PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MMS-SNV/07/2541
Notification Date 05/21/2007

Bonding wire and marking change on TSSOP8 AMKOR

SNV - MEMORY

Table 1. Change Identification

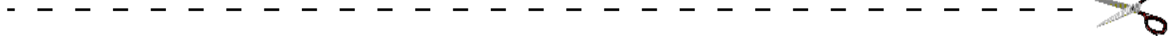
Product Identification (Product Family/Commercial Product)	EEPROM in TSSOP8 produced in Amkor
Type of change	Package assembly process change
Reason for change	Optimize wire diameter for advanced designs and marking rationalization
Description of the change	- Bonding wire diameter reduction - Back side marking removal - Additional digit on top side marking
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Change effective from Date code Week 27 onwards
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	02-Jul-2007
Forecasted availabillity date of samples for customer	16-Jul-2007
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	14-May-2007
Estimated date of changed product first shipment	16-Jul-2007

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt	**PCN MMS-SNV/07/2541**
Please sign and return to STMicroelectronics Sales Office	**Notification Date 05/21/2007**
☐ Qualification Plan Denied	Name:
☐ Qualification Plan Approved	Title:
	Company:
☐ Change Denied	Date:
☐ Change Approved	Signature:

Remark

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DOCUMENT APPROVAL

Name	Function
Poli, Christian	Division Marketing Manager
Rodrigues, Benoit	Division Product Manager
Yackowlew, Nicolas	Division Q.A. Manager

PRODUCT / PROCESS CHANGE NOTIFICATION

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What is the change?
The diameter of the Gold bonding wire used in Amkor (Philippines) subcontractor will be reduced from 1mil to 0.8mil on all EEPROM products assembled in TSSOP8 package. This change has no impact on the electrical characteristics specified in the related datasheets.

Concurrent to this change, the marking of the EEPROM products assembled in TSSOP8 package in Amkor will change for more information on the package top side. This top side marking change will accompany with the removal of the back side marking.

Why?
The strategy of STMicroelectronics Memory Division is to support the growth of our customers on a long-term basis. In line with this commitment and in order to adapt to the advanced designs, which are using smaller bonding pads, the TSSOP8 package assembled in the Amkor (Philippines) subcontractor assembly plant will switch to the new wire diameter.

In order to rationalize the marking, the TSSOP8 package assembled in Amkor (Philippines) subcontractor will be aligned to the same marking as ST Muar (Malaysia).

When?
The assembly of the EEPROM products in TSSOP8 package using the 0.8mil Gold bonding wire (and the new marking) will start at the Amkor (Philippines) subcontractor from Week 27 / 2007 and the volume shipments could start from Week 29 / 2007 onward.

How will the change be qualified?
The qualification will be performed using the standard STMicroelectronics Corporate Procedures for Quality and Reliability. The Qualification Report QREE0708 will be available early May 2007.

(No qualification is required concerning the changes affecting the marking)

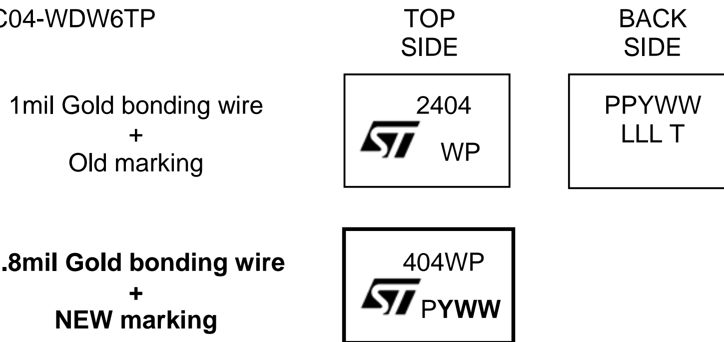
How can the change be seen?

From the cut off **date code 727** (Week 27, 2007), all shipments will see the **new Gold bonding wire diameter at 0.8mil** and the **new marking**.

On the DEVICE MARKING, the **date code** will appear on the top side, coded by "**YWW**" identifiers, corresponding to **Y**ear & **W**ork **W**eek of assembly.

➔ *Example for M24C04-WDW6TP (4Kb, 2.5V to 5V Vcc range, TSSOP8 RoHS* compliant package)*

TSSOP8
M24C04-WDW6TP



The traceability for each device is as follows:

P(PP) = Assembly country and plant: "B" for Amkor (Philippines)
WX = Wafer diffusion plant
Y = Last digit of the Year of Assembly: <u>7 for Year 2007</u>
WW = Assembly Week code: <u>starting from 27 for Week 27</u>
LLL = chronological sequence
T = Process Technology code/ Wafer Fab ID

*RoHS: Restriction of the use of certain Hazardous Substances in electrical and electronic equipments

Appendix A - Product / Process Change Notification

Table 1: Product / Process Change Notification

Product family / Commercial products:	EEPROM in TSSOP8 produced in Amkor
Customer(s):	All
Type of change:	Assembly Process change
Reason for the change:	Optimize wire diameter for advanced designs and marking rationalization
Description of the change:	- Bonding wire diameter reduction - Back side marking removal - Additional digit on top side marking
Forecast date of change:	Week 27 / 2007
Forecast availability date of qualification samples for the customer(s):	Week 29 / 2007
Forecast date for the internal STMicroelectronics Change, Qualification Report availability:	Week 18 / 2007
Marking to identify the changed product:	Change effective from Date code Week 27 onwards
Description of the qualification program:	STMicroelectronics standard qualification procedure
Product Line(s) and/or Part Number(s):	See list in appendix B
Manufacturing location:	Amkor (Philippines) subcontractor assembly line
Estimated date of first shipment:	Week 29 / 2007
Division Product Manager: B. RODRIGUES	Date:
Group QA Manager : N. YACKOWLEW	Date:

Appendix B – Commercial products:

I²C products:	SPI products:	Microwire products:
M24C01-WDW6TP	M95040-WDW6TP	M93C46-WDW6TP
M24C01-RDW6TP	M95080-RDW6TP	M93C56-WDW6TP
M24C02-WDW6TP	M95080-WDW6P/S	M93C66-WDW6TP
M24C02-WDW6TP/S	M95080-WDW6TP/S	
M24C02-RDW6TP	M95080-WDW6TP	
M24C04-WDW6TP	M95160-WDW6P/S	
M24C04-WDW6TP/S	M95160-WDW6TP/S	
M24C04-RDW6TP	M95320-WDW6TP	
M24C08-WDW6TP	M95320-RDW6TP	
M24C08-WDW6TP/S	M95320-WDW6TP/P	
M24C08-RDW6TP	M95640-RDW6TP	
M24C16-WDW6TP/S	M95640-WDW6TP/P	
M24C16-RDW6TP	M95640-WDW6TP	
M24C16-WDW6TP	M95128-RDW6TP	
M24C16-WMN6TP	M95256-RDW6TP	
M24C32-RDW6TP	M95256-WDW6TP	
M24C32-WDW6TP	M95512-RDW6TP	
M24C32-FDW5TP	M95512-WDW6TP	
M24C64-WDW6TP		
M24C64-FDW5TP		
M24128-BWDW6P		
M24128-BWDW6TP		
M24256-BRDW6TP		
M24256-BWDW6TP		
M24512-RDW6TP		
M24512-WDW6TP		
M34C02-RDW6TP		
M34E02-FDW1TP		

Appendix C – Qualification plan:

PRODUCT DESCRIPTION

	Devices to qualify
Product name	All*
Process	All*
Diffusion	All*
Die size	All* from 1mm² to 5.2mm²

All*: concerns all products already qualified

PACKAGE DESCRIPTION

BOM REFERENCE:

	Reference	Description
Die attach material	5XX1011*	ABLESTICK 8290
Frame	All	Amkor TSSOP(4.4) 8L NiPdAu
Molding compound	5ST1506*	Sumitomo G700K
Wire	To be codified	Au 0.8 mil

SIMILARITY

Same products assembled with 0.8mil gold wire in TSSOP8 line in Muar plant

RELIABILITY

Number of lots required:

	Qualification vehicle
Product name	M24C64
Process	F6S26DP
Diffusion	Chartered
Die size	2.7mm²
Number of lots	3

BOM REFERENCE: 1F013411 except the wire

	Reference	Description
Die attach material	5XX1011*	ABLESTICK 8290
Frame	5FT2650*	Amkor TSSOP(4.4) 8L 3x1.8 NiPdAu
Molding compound	5ST1506*	Sumitomo G700K
Wire	To be codified	Au 0.8 mil

Package-related reliability tests

Test Procedure	Method	Test Conditions	Criteria
Preconditioning	AEC - Q100 - J–STD-020C	Level 1	0 fail
Pressure Pot	AEC - Q100 - JA 102 JESD22-A102	121°C, 2atm, 100% RH, 168 hr	0/80
Temperature and Humidity Bias	AEC - Q100 - JA 101 JESD22-A101	85°C, 85% RH, 5.5V, 1000 hr	0/80
High Temperature Bake	AEC – Q100 JA 103 JESD22-A103B	150°C, 1000hr	0/80
Temperature Cycling	AEC - Q100 - JA 104 JESD22-A104B	-65°C / 150°C, 500 cycles	0/80
Thermal Shock	Mil Std 883 Method 1011B JESD22-A106B	-55°C / 125°C, 200 shocks	0/25

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Document Revision History		
Date	Rev.	Description of the Revision
Mar. 23, 2007	1.00	First draft creation Christian POLI

Used Source Documents		
Source document Title	Rev.:	Date:

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