Die 417 rev X
Die 425 rev Y
Die 447 rev Z

Reliability Evaluation Plan

February 16th 2016

MMS MCD Quality & Reliability Department

life.augmented

Die 417 rev X / Die 425 rev Y / Die 447 rev Z

- Qualification plan for new cuts of the dice described in the document
  - Target: No regression compared to the previous production versions

Trial	Test1	Method	Conditions	Sample x lot 429 Rev Y (Cut 1.2) 436 Rev X (Cut 1.3) 437 Rev Z (Cut 1.1)
DIE	LU	JESD78	125°C	6 x 1 for each die
	ESD HBM	ANSI/ESDA/ JEDEC JS-001	1500Ω , 100pF, 25°C 1KV or 2kV depending of the die	3 x 1 for each die
	ESD CDM	ANSI/ESD STM5.3.1	25°C 250V or 500V depending of packages	3 x 1 for each die and in one package
	HTOL	MIL-STD-883 Method 1005 JESD22-A108	125°C , 3.6V 168h	77 x 1 for each die

MMS/MCD RELIABILITY EVALUATION REPORT

RERMCD1322

Product Evaluation: STM32L07x / 192K

CMOS F9GO2 SHRINK ROUSSET 8”

Product / Process information	
Commercial product	STM32L07x / STM32L08x
Product line	447X66
Product description	STM32L07x / STM32L08x 192K
Finish Good Code	32L073VZT6$P1 (LQFP100)
Production Mask Set revision	447XXXZ (Cut 2.1)
Product Division	Microcontrollers Division (MCD)
Silicon process technology	CMOSF9GO2S
Wafer fabrication location	ST Rousset, France
Electrical Wafer Sort test plant location	ST Rousset, France

Reliability Evaluation assessment: PASS

Approval List Document revision 1.0			
Function		**Name**	**Date**
Div Q&R Responsible	Rousset	Frederic BRAVARD	19-October-2015
Div Quality Manager	Rousset	Pascal NARCHE	19-October-2105
Approval List Document revision 2.0			
Div Q&R Responsible	Rousset	Frederic BRAVARD	29-January-2016

Table of Contents

1 RELIABILITY EVALUATION OVERVIEW 3
1.1 OBJECTIVES 3
1.2 CONCLUSION 3

2 RELIABILITY DEVICE CHARACTERISTICS 4
2.1 RELIABILITY DEVICE DESCRIPTION 4
2.2 RELIABILITY DEVICE TRACEABILITY 4
2.2.1 Device used for Die and Package reliability evaluation 4
2.2.2 Front-End Information 5
2.2.3 Back-End Information 6

3 RELIABILITY EVALUATION PLAN / STRATEGY & RESULTS SUMMARY 9
3.1 RELIABILITY EVALUATION : STRATEGY & RESULTS SUMMARY 9
3.1.1 Die Related tests: 10
3.1.2 Package Related tests: 11

4 APPLICABLE AND REFERENCE DOCUMENTS 15

5 GLOSSARY 15

6 REVISION HISTORY 15

1 RELIABILITY EVALUATION OVERVIEW

1.1 Objectives

The aim of this report is to present the results of the reliability evaluation performed on STM32L07x - die 447XXXZ – 192Kbytes, diffused in ST Rousset (CMOS F9GO2S) and assembled on the following packages:

- LQFP100 14x14 AMKOR ATP1
- LQFP64 10X10 STAT ChipPAC Shanghai
- LQFP48 7X7 STAT ChipPAC Shanghai
- LQFP32 7X7 STAT ChipPAC Shanghai
- UFBGA100 7x7 AMKOR ATP3
- UFBGA64 5x5 AMKOR ATP3
- TFBGA64 5x5 ST Muar
- WLCSP49 STAT ChipPAC Singapore

1.2 Conclusion

All reliability tests performed give positive results. Neither functional nor parametric rejects were detected at final electrical testing.

According to the good reliability tests results, the qualification is granted for the STM32L07x – die 447XXXZ – diffused in ST Rousset 8” – France and assembled for all packages mentioned above.

Refer to Section 3.1 Reliability evaluation: strategy & results Summary for details on reliability test results.

2 RELIABILITY DEVICE CHARACTERISTICS

2.1 Reliability Device Description

STM32L07x – die 447XXXZ - is processed CMOS F9GO2 SHRINK, diffused in ST Rousset plant (France).

The STM32L07x - 192k product is a derivative of STM32L05x - 64k and addresses the general purpose market.

For additional information concerning the product behavior, refer to STM32L07x datasheet.

2.2 Reliability Device Traceability

2.2.1 Device used for Die and Package reliability evaluation

RER lot ID	Lot1	Lot2	Lot3
Product	ES32L073VZT6$P1 Cut 1.0	ES32L073VZT6$P3 Cut 2.0	ES32L073VZT6$P4 Cut 2.1
Lab. Location	ST Rousset	ST Rousset	ST Rousset
Wafer fab.	ST Rousset	ST Rousset	ST Rousset
Silicon Process Technology	F9GO2S	F9GO2S	F9GO2S
EWS location	ST Rousset	ST Rousset	ST Rousset
Assembly plant location	AMKOR ATP1	AMKOR ATP1	AMKOR ATP1
Package Description	LQFP100 14X14	LQFP100 14X14	LQFP100 14X14
FT Location	AMKOR ATP3	AMKOR ATP3	AMKOR ATP3

RER lot ID	Lot4	Lot5	Lot6	Lot7	Lot8
Product	ES32L073RZT6$B3 Cut 2.0	ES32L073CZT6$B3 Cut 2.0	ES32L071KZT6$B3 Cut 2.0	ES32L073VZI6$P1 Cut1.0	ES32L073VZI6$P3 Cut2.0
Lab. Location	ST Rousset	ST Rousset	ST Rousset	ST Rousset	ST Rousset
Wafer fab.	ST Rousset	ST Rousset	ST Rousset	ST Rousset	ST Rousset
Silicon Process Technology	F9GO2S	F9GO2S	F9GO2S	F9GO2S	F9GO2S
EWS location	ST Rousset	ST Rousset	ST Rousset	ST Rousset	ST Rousset
Assembly plant location	SCC	SCC	SCC	ATP3	ATP3
Package Description	LQFP64 10X10	LQFP48 7X7	LQFP32 7X7	UFBGA100 7X7	UFBGA100 7X7
FT Location	SCC	SCC	SCC	ATP3	ATP3

RER lot ID	Lot9	Lot10	Lot11	Lot12	Lot13
Product	ES32L072RZI6D$P3 Cut 2.0	ES32L073RZH6$U1 Cut 1.0	ES32L073RZH6$U3 Cut 2.0	ES32L072CZ6TR$H1 Cut1.0	ES32L072CZ6TR$H3 Cut2.0
Lab. Location	ST Grenoble	ST Grenoble	ST Grenoble	ST Grenoble	ST Grenoble
Wafer fab.	ST Rousset	ST Rousset	ST Rousset	ST Rousset	ST Rousset
Silicon Process Technology	F9GO2S	F9GO2S	F9GO2S	F9GO2S	F9GO2S
EWS location	ST Rousset	ST Rousset	ST Rousset	Ang Mo Kio	Ang Mo Kio
Assembly plant location	AMKOR ATP3	ST Muar	ST Muar	SCS	SCS
Package Description	UFBGA64 5X5	TFBGA64 5x5	TFBGA64 5x5	WLCSP49	WLCSP49
FT Location	AMKOR ATP3	ST Muar	ST Muar	SCS	SCS

2.2.2 Front-End Information

	Diffusion FAB
Wafer Fab Name	ST ROUSSET R8"
Wafer Fab Location / Address	STMicroelectronics, 190 av Celestin Coq. ZI - Rousset-Peynier - 13106 Rousset Cedex
Process Technology Name	CMOSF9S
Wafer Diameter	8 inch
Wafer Thickness	375 +/- 25 µm
Die size	3.329 x 3.293 mm
Technology Mask Number	37
Layer Under Metallization **- Material** **- Thickness**	Silicon oxide 600nm
Metal Layers **- Number** **- Material** **- Thickness**	Metal 1 TaN/Ta/Cu 0.280µm Metal 2 Ti/AlCu/TxTN 0.310µm Metal 3 Ti/AlCu/TxTN 0.310µm Metal 4 Ti/AlCu/TxTN 0.310µm Metal 5 Ti/AlCu/TxTN 1.200µm
Passivation Layers	Oxide USG 12KÅ + Nitride 5.5KÅ
Back Metal Finishing **- Thickness**	NA
Die overcoat: **- Material** **- Thickness**	NA
Other Device using same process	STM32L0xx - 64K 417x66
FIT Level **(Ea=0.7eV, C.L:60%, 55°C)**	10 FIT at qualification date
Soft Error Rate **- Alpha SER [FIT/Mb]** **- Neutron SER [FIT/Mb]** **- Conditions**	Alpha SER: 680 FIT/Mb Neutron SER: 685 FIT/Mb Conditions @ 125°C: Alpha SER 0.001α/cm²/h Neutrons: 14n/cm²/h
Wafer Level Reliability **- Electro-Migration (FIT/Mb)** **- Time Dependent Dielectric Breakdown [TDDB] Or Gate Oxide Integrity (GOI)** **- Hot Carrier Injection (HCI)** **- Negative Bias Thermal Instability (NBTI)** **- Stress Migration (SM)**	 Yes Yes Yes Yes Yes

2.2.3 Back-End Information

Package Description	LQFP100 14x14	LQFP64 10x10	LQFP48 7x7	LQFP32 7x7
Assembly Plant Name	AMKOR ATP1	STATS ChipPAC Shanghai	STATS ChipPAC Shanghai	STATS ChipPAC Shanghai
Assembly Plant Location / Address	KM 22 East Service Road Special Economic Zone Cupang, Muntinlupa City PHILIPPINES 1702	188 Hua Xu Road Xujin County Qingpu District Shanghai 201702 CHINA	188 Hua Xu Road Xujin County Qingpu District Shanghai 201702 CHINA	188 Hua Xu Road Xujin County Qingpu District Shanghai 201702 CHINA
Die Thickness after Back grinding	375µm +/- 25 µm	375µm +/- 25 µm	375µm +/- 25 µm	375µm +/- 25 µm
Die sawing method	Step cut	Step cut	Step cut	Step cut
Die attach material - Type (Glue/Film) - Supplier / refer	Glue EPOXY CRM 1076YB SUMITOMO	Glue 3230 ABLESTIK	Glue 3230 ABLESTIK	Glue 3230 ABLESTIK
Wire bonding - Type / diameter - Supplier / characteristics - Method (ultrasonic / thermosonic)	Gold wire diam. 0.8MIL Thermosonic	Gold wire diam. 0.8MIL Thermosonic	Gold wire diam. 0.8MIL Thermosonic	Gold wire diam. 0.8MIL Thermosonic
Lead frame or substrate material	LQFP 14x14 100L	LQFP 10x10 64L	LQFP 7x7 48L	LQFP 7x7 32L
Lead platings - Nature - Thickness	Nickel: 0.4µm min to 1.5µm max Palladium: 0.02µm min to 0.5µm max Gold: 0.003µm min to 0.02µm max	100% Matt Tin 10µm thickness: tolerance 7 to 20 µm for connections	100% Matt Tin 10µm thickness: tolerance 7 to 20 µm for connections	100% Matt Tin 10µm thickness: tolerance 7 to 20 µm for connections
Balls material & diameter (BGA & CSP)	NA	NA	NA	NA
Routing layer material (CSP)	NA	NA	NA	NA
Passivation (CSP)	NA	NA	NA	NA
Back side coating (CSP) - Material - Thickness	NA	NA	NA	NA
Molding compound / Resin encapsulation - Type - Supplier / refer	G631HQ SUMITOMO	G700E SUMITOMO	G700E SUMITOMO	G700E SUMITOMO
Package moisture sensitivity level (JEDEC J-STD020D)	MSL3	MSL3	MSL3	MSL3

Package Description	UFBGA100 7x7	UFBGA64 5x5	TFBGA64 5x5
Assembly Plant Name	AMKOR ATP3	AMKOR ATP3	ST MUAR
Assembly Plant Location / Address	Site P3 119 North Science Avenue Special Economic Processing Zone Laguna Technopark, Binan Laguna PHILIPPINES 4024	Site P3 119 North Science Avenue Special Economic Processing Zone Laguna Technopark, Binan Laguna PHILIPPINES 4024	Tanjong Agas Industrial Area PO Box 28 MUAR 84007 MALAYSIA
Die Thickness after Back grinding	75µm +/- 12 µm	75µm +/- 12 µm	250µm +/- 25 µm
Die sawing method	Step cut	Step cut	Step cut
Die attach material - Type (Glue/Film) - Supplier / refer	DAF ATB130U ABLESTIK	DAF ATB130U ABLESTIK	Glue 2100A ABLEBOND
Wire bonding - Type / diameter - Supplier / characteristics - Method (ultrasonic / thermosonic)	Gold wire diam. 0.8MIL Thermosonic	Gold wire diam. 0.8MIL Thermosonic	Copper wire diam. 0.8MIL Thermosonic
Lead frame or substrate material	UFBGA 7x7 100L	UFBGA 5x5 64L	TFBGA 5x5 64L
Lead platings - Nature - Thickness	NA	NA	NA
Balls material & diameter (BGA & CSP)	SOLDER BALLS WITH 2005 DIAM SN96.5 AG3.5%	SOLDER BALLS WITH 2005 DIAM SN96.5 AG3.5%	SOLDER BALLS SACN125 D0.30mm kballs
Routing layer material (CSP)	NA	NA	NA
Passivation (CSP)	NA	NA	NA
Back side coating (CSP) - Material - Thickness	NA	NA	NA
Molding compound / Resin encapsulation - Type - Supplier / refer	GE100LFCS NITTO	GE100LFCS NITTO	GE-100LF1 HITACHI
Package moisture sensitivity level (JEDEC J-STD020D)	MSL3	MSL3	MSL3

Package Description	WLCSP49
Assembly Plant Name	STATS ChipPAC Singapore
Assembly Plant Location / Address	5, Yishun Street 23 768442 Singapore
Die Thickness after Back grinding	355µm +/- 25 µm
Die sawing method	Mechanical dicing Step cut: 2 different blades
Die attach material - Type (Glue/Film) - Supplier / refer	NA
Wire bonding - Type / diameter - Supplier / characteristics - Method (ultrasonic / thermosonic)	NA
Lead frame or substrate material	NA
Lead platings - Nature - Thickness	NA
Balls material & diameter (BGA & CSP)	SACN125 230 µm
Routing layer material (CSP)	Copper RDL Ti/Cu/Cu UBM
Passivation (CSP)	Polymide passivation - HD 4100 - R010-0006X
Back side coating (CSP) - Material - Thickness	PET film, 25 µm
Molding compound / Resin encapsulation - Type - Supplier / refer	NA
Package moisture sensitivity level (JEDEC J-STD020D)	MSL1

3 RELIABILITY EVALUATION PLAN / STRATEGY & RESULTS SUMMARY

3.1 Reliability evaluation : strategy & results summary

The CMOS F9GO2 SHRINK process has been qualified through STM32L1xx 256k (die 427A) and the design platform through the STM32L05x 64K (die 417A) product

Product	Qualification Report
STM32L1xx	RERMCD1122
STM32L05x	RERMCD1206

All packages used for STM32L07x, are already qualified in MCD on different technology.

Package	Qualification Report	Assembly Plant location	Final Test plant location
LQFP 10x10	RERMCD1312	AMKOR ATP1	AMKOR ATP3
LQFP 7X7	RERMCD1129 RERMCD1122 RERMCD1123	STAT ChipPAC Shanghai	STAT ChipPAC Shanghai
UQFN 5X5	RERMCD1315 RERMCD1206	STAT ChipPAC Shanghai	STAT ChipPAC Shanghai
UFBGA 7x7	RERMCD1402	AMKOR ATP3	AMKOR ATP3
UFBGA 5x5	RERMCD1502	AMKOR ATP3	AMKOR ATP3
TFBGA 5x5	RERMCD1304 RERMCD1206	ST Muar	ST Muar
WLCSP	RERMCD1122	STATS ChipPAC Singapore	STATS ChipPAC Singapore

Based on these data, and according to the “RELIABILITY TESTS AND CRITERIA FOR QUALIFICATION” specification (DMS 0061692), following qualification strategy has been defined:

- Die Qualification:
  - 1 diffusion lot on 447XXXA (cut1.0)
  - 1 diffusion lot on 447XXXB (cut2.0)
  - 1 diffusion lot on 447XXXZ (cut2.1)
- Package Qualification :
  - 1 assembly lot in LQFP100, UFBGA100, UFBGA64, UQFN32, WLCSP49
  - 1 assembly lot in TFBGA64 with copper BOM to anticipate future transition
  - CDM validation on LQFP64, LQFP48, LQFP32

The reliability test plan and result summary are presented below

3.1.1 Die Related tests:

Die oriented test results

Short description						Results		
Descript.	***Test/ Method***	***Conditions***	***Sample Size***	***Criteria***	***Read out / Duration***	***Lot1*** *447XXXA (cut1.0)*	***Lot2*** *447XXXB (cut2.0)*	***Lot3*** *447XXXZ (cut2.1)*
Electrostatic discharge (Human Body Model)								
ESD HBM	ANSI/ESDA/JEDEC JS-001-2012	LQFP100	3x3	A0/R1	1KV	0/3	0/3	0/3
Electrostatic discharge (Charge Device Model)								
ESD CDM	ANSI/ESDSTM5.3.1	LQFP100	3x3	Class 3	250V	0/3	0/3	0/3
Latch-up								
LU	0018695 JESD78	130°C	3x6	A0/R1	130°C	0/6	0/6	0/3
NVM Endurance & Data Retention								
HOT EDR	JESD22-A117	105°C 3.6V	1x77	A0/R1	10K Cycles E²P 100K Cycles E²D	N.A	0/77 0/77	N.A
	JESD22-A103	HTB 150°C, no bias	1x77	A0/R1 1500h	1500h	N.A	0/77	N.A
AMBIENT EDR	JESD22-A117	25°C 3.6V	1x77	A0/R1	10K Cycles E²P 100K Cycles E²D	N.A	0/77 0/77	N.A
	JESD22-A103	HTB 150°C, no bias	1x77	A0/R1 168h	168h	N.A	0/77	N.A
COLD EDR	JESD22-A117	-40°C 3.6V	1x77	A0/R1	10K Cycles E²P 100K Cycles E²D	N.A	0/77 0/77	N.A
	JESD22-A103	HTB 150°C, no bias	1x77	A0/R1 168h	168h	N.A	0/77	N.A
High Temperature Operating Life								
HTOL	JESD22-A108	HTOL 125°C 3.6V	2x77	A0/R1 1200h	168hrs	0/77	0/77	0/77
					1200hrs	0/77	0/77	N.A

3.1.2 Package Related tests:

Package oriented test results are summarized in the following tables.

LQFP100 Package oriented test results

Short description						**Results**		
Descript.	***Test/Method***	***Conditions***	***Sample Size***	***Criteria***	***Read out /Duration***	***Lot 1***	***Lot 2***	***Lot 3***
						447XXXA Cut 1.0	447XXXB Cut 2.0	447XXXZ Cut 2.1
ESD Charge Device Model								
ESD CDM	ANSI/ESD STM5.3.1	N.A	3x3	Class 3	250V	0/3	0/3	0/3
Preconditioning: moisture sensitivity level 3								
PC	J-STD-020D JESD22-A113	Peak temperature at 260 °C, 3 IR-reflows	1x308	A0/R1		0/308	NA	NA
Temperature Humidity Bias after Preconditioning								
THB	JESD 22-A101	85°c, 85% RH, VDD=3v6	1x77	A0/R1 1000h	1000h	0/77	NA	NA
Unbiased HAST after Preconditioning								
UHAST	JESD 22-A118	Ta=130°c 85%RH	1x77	A0/R1 96h	96h	0/77	NA	NA
Thermal Cycling after Preconditioning								
TC	JESD 22-A104	-50°c/+150°c	1x77	A0/R1 1000cy	1000cy	0/77	NA	NA
High Temperature Storage Life after Preconditioning								
HTSL	JESD 22-A103	150°c	1x77	A0/R1 1000h	1000h	0/77	NA	NA

LQFP64 Package oriented test results

Short description						**Results**
Descript.	***Test/Method***	***Conditions***	***Sample Size***	***Criteria***	***Read out /Duration***	***Lot 4***
						447XXXB Cut 2.0
ESD Charge Device Model						
ESD CDM	ANSI/ESD STM5.3.1	N.A	1x3	Class 4	500V	0/3

LQFP48 Package oriented test results

Short description						Results
Descript.	*Test/Method*	*Conditions*	*Sample Size*	*Criteria*	*Read out /Duration*	*Lot 5*
						447XXXB Cut 2.0
ESD Charge Device Model						
ESD CDM	ANSI/ESD STM5.3.1	N.A	1x3	Class 4	500V	0/3

LQFP32 Package oriented test results

Short description						Results
Descript.	*Test/Method*	*Conditions*	*Sample Size*	*Criteria*	*Read out /Duration*	*Lot 6*
						447XXXB Cut 2.0
ESD Charge Device Model						
ESD CDM	ANSI/ESD STM5.3.1	N.A	1x3	Class 4	500V	0/3

UFBGA100 Package oriented test results

Short description						Results	
Descript.	*Test/Method*	*Conditions*	*Sample Size*	*Criteria*	*Read out /Duration*	*Lot 7*	*Lot 8*
						447XXXA Cut 1.0	447XXXB Cut 2.0
ESD Charge Device Model							
ESD CDM	ANSI/ESD STM5.3.1	N.A	2x3	Class 3	250V	0/3	0/3
Preconditioning: moisture sensitivity level 3							
PC	J-STD-020D JESD22-A113	Peak temperature at 260 °C, 3 IR-reflows	1x231	A0/R1		0/231	NA
Temperature Humidity Bias after Preconditioning							
THB	JESD 22-A101	85°c, 85% RH, VDD=3v6	1x77	A0/R1 1000h	1000h	0/77	NA
Thermal Cycling after Preconditioning							
TC	JESD 22-A104	-50°c/+150°c	1x77	A0/R1 1000cy	1000cy	0/77	NA
High Temperature Storage Life after Preconditioning							
HTSL	JESD 22-A103	150°c	1x77	A0/R1 1000h	1000h	0/77	NA

UFBGA64 Package oriented test results

Short description						Results
Descript.	Test/Method	Conditions	Sample Size	Criteria	Read out /Duration	Lot 9
						447XXXB Cut 2.0
ESD Charge Device Model						
ESD CDM	ANSI/ESD STM5.3.1	N.A	1x3	Class 3	250V	0/3
Preconditioning: moisture sensitivity level 3						
PC	J-STD-020D JESD22-A113	Peak temperature at 260 °C, 3 IR-reflows	1x231	A0/R1		0/231
Temperature Humidity Bias after Preconditioning						
THB	JESD 22-A101	85°c, 85% RH, VDD=3v6	1x77	A0/R1 1000h	1000h	0/77
Thermal Cycling after Preconditioning						
TC	JESD 22-A104	-65°c/+150°c	1x77	A0/R1 500cy	500cy	0/77
High Temperature Storage Life after Preconditioning						
HTSL	JESD 22-A103	150°c	1x77	A0/R1 1000h	1000h	0/77

TFBGA64 Package oriented test results

Short description						Results	
Descript.	Test/Method	Conditions	Sample Size	Criteria	Read out /Duration	Lot 10	Lot 11
						447XXXA Cut 1.0	447XXXB Cut 2.0
ESD Charge Device Model							
ESD CDM	ANSI/ESD STM5.3.1	N.A	2x3	Class 4	500V	0/3	0/3
Preconditioning: moisture sensitivity level 3							
PC	J-STD-020D JESD22-A113	Peak temperature at 260 °C, 3 IR-reflows	1x231	A0/R1		0/231	NA
Temperature Humidity Bias after Preconditioning							
THB	JESD 22-A101	85°c, 85% RH, VDD=3v6	1x77	A0/R1 1000h	1000h	0/77	NA
Thermal Cycling after Preconditioning							
TC	JESD 22-A104	-65°c/+150°c	1x77	A0/R1 500cy	500cy	0/77	NA
High Temperature Storage Life after Preconditioning							
HTSL	JESD 22-A103	150°c	1x77	A0/R1 1000h	1000h	0/77	NA

WLCSP49 Package oriented test results

Short description						**Results**	
Descript.	***Test/Method***	***Conditions***	***Sample Size***	***Criteria***	***Read out /Duration***	***Lot 12***	***Lot 13***
						447XXXA Cut 1.0	447XXXB Cut 2.0
ESD Charge Device Model							
ESD CDM	ANSI/ESD STM5.3.1	N.A	2x3	Class 4	500V	0/3	0/3
Preconditioning: moisture sensitivity level 1							
PC	J-STD-020D JESD22-A113	Peak temperature at 260 °C, 3 IR-reflows	1x308	A0/R1		0/308	NA
Temperature Humidity Bias after Preconditioning							
THB	JESD 22-A101	85°c, 85% RH, VDD=3v6	1x77	A0/R1 1000h	1000h	0/77	NA
Unbiased HAST after Preconditioning							
UHAST	JESD 22-A118	Ta=130°c 85%RH	1x77	A0/R1 96h	96h	0/77	NA
Thermal Cycling after Preconditioning							
TC	JESD 22-A104	-65°c/+150°c	1x77	A0/R1 500cy	500cy	0/77	NA
High Temperature Storage Life after Preconditioning							
HTSL	JESD 22-A103	150°c	1x77	A0/R1 1000h	1000h	0/77	NA

4 APPLICABLE AND REFERENCE DOCUMENTS

- DMS 0061692: RELIABILITY TESTS AND CRITERIA FOR QUALIFICATIONS
- SOP 2.6.11: Program management for product qualification
- SOP 2.6.19: Process maturity level
- SOP 2.6.2: Process qualification
- SOP 2.6.7: Product maturity level
- SOP 2.6.9: Package and process maturity management in Back End

- JESD22-A103: High temperature storage life
- JESD22-A108: Temperature, bias, and operating life
- JESD22-A117: Endurance and Data retention
- ANSI/ESDA/JEDEC JS-001: Electrostatic discharge (ESD) sensitivity testing human body model (HBM)
- ANSI-ESD STM5.3.1: Electrostatic discharge (ESD) sensitivity testing charge device model (CDM)
- JESD78A: IC Latch-up test
- J-STD-020D: Moisture/reflow sensitivity classification for no hermetic solid state surface mounts devices
- JESD22-A101: Steady state temperature humidity bias life test
- JESD22-A102: Accelerated moisture resistance - unbiased autoclave
- JESD22-A104: Temperature cycling
- JESD22-A118: Accelerated moisture resistance
  Unbiased Highly Accelerated Temperature and Humidity Stress Test

5 GLOSSARY

- EDR Endurance Data Retention
- HTOL High Temperature Operating Life
- HTB High Temperature Bake
- ESD HBM Electrostatic discharge (Human Body Model)
- ESD CDM Electrostatic discharge (Charge Device Model)
- LU Latch-up
- Tj : Junction Temperature
- TC : Thermal Cycling
- THB : Temperature and Humidity Bias
- HTSL : High Temperature Storage Life
- UHAST: Unbiased Highly-Accelerated Temperature and Humidity Stress Test
- PC: Preconditioning
- MSL: Moisture Sensitivity Level

6 REVISION HISTORY

Version	Date	Author	Comment
1.0	19-Oct-2015	Frederic BRAVARD	Initial Release
2.0	26-Jan-2016	Frederic BRAVARD	Add UFBGA100 & UFBGA64 results Add 447XXXZ (cut 2.1) results

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PRODUCT/PROCESS CHANGE NOTIFICATION
PCN 9604 – Additional information

STM32L04x 32K   STM32L05 64K   STM32L073x 192K dice minor revision

MMS - Microcontrollers Division (MCD)

How to order samples?

For all sample request linked to this PCN, please:

- request sample(s) through Notice tool, indicating a single Commercial Product for each request.
- insert “PCN 9604” into the remarks of your order.
- place **non standard** sample order using the following field in your system.

SO Nr: 7075S05890 Customer: 99800200 SGS-TH/USA PO Nr: Mos/TPapay/RBC-Ullmer

Company: STM

Issuing Date: 29-JUL-2015 12:07:00

ShipTo: 9980020081 SGS/USANPO

Price Policy: 05

Curr Code: 02 U.S. DOLLAR

Carrier Code: 0001 *

Carriage Code: F1 F.I.S.

Transportn Mode: 01 AIR FREIGHT

Payment Term: 0006 FREE OF CHARGE

Bill To: 9980020001 SGS-TH/USA

Confirm To: 81

Sales Rep. ID: 07R00(NO COMMISSION

Cust Serv Rep ID: 11A000 Dummy FSA SWISS

Dr

Parti

Shi

Ship

Invoic

Confn

Logist

SO Remark Details

SO Nr: 7075S05890

	SO Remark Type	Text	atus Co	Last Upda
▶	01 INVOICE & O/C REMARK	PER PCN 9108- THANK YOU	01	30-Jul-2015
*				

Public Products List

PCN Title : STM32L04x 32K STM32L05 64K STM32L073x 192K products - new die minor revision

PCN Reference : MMS/16/9604

PCN Created on : 06-Jan-2016

Subject : Public Products List

Dear Customer,

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

STM32L051K6U6	STM32L031E6Y6DTR	STM32L051K8T6
STM32L072RZI6	STM32L053C8T6TR	STM32L072RBT6
STM32L053R8H6	STM32L052R8T6	STM32L073VZT3
STM32L051K6U6TR	STM32L071KZT6	STM32L052K8T6
STM32L041K6U6D	STM32L051C8T7	STM32L052C8T6
STM32L053R8T6D	STM32L051K6T6	STM32L051C8T3
STM32L031K6U7	STM32L051T8Y6TR	STM32L052T8Y6TR
STM32L053C8T7	STM32L071RZH6	STM32L073VZT6
STM32L031G6U7	STM32L052K8T6D	STM32L031E6Y6TR
STM32L073VZT6D	STM32L071KBT6	STM32L051R6T6
STM32L051T8Y6DTR	STM32L053C8T6	STM32L051K8U3
STM32L083RZT6	STM32L073VBT6	STM32L071RZT6
STM32L052T6Y6TR	STM32L053C6T7	STM32L052K8U3TR
STM32L053C6T6	STM32L041K6T7	STM32L071CBT6
STM32L063R8T6	STM32L071CZY6TR	STM32L073VZI6
STM32L052K8U6D	STM32L031K6T6	STM32L052K8U6TR
STM32L052R8H6	STM32L051K8U7	STM32L073RZH6
STM32L073RZT6	STM32L083CBT6	STM32L051R8H7
STM32L052C8T6D	STM32L053R6H6	STM32L053R8T7
STM32L051R8H6	STM32L051K8U6DTR	STM32L081KZT6
STM32L053R8T6	STM32L051T6Y6TR	STM32L052K8U6DTR
STM32L071RBT6	STM32L052C6T6	STM32L082KZU6
STM32L031F6P7	STM32L052K6U6TR	STM32L051C6T6
STM32L082KZT6	STM32L072CZY6TR	STM32L051R8T6
STM32L051K8T7	STM32L073CZT6	STM32L063C8T6
STM32L083CZT6	STM32L052R8T7	STM32L051R8T7
STM32L083VZI6	STM32L062K8U6	STM32L051C6T6TR
STM32L062K8T6	STM32L052K8T7	STM32L051R6H6
STM32L083CZT6TR	STM32L051C8T6	STM32L051K8U6
STM32L052K6T6	STM32L041F6P7	STM32L051T8Y7DTR
STM32L051K8U7TR	STM32L053R8H6D	STM32L052T8Y7TR
STM32L052R6T6	STM32L052K8U6	STM32L031C6T7
STM32L051C8T6TR	STM32L053R6T6	STM32L052R6H6
STM32L071KZU6	STM32L071C8T6	STM32L053R8T3
STM32L041C6T7	STM32L071VZT6	STM32L072KZU6
STM32L053R8T6TR	STM32L071KBU6	STM32L053C8T6D
STM32L072RZT6	STM32L073RZT3	STM32L041K6U7

STM32L073RBT6	STM32L072RZI6D	STM32L031K6T7
STM32L052C8T7	STM32L041K6U6	STM32L083VZT6
STM32L072KZT6	STM32L051K8U6TR	STM32L052K8U3
STM32L072RBI6	STM32L041G6U7	

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