



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN APG-PTS/14/8775
Dated 03 Nov 2014

**L9958SB (UQ41): Activation of Catania 8" Wafer Fab and
Copper Wire Conversion (Au 3mils to Cu 2.5mils)**

Table 1. Change Implementation Schedule

Forecasted implementation date for change	24-Apr-2015
Forecasted availability date of samples for customer	21-Nov-2014
Forecasted date for STMicroelectronics change Qualification Plan results availability	13-Mar-2015
Estimated date of changed product first shipment	24-Apr-2015

Table 2. Change Identification

Product Identification (Product Family/Commercial Product)	L9958SB
Type of change	Package assembly material change, Waferfab additional location
Reason for change	Company Road Map
Description of the change	We are going to activate Catania 8 inches wafer fab (CT8) on L9958SB (silicon line UQ41) and change the wire bonding replacing 3 mils gold (Au) wires with 2.5 mils copper (Cu) wires.
Change Product Identification	Dedicated Finished-Good code
Manufacturing Location(s)	1]St Muar - Malaysia

DOCUMENT APPROVAL

Name	Function
Pernigotti, Elena Maria	Marketing Manager
Cassani, Fabrizio	Product Manager
Pintus, Alberto	Q.A. Manager



L9958SB (UQ41): Activation of Catania 8" Wafer Fab and Copper Wire Conversion (Au 3mils to Cu 2.5mils)

WHAT:

We are going to activate Catania 8 inches wafer fab (CT8) on L9958SB (silicon line UQ41) and change the wire bonding replacing 3 mils gold (Au) wires with 2.5 mils copper (Cu) wires.

Together with Catania dual source activation, we are going to release a new silicon version (Metal Change) in order to improve the CPK for one specific parameter.

The same metal change has already been implemented on the metal option product (UM31 that is running at rate of 2Mpcs/Y) on both Agrate and Catania silicon, showing good CPK.

Risk Assessment: the performance of the metal option product currently in production did not show any issue. Based on this evaluation we are planning to apply the same metal change modification together with the Dual Source activation.

WHY:

Company Roadmap

HOW:

See enclosed qualification plan.

WHEN:

Change will be implemented according the following schedule:

Availability of samples:	November 2014
Qualification results:	March 2015
Implementation date for change:	April 2015



UQ41/L9958SB

BCD6s Technology

PowerSO 16

- Copper Wire Conversion (Au 3mil to Cu 2.5mil)
- Activation of Catania Diffusion Plant

October, 2014



UQ41 – L9958SB

ID Card

UP41

- Commercial Product: L9958SB
- Technology: BCD6s (Agrate Diffusion Plant)
- Package: PowerSO16 (Muar Assy Plant)
- Bonding: 3.0mil Au & 1.3mil Au

- ❑ UQ41 is a metal option of UM31 product.
- ❑ UM31 is diffused both in Agrate and Catania Plants, and assembled in Muar Plant in PowerSO20 and PowerSSO24 packages.



UQ41 – L9958SB

Description of the change

- ❑ For capacity increase and manufacturing flexibility we are going to activate Catania WaferFab as additional diffusion Plant beside Agrate
- ❑ In order to improve the CPK for one specific parameter, we take the opportunity of the dual source activation to release a new silicon version (Metal Change), already implemented on the metal option product (UM31).
- ❑ Progressing on the activities related to copper wire bonding introduction, we are going to replace all 3mil Au wires with 2.5mil Cu wires.
Thin Au wires (1.3mil) will not be converted to Cu.



UQ41 - Qualification Plan

Copper wire conversion (3mil Au to 2.5mil Cu) & Catania waferfab activation

- Stress tests and samples size according to AEC-Q100 guidelines

Test Name	Conditions	Lot				Analysis
		Agrate 2.5mil Cu (NN)	Catania 2.5mil Cu (LL)	Catania 2.5mil Cu (HH)	Catania 2.5mil Cu (NN)	
JL3 (JEDEC J-STD-020D)	24h bake @ 125°C 192h @ 30°C / 60% RH Reflow simulation (3times)	200pcs	200pcs	200pcs	--	ATE SAM
JL3 + TC	TA=-50/+150°C, 1000 cycles TA=-50/+150°C, 2000(*) cycles	77pcs	77pcs	77pcs	--	ATE SAM WBP
HTS	TA=150°C, 1000h TA=150°C, 2000h(*)	45pcs	45pcs	45pcs	--	ATE WBP
JL3 + ES	100 TC (-65/+150°C) + 96h AC (2atm, 121°C)	77pcs	77pcs	77pcs	--	ATE WBP
JL3 + THB	TA=85°C, RH=85%, 1000h TA=85°C, RH=85%, 2000h(*)	40pcs	40pcs	--	--	ATE
ESD & LU		--	--	--	200pcs	ATE



(*) For knowledge only

- ❖ (NN) = Nominal Wire Bonding Parameters
- ❖ (LL) = Lower Corner Wire Bonding Parameters
- ❖ (HH) = Higher Corner Wire Bonding Parameters

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