

# PRODUCT/PROCESS CHANGE NOTIFICATION PCN 12050 – Additional information

# JSCC capacity increase – for listed products

# MDG - Microcontrollers Division (MCD)

## What are the changes?

Changes described in table below for QFP and QFN packages

## **QFP** Packages :

• LQFP 48 7x7x1.4

	Existing				Added	
	canacity	capacity				
A		OT Marson Martanaia		1.05		
Assembly site	StatsChipPAC JSCC	ST Muar Malaysia	Amkor ATP	ASE	Stats ChipPAC JSCC	
	Jiangyin China		Philippines	Kaohsiung	Jiangyin China	
				Taiwan		
Leadframe	Copper Frame	Pre Plated Frame	Copper	Copper	Copper Frame	
	Spot Ag		Frame	Frame	Spot Ag	
			Spot Ag	Spot Ag		
Leadfinishing	Pure Tin (e3)	Ni Pd Au (e4)	Pure Tin (e3)	Pure Tin (e3)	Pure Tin (e3)	
(1)						
Resin (2)	Sumitomo	Sumitomo	Sumitomo	Sumitomo	Sumitomo	
	G631SHQ	G700LS	G631HQ	G631SH	G631SHQ	
Glue	Ablestik	Hitachi	Evertech	Sumitomo	Ablestik	
	3230	EN4900	AP4200	CRM	3230	
				1076WA		
Wire	Silver 96.5% 0.8mil	Gold 0.8mil	Gold 0.8mil	Gold 0.8mil	Gold 0.8mil	
		Silver 96.5% 0.8mil				
Enhanced	2 digits	No Digit (Gold)	No digit	2 digits	2 digits	
Traceability in		2 digits (Silver)				
marking						
J						

#### • LQFP 32 7x7x1.4

	Existing				Added
	capacity				capacity
Assembly site	StatsChipPAC	ST Muar	Amkor ATP	ASE Kaohsiung	Stats ChipPAC
	JSCC	Malaysia	Philippines	Taiwan	JSCC
	Jiangyin China				Jiangyin China
Leadframe	Copper Frame	Pre Plated	Copper Frame	Copper Frame	Copper Frame
	Spot Ag	Frame	Spot Ag	Spot Ag	Spot Ag
Leadfinishing (1)	Pure Tin (e3)	Ni Pd Au (e4)	Pure Tin (e3)	Pure Tin (e3)	Pure Tin (e3)
Resin (2)	Sumitomo	Sumitomo	Sumitomo	Sumitomo	Sumitomo
	G631SHQ	G700LS	G631HQ	G631SH	G631SHQ
Glue	Ablestik	Hitachi	Evertech	Sumitomo	Ablestik
	3230	EN4900	AP4200	CRM 1076WA	3230
Wire	Silver 96.5%	Gold 0.8mil	Gold 0.8mil	Gold 0.8mil	Gold 0.8mil
	0.8mil				
Enhanced	2 digits	2 digits No Digit		2 digits	2 digits
Traceability in					
marking					

## • LQFP 44 10x10x1.4

	Existing		Added	
	capacity		capacity	
Assembly site	StatsChipPAC	ST Muar	Stats ChipPAC	
	JSCC	Malaysia	JSCC	
	Jiangyin China		Jiangyin China	
Leadframe	Copper Frame	Pre Plated	Copper Frame	
	Spot Ag	Frame	Spot Ag	
Leadfinishing (1)	Pure Tin (e3)	Ni Pd Au (e4)	Pure Tin (e3)	
Resin (2)	Sumitomo	Sumitomo	Sumitomo	
	G631SHQ	G700F	G631SHQ	
Glue	Ablestik Hitachi		Ablestik	
	3230	EN4900	3230	
Wire	Silver 96.5%	Gold 0.8mil	Gold 0.8mil	
	0.8mil			
Enhanced Traceability in	2 digits	No Digit	2 digits	
marking				

### • LQFP 64 10x10x1.4

	Existing	Existing					
	capacity	capacity					
Assembly site	StatsChipPAC	ST Muar Mala	ST Muar Malaysia		ASE	Stats ChipPAC	
	JSCC			Philippines	Kaohsiung	JSCC	
	Jiangyin China				Taiwan	Jiangyin China	
Leadframe	Copper Frame	Pre Plated	Copper	Copper	Copper Frame	Copper Frame	
	Spot Ag	Frame	Frame	Frame	Spot Ag	Spot Ag	
			Spot Ag	Spot Ag			
Leadfinishing (1)	Pure Tin (e3)	Ni Pd Au (e4)	Pure Tin (e3)	Pure Tin (e3)	Pure Tin (e3)	Pure Tin (e3)	
Resin (2)	Sumitomo	Sumitomo	Sumitomo	Sumitomo	Sumitomo	Sumitomo	
	G631SHQ	G700F	G700LS	G631HQ	G631SH	G631SHQ	
Glue	Ablestik	Hitachi	Hitachi	Evertech	Sumitomo	Ablestik	
	3230	EN4900	EN4900GC	AP4200	CRM 1076WA	3230	
Wire	Silver 96.5%	Gold 1.0mil	Gold 0.8mil	Gold 0.8mil	Gold 0.8mil	Gold 0.8mil	
	0.8mil		Silver 96.5%				
			0.8mil				
Enhanced	2 digits	No Digit	2 digits	No digit	2 digits	2 digits	
Traceability in							
marking							

# QFN Packages

- UFQFPN 5X5X0.55 32L 0.5 MM PITCH
- UFQFPN 7X7X0.55 48L 0.5 MM PITCH

	Existing capacity		Added capacity
Assembly site	StatsChipPAC JSCC	ST Calamba Philippines	Stats ChipPAC JSCC
	Jiangyin China		Jiangyin China
Leadframe	Copper Frame Spot Ag	Pre Plated Frame	Copper Frame Spot Ag
Leadfinishing (1)	Pure Tin (e3)	Ni Pd Au (e4)	Pure Tin (e3)
Resin (2)	Sumitomo G770	Hitachi CEL9240ZHF10	Sumitomo G770
Glue	Ablestik 8290	Ablestik QMI519	Ablestik 8290
	/ Hitachi 4900GC		/ Hitachi 4900GC
Wire	Silver 96.5% 0.8mil	Silver 96.5% 0.8mil	Gold 0.8mil
Enhanced	2 digits	2 digits	2 digits
Traceability in			
marking			

(1) Lead color and surface finish change depending on leadfinishing.



(2) Package darkness changes depending on molding compound.

Pin1 identifier can change in terms of form and positioning. Marking position and size could be different upon assembly site, without any loss of information.

#### How to order samples?

For all samples request linked to this PCN, please:

- place a <u>Non-standard</u> sample order (choose Sample Non Std Type from pull down menu)
- insert the PCN number "PCN12050" into the NPO Electronic Sheet/Regional Sheet
- request sample(s) through Notice tool, indicating a single Commercial Product for each request

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# RERMCD2005 JSCC Capacity increase PCN12050

# **Reliability Evaluation Plan**

March 04<sup>th</sup>, 2020

MDG MCD Quality & Reliability Department



# RERMCD2005 – JSCC Capacity increase STM8 / STM32 Die Test Vehicles

Die Vehicle	Process Perimeter	Package	Wire	Die Vehicle / Rawline (*)	Number of Reliability Lots
768	F9GO2 (ST Rousset)	LQFP10*10 64L	Au	768 / 5W*768	1
423	M10 6M1T (ST Crolles)	UQFN7*7 48L	Au	423 / MI*423	1
433	M10 6M1T (TSMC)	UQFN7*7 48L	Au	433 / MI*433	1
421	M10 6M1T (TSMC)	LQFP10*10 64L	Au	421 / 5W*421	1



# RERMCD2005 – JSCC Capacity increase STM8 / STM32 Die Test Vehicles

Reliability Trial & Standard		Test Conditions	Pass Criteria	Lot Strategy	Units per Lot
PC	Pre Conditioning: Moisture Sensitivity Jedec Level 3 J-STD-020 / JESD22-A113	Bake (125°C / 24h) Soak (30°C / 60% RH / 192h) Convection reflow: 3 passes for Jedec level 3	3 Passes MSL3	4 lots	231 to 308 (**)
UHAST or AC (*)	Unbiased Highly Accelerated Temperature & Humidity Stress JESD22-A118 Autoclave or Pressure Pot JESD22-A102	130°C, 85%RH, 2 Atm 121°C, 100%RH, 2 Atm	96h	4 lots	77
TC (*)	Thermal Cycling JESD22-A104	-65°C +150°C	500Cy	4 lots	77
THB (*)	Temperature Humidity Bias JESD22-A101	85°C, 85% RH, bias	1000h	2 lots	77
HTSL (*)	High Temperature Storage Life JESD22-A103	150°C - no bias	1000h	4 lots	77
Construction Analysis	Upon ST Specifications	Focus on bonding area	No concern	1 lot by package assembly line	10
ESD CDM	ESD Charged Device Model ANSI-ESD STM5.3.1 / JESD22-C101	Aligned with device datasheet	250V to 750V	1 by package assembly line	2



(\*) Tests performed after preconditioning (\*\*) THB done on 2 lots

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