



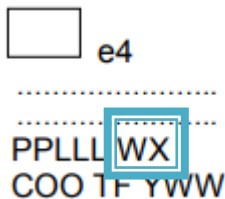
**PRODUCT/PROCESS
CHANGE NOTIFICATION
PCN 10803 – Additional information**

**Extended STM32F listed products –
TSMC Singapore Wafer Fab SSMC additional source**

MDG - Microcontrollers Division (MCD)

How can the change be seen?

The standard marking is:



WX code indicates the diffusion traceability plant code.

Please refer to the [DataSheet](#) for marking details.

The marking is changing as follows:

Existing		Additional	
WX code	Fab	WX code	Fab
9U	TSMC USA Wafer Fab 11	9C	TSMC Singapore Wafer Fab SSMC
98	TSMC Taiwan Wafer Fab 8		

How to order samples?

For all samples request linked to this PCN, please:

- place a **Non-standard** sample order (choose Sample Non Std Type from pull down menu)
- insert the PCN number “**PCN10803**” into the NPO Electronic Sheet/**Regional Sheet**
- request sample(s) through Notice tool, indicating a single Commercial Product for each request

Partial Ship: 01 Price Pol: 05 Status: 01 Canc:
 %: 0 Sample Type: Sample Non Std Type
 Closing Type: Sample Std Type
 Sample Non Std Type
 Sample Non Std w Spl Tests
 Lab Sheet:

SO | NPO Sample

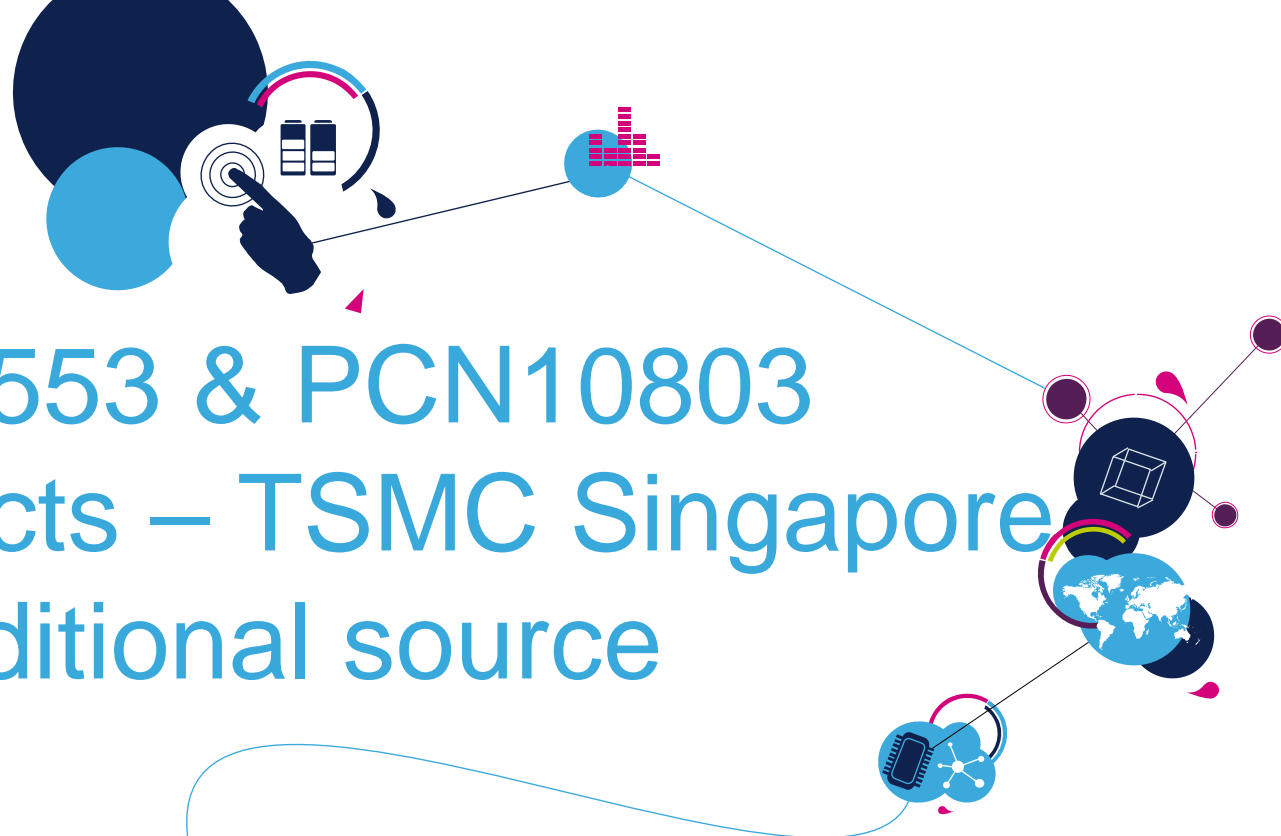
Header
 SO Nr: 0018502433 Customer: 99770200 01 ST-TOKYO SO Type: 30 Sample Order Cost Center: JT3129 SAMPLES /SALES J
 PD Nr: Carrier Code: 0001 Price Policy: 05 Currency: 02 U.S. DOLLAR Req Name:
 Notes: Status: 01 All items pending,ni Issuing Date: 25-JUN-2018 Ord Val: 0.0000 Sample Req Date: 25-Jun-2018

Sch I Nr	PO I. Nr.	Finished Good	Comm Qty	Open Qty	Plant Open Qty	Reqd Qty	Unit Price	RD	CD	EDD	St
1.1.10	000001	STM32F429NIH6	30	30	30	30	0.0000	25-Jun-18	01-Mar-59	01-Mar-59	01

Final Cust:
 PO Item: 000001 Comm Prod: STM32F429NIH6 Qty: 30 RD: 25-Jun-18 Unit Price: 0.0000 Final Cust: 8800367006 SANSHIN/NPC

Cust Part Nr: Finished Good: Partial Ship: 01 Price Pol: 05 Status: 01 Canc:
 Notes: TAM K Pieces: 0 Our Share%: 0 Sample Type: Sample Non Std Type
 Project Name: Closing Date: Closing Type:

Regional Sheet: Lab Sheet:
 PCN 10595



RER1802 for PCN10553 & PCN10803 STM32F listed products – TSMC Singapore Wafer Fab SSMC additional source

Reliability Evaluation Plan

February, 5th 2019

MDG Quality & Reliability Department



STM32F listed products – TSMC Singapore Wafer Fab SSMC additional source STM32 Die Test Vehicles

Die Vehicle	Process Perimeter	Assembly Line	Package	Number of Reliability Lots
422	TSMC 0.18µm	ATP1	LQFP100	3 lots to qualify Process Perimeter Then 1 lot by Die
440		JSCC	LQFP64	
444		MUAR	LQFP48	
445		JSCC	LQFP48	
448		ST MUAR	LQFP100	

STM32F listed products – TSMC Singapore Wafer Fab SSMC additional source

STM32 Die Reliability Trials

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Reliability Trial & Standard		Test Conditions	Pass Criteria	Lot Strategy	Units per Lot
ESD HBM	ANSI/ESDA/JEDEC JS-001 JESD22-A114	25°C	2kV (class 2)	1 to 2 lots	3
LU	JESD78	125°C REG-ON Configuration 125°C REG-OFF Configuration	No concern	1 to 2 lots	6 / configuration
EDR + Bake	JESD22-A117 JESD22-A103	125°C & 3.6V Cycling 150°C Bake	10k cycles 1500h 1000h	1 to 2 lots 1 st product driver Other products	77
EDR + Bake	JESD22-A117 JESD22-A103	25°C & 3.6V Cycling 150°C Bake	10k cycles 168h	1 to 2 lots	77
EDR + Bake	JESD22-A117 JESD22-A103	-40°C & 3.6V Cycling 150°C Bake	10k cycles 168h	1 to 2 lots	77
ELFR	JESD22-A108 JESD74	125°C & 3.6V	48h	1 to 2 lots	800 units for products driver 500 units for other products
HTOL	JESD22-A108	125°C & 3.6V	1200h 600h	1 to 2 lots 1 st product driver Other products	77

STM32F listed products – TSMC Singapore Wafer Fab SSMC additional source

STM32 Package Test Vehicles

Package Line	Assembly Line	Package	Wire	Die Vehicle / Partial Rawline	Number of Reliability Lots
LQFP	ATP1	LQFP14*14 100L	Au	422 / 1L*422	3 lots to qualify Process Perimeter Then 1 lot by Package Assembly Line
	ST MUAR	LQFP14*14 100L	Ag	422 / 1L*422	
	ST MUAR	LQFP14*14 100L	Ag	448 / 1L*448	
	JSCC	LQFP10*10 64L	Ag	440 / 5W*440	
	JSCC	LQFP7*7 48L	Ag	445 / 5B*445	
	ASEKH	LQFP7*7 48L	Au	440 / 5B*440	
	MUAR	LQFP7*7 48L	Ag	444 / 5B*444	
QFN	JSCC	UQFN7*7 48L	Ag	440 / MI*440	
	JSCC	UQFN4*4 28L COL	Au	444 / MB*444	
TSSOP	STS	TSSOP20 Body 4.4	Ag	444 / YA*444	
UFBGA	ATP3	UFBGA64 5x5	Au	440 / 2I*440	
WLCSP	SCS	WLCSP 100b	NA	422 / 1M*422	

STM32F listed products – TSMC Singapore Wafer Fab SSMC

additional source

STM32 Package Reliability trials

Reliability Trial & Standard		Test Conditions	Pass Criteria	Lot Strategy	Units per Lot
PC	Pre Conditioning Moisture Sensitivity Jedec Level 1 (*) Moisture Sensitivity Jedec Level 3 (*) J-STD-020/ JESD22-A113	Bake (125°C / 24h) Soak (85°C / 85% RH / 168 hrs) for level 1 (*) Soak (30°C / 60% RH / 192h) for level 3 (*) Convection reflow: 3 passes	3 Passes	1 to 2 lots	231 to 308 (***)
UHASt (**) (***)	Unbiased Highly Accelerated Temperature & Humidity Stress JESD22-A118	130°C, 85%RH, 2 Atm	96h	1 to 2 lots	77
TC (**)	Thermal Cycling JESD22 A104	-50°C, +150°C Or equivalent -65°C +150°C	1000Cy 500Cy	1 to 2 lots	77
THB (**) Or HASt (**)	Temperature Humidity Bias JESD22-A101 Or Biased Highly Accelerated temperature & humidity stress JESD22 A110	85°C, 85% RH, bias Or 110°C, 1.2 atm , 85% RH bias	1000h Or 264h	1 to 2 lots	77
HTSL (**)	High Temperature Storage Life JESD22-A103	150°C - no bias	1000h	1 to 2 lots	77
Construction Analysis	JESD22-B102	Including Solderability & Physical Dimensions	No concern	1 by package assembly line	15
	JESD22-B100/B108				10
ESD CDM	ESD Charged Device Model ANSI/ESD STM5.3.1	Aligned with device datasheet	250V to 500V	1 by package assembly line	3

(*) MSL1 for packages TSSOP20 and WLCSP100

MSL3 for other packages (LQFP48, LQFP64, LQFP100, UQFN28 COL, UQFN48, UFBGA64)

(**) Tests performed after preconditioning

(***) UHASt not done for BGA

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