



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MMS-SNV/07/2262
Notification Date 01/10/2007

**M24C04-R (1.8V to 5.5V Vcc range), 4Kbit Serial I²C Bus
EEPROM Redesign and Die Optimization**

SNV - STANDARD MEMORY

Table 1. Change Identification

Product Identification (Product Family/Commercial Product)	M24C04 1.8V to 5.5V Vcc range
Type of change	Product design change
Reason for change	Production cap. increase & line up to state of the art of low volt. desig
Description of the change	New design
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Process Techno/Wafer fab id is "Q" for New design
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	11-Mar-2007
Forecasted availability date of samples for customer	08-Jan-2007
Forecasted date for STMicroelectronics change Qualification Plan results availability	08-Jan-2007
Estimated date of changed product first shipment	11-Mar-2007

Table 3. Change Responsibility

	Name	Signature	Date
Division Product Manager	C. DARDANNE		Jan.08 ,07
Division Q.A. Manager	N. YACKOWLEW		Jan.08 ,07
Division Marketing Manager	B. RODRIGUES		Jan.08 ,07

Table 4. List of Attachments

Customer Part numbers list	
Qualification Plan results	

----- 

Customer Acknowledgement of Receipt		PCN MMS-SNV/07/2262
Please sign and return to STMicroelectronics Sales Office		Notification Date 01/10/2007
<input type="checkbox"/> Qualification Plan Denied <input type="checkbox"/> Qualification Plan Approved <input type="checkbox"/> Change Denied <input type="checkbox"/> Change Approved	Name:	
	Title:	
	Company:	
	Date:	
	Signature:	
Remark		



PRODUCT / PROCESS CHANGE NOTIFICATION

M24C04-R (1.8V to 5.5V Vcc range), 4Kbit Serial I²C Bus EEPROM Redesign and Die Optimization

What is the change?

The M24C04-R (Vcc 1.8V to 5.5V) 4 Kbit I²C bus Serial EEPROM device, processed in the CMOSF6SP/DM (Single Poly/Double Metal) 36% shrink Process Technology and currently produced in the ST AMK (Singapore) 6 inch wafer diffusion plant, will be redesigned for improved performances using the same Process Technology in the same wafer diffusion plant.

Why?

The STMicroelectronics Serial Non-Volatile Memories strategy is to support the growth of our customers on a long-term basis. In line with this commitment, the qualification of the redesigned M24C04 die in the same CMOSF6SP/DM Process Technology will increase the production capacity throughput, reduce the lead-time and consequently improve the service to our customers.

When?

The production of the new M24C04 in the ST AMK (Singapore) 6 inch wafer diffusion plant will ramp up from January 2007 and shipments will start from March 2007 onward.

The phase out of the current version of the M24C04 will start from March 2007 with a completion planned for June 2007.

How will the change be qualified?

The new version of the M24C04 has been qualified using the standard ST Microelectronics Corporate Procedures for Quality and Reliability.

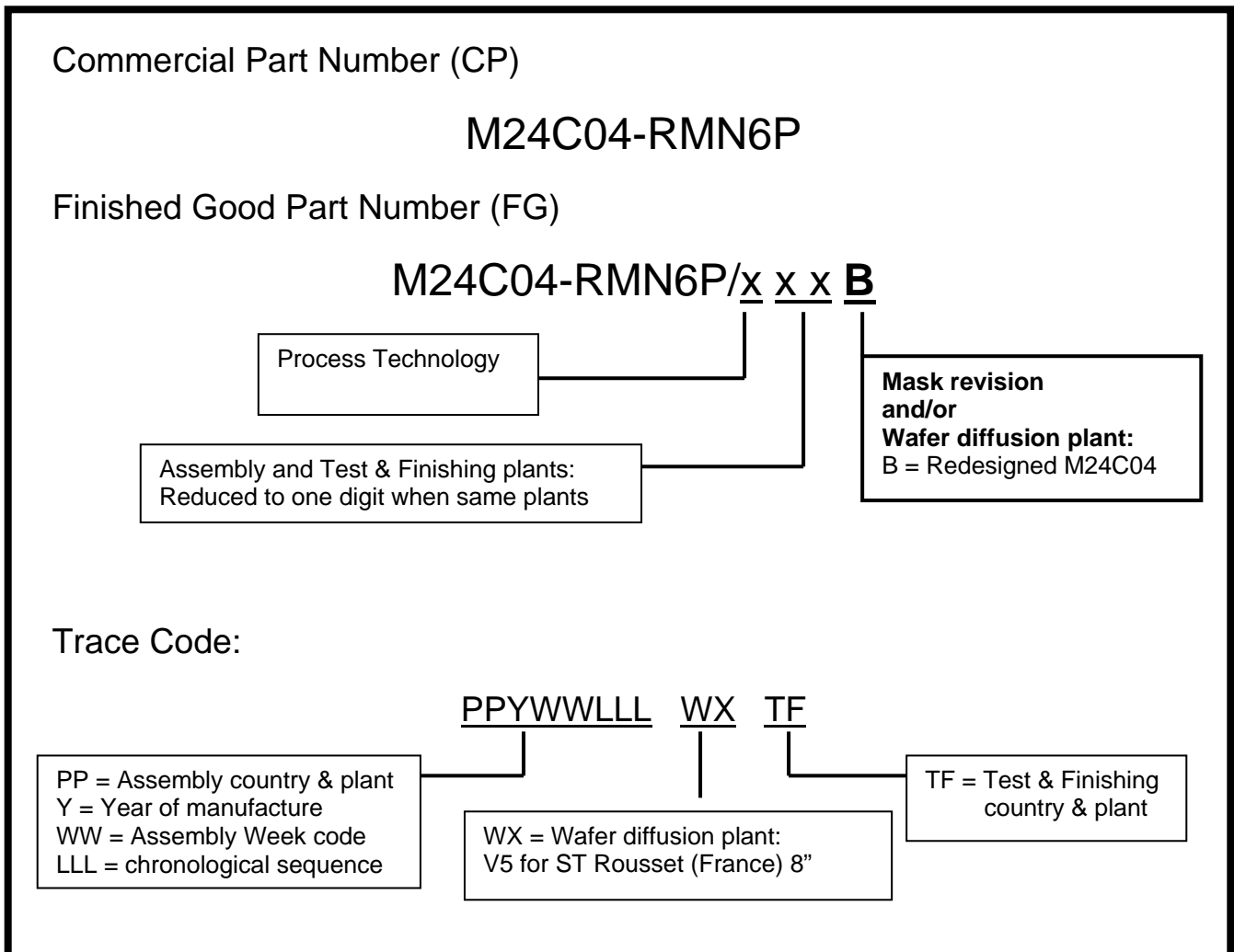
The qualification report QREE0524 will be available by January 2007.

How can the change be seen?

- BOX LABEL MARKING

On the BOX LABEL MARKING, the change is visible inside the Finished Good Part Number: the **Mask revision and/or Wafer diffusion plant** identifier is “**B**” for the **redesigned version**, the identifier being “**A**” for the current version.

→ Example for M24C04-RMN6P (1.8V to 5.5V Vcc range, SO8N RoHS* compliant package)







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

How can the change be seen?

- DEVICE MARKING

On the DEVICE MARKING of the SO8N package, the change is visible on the top side marking, inside the second line of the trace code (PYWWT): the last digit “T” for the **Process Technology/wafer fab** identifier is “Q” for the **redesigned version**, the identifier being “G” for the current version.

On the DEVICE MARKING of TSSOP8 package, the change is visible on the back side of the package, on the first line of the marking, inside the second line of the trace code: the digit for the **Process Technology/wafer fab** identifier is “Q” for the **redesigned version**.

	Previous M24C04	New M24C04
SO8N M24C04-RMN6P	24C04RP  PYWWG	24C04RP  PYWWQ
	Muar	Amkor
TSSOP8 M24C04-RDW6P (TOP SIDE)	404RP  PYWW	2404  RP
TSSOP8 M24C04-RDW6P (BACK SIDE)		PPYWW LLL Q

The traceability for each device is as follows:

P (or PP) Y WW T LLL

PP = Assembly country & plant
 Y = Last digit of the Year of Assembly
 WW = Assembly Week code
 T = Process Technology / Wafer Fab
 LLL = chronological sequence

Appendix A- Product Change Information

Product family / Commercial products:	M24C04 1.8V to 5.5V Vcc range
Customer(s):	All
Type of change:	Redesign and die optimization
Reason for the change:	Production capacity increase and line up to state of the art of low voltage design
Description of the change:	New design
Forecast date of the change:	March 2007
Forecast availability date of qualification sample for the customer(s):	January 2007
Forecast date for the internal STMicroelectronics change, Qualification report availability:	January 2007
Marking to identify the changed product:	Process Technology/Wafer fab identifier is "Q" for the redesigned version
Description of the qualification program:	Standard ST Microelectronics Corporate Procedures for Quality and Reliability
Product Line(s) and/or Part Number(s):	M24C04-RMN6P - M24C04-RMN6TP M24C04-RDW6P - M24C04-RDW6TP
Manufacturing location:	ST AMK (Singapore) 6 inch wafer fab
Estimated date of first shipment:	March 2007
Division Product Manager: C. DARDANNE	Date: December 19, 2006
Group QA Manager: F. REDAELLI	Date: January 03, 2007

APPENDIX B: Qualification Plan:

PRODUCT DESCRIPTION

	Device to qualify	Qualified similar device
Product name	M24C04GB (together with M24C08GB)	M24C16GA
Memory size	4Kb	16Kb

SIMILARITY

The CMOSF6SPDM 36% Process Technology is already qualified in ST Ang Mo Kio 6 inch wafer fab with the M24C16G (QREE0320) which has a larger or equivalent memory array.

CHARACTERIZATION

Table 1. Characterization requirements.

Number of lots	Parameters	Vcc range	Temperature range
3	All	1.8V/5.5V	-40°C/85°C

RELIABILITY

Table 2. Product qualification. Die-related reliability tests

EEPROM

Abrv.	Test Procedure	Method	Test Conditions	Num of lots	Criteria
EDR	NVM Endurance	AEC-Q100-005	1Mcyc @25C or 100Kcyc @125C cycles, then: - HTSL 150°C, 500hr - HTOL 150°C, 408 hr	1 1	0/77 0/77
ESD HBM	Electrostatic Discharge	AEC-Q100-002	Human Body Model: 1.5kOhms, 100pF 4000V	1	0/9
ESD MM	Electrostatic Discharge	AEC-Q100-003	Machine Model: 0kOhms, 200pF 400V	1	0/9
LU	Latch-up	AEC-Q100-004	Max operating temperature	1	0/6
W/E	Erase/Write cycles and Bake	Internal.	1,000,000 E/W cycles Bake: 150°C, 168hr or 200°C, 48hr	1	0/77

Document Revision History

Date	Rev.	Description of the Revision
Dec. 14, 2006	1.00	First draft creation (Christian POLI)
Dec. 19, 2006		Signed off C.DARDANNE
Jan. 03, 2007		Signed off F. REDAELLI

Source Documents & Reference 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 REPRESENTATIVE OF ST, ST PRODUCTS ARE NOT DESIGNED, 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.

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 - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com

