD22 A113 J-STD-020	Preconditioning: (Test @ Rm) SMD only; Moisture Preconditioning for THB, UHAST, TC, Peak Reflow Temp = 260C	Not Applicable				
Temperature-Humidity-Bias (THB)	JESD22 A101	THB, 85°C, 85% RH Vcc max Test @ Room/Hot Temperature	77	9	1000hrs	0/693	1
Unbiased HAST (uHAST)	JESD22 A118	130°C/85%RH Test @ Room Temperature	77	9	96hrs	0/693	1
Temperature Cycling (TC)	JESD22 A-104	TC, -65°C to +150°C Test @ Hot temperature 5 units Post-T/C WBP sampled	77	9	1000cycles	0/693	1
High Temperature Storage Life (HTSL)	JESD22 A103	HTSL, T_A=150°C, no bias Test @ Room/Hot Temperature	45	9	1000hrs	0/405	1

STRESS	Reference	Test Conditions	AECQ Requirements			Results	Note
			Sample Size/Lot	Number of Lots	Duration or Level		
PACKAGE ASSEMBLY INTEGRITY TESTS							
Wire Bond Shear (WBS)	JESD22-B116	WBS, Cpk >1.67	5	9	-	PASS Cpk>1.67	1
Wire Bond Pull (WBP)	Mil-STD-883, Method 2011	WBP, Cpk >1.67	5	9	-	PASS Cpk>1.67	1
Solderability (SD)	JSTD-002D	SD, Surface mount process simulation test	15	9	-	PASS	1

Notes:

1. It has been performed on 1 lot for each product