PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MMS-SNV/07/2474
Notification Date 04/25/2007

Gold bonding wire diameter change for all EEPROM products assembled in SO8N package in AMKOR (Philippines) subcontractor

SNV - MEMORY

Table 1. Change Identification

Product Identification (Product Family/Commercial Product)	EEPROM in SO8N produced in Amkor
Type of change	Package assembly process change
Reason for change	Optimize wire diameter for advanced designs
Description of the change	Bonding wire diameter reduction
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	01-Jul-2007
Forecasted availabillity date of samples for customer	20-Jul-2007
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	18-Apr-2007
Estimated date of changed product first shipment	20-Jul-2007

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	

Customer Acknowledgement of Receipt **PCN MMS-SNV/07/2474**

Please sign and return to STMicroelectronics Sales Office **Notification Date 04/25/2007**

☐ Qualification Plan Denied
☐ Qualification Plan Approved

☐ Change Denied
☐ Change Approved

Name:
Title:
Company:
Date:
Signature:

Remark

DOCUMENT APPROVAL

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

PRODUCT / PROCESS
CHANGE NOTIFICATION

Gold bonding wire diameter change for all EEPROM products assembled in SO8N package in AMKOR (Philippines) subcontractor

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 SO8N package.

Why?

The strategy of STMicroelectronics Memories 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 SO8N package assembled in the Amkor (Philippines) subcontractor assembly plant will switch to the new wire diameter.

When?

The assembly of the EEPROM products in SO8N package using the 0.8mil Gold bonding wire 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 has been performed using the standard STMicroelectronics Corporate Procedures for Quality and Reliability.
The qualification report QREE0707 is available.

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**.

On the DEVICE MARKING, the **date code** is appearing coded by “**YWW**” identifiers, corresponding to **Y**ear & **W**ork **W**eek of assembly.

➔ *Example for M24C04-WMN6TP (4Kb, 2.5V to 5V Vcc range, SO8N RoHS* compliant package)*

SO8N
M24C04-WMN6TP

24C04WP
P**YWW**T

The traceability for each device is as follows:

P = 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>
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 SO8N produced in Amkor
Customer(s):	All
Type of change:	Assembly Process change
Reason for the change:	Optimize wire diameter for advanced designs
Description of the change:	Bonding wire diameter reduction
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 15 / 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: April 10, 2007
Group QA Manager : N. YACKOWLEW	Date: April 14, 2007

Appendix B – Commercial products (*):

I²C products:	Microwire products:	SPI products:
M24C01-WMN6P	M93C46-WMN6P	M95512-WMN6P
M24C02-WMN6P	M93C56-WMN6P	M95512-RMN6P
M24C04-WMN6P	M93C66-WMN6P	
M24C08-WMN6P	M93C46-WMN6P/S	
M24C16-WMN6P	M93C56-WMN6P/S	
M24C16-RMN6P	M93C66-WMN6P/S	
M24C32-WMN6P		
M24128-BWMN6P		
M24256-BWMN6P		
M24512-WMN6P		
M24512-RMN6P		
M24C01-WMN6P/S		
M24C02-WMN6P/S		
M24C04-WMN6P/S		
M24C08-WMN6P/S		
M24C16-WMN6P/S		

(*): and associated Tape & Reel devices

Appendix C – Qualification plan:

PRODUCT DESCRIPTION

	Devices to qualify
Product name	All*
Process	All*
Diffusion	All*
Die size	All* from 1mm^2 to 5.2mm^2

All*: concerns all products already qualified

PACKAGE DESCRIPTION

BOM REFERENCE:

	Reference	Description
Die attach material	5XX1216*	Glue Ablestick 8290
Frame	All	SOIC(.150) 8L NiPdAu
Molding compound	5ST1216*	Sumitomo G600
Wire	To be codified	Au 0.8 mil

SIMILARITY

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

RELIABILITY

Vehicle choice: small die size is the most critical for wire sweeping

Number of lots required:

	Qualification vehicle
Product name	M24C04
Process	CMOSF6S-36
Diffusion	Chartered
Die size	1.4mm^2
Num of lots	3

BOM REFERENCE: 1F013300 except wire

	Reference	Description
Die attach material	5XX1216*	Glue Ablestick 8290
Frame	5FT3300*	SOIC(.150) 8L 90x90 NiPdAu HDLF
Molding compound	5ST1216*	Sumitomo G600
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, 1000hrs	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

PRODUCT / PROCESS CHANGE NOTIFICATION

Gold bonding wire diameter change for all EEPROM products assembled in SO8N package in AMKOR (Philippines) subcontractor

Document Revision History		
Date	Rev.	Description of the Revision
Mar. 21, 2007	1.00	First draft creation **Christian POLI**

Used Source Documents		
Source document Title	Rev.:	Date:

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries(‘‘ST’’) reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST’s terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST’S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND / OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZED ST REPRESENTATIVE, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS ‘‘AUTOMOTIVE GRADE’’ MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER’S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners

ⓒ2007 STMicroelectronics - All rights reserved.

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan -
Malaysia - Malta - Morroco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com