



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MMS-SNV/07/2424
Notification Date 04/05/2007

**STMicroelectronics AMK (Singapore) new and additional
Wafer diffusion plant for the 32Kbit I²C Bus Based Serial EEPROM Memories
SNV - MEMORY**

Table 1. Change Identification

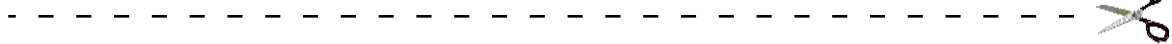
Product Identification (Product Family/Commercial Product)	M24C32 Product family
Type of change	Waferfab location change
Reason for change	Second source and production capacity increase
Description of the change	ST AMK (Singapore) new and additional wafer diffusion plant
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Process Techno. id is "C" for M24C32 in ST AMK
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	01-Aug-2007
Forecasted availability date of samples for customer	01-May-2007
Forecasted date for STMicroelectronics change Qualification Plan results availability	01-Jun-2007
Estimated date of changed product first shipment	01-Aug-2007

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt		PCN MMS-SNV/07/2424				
Please sign and return to STMicroelectronics Sales Office		Notification Date 04/05/2007				
<input type="checkbox"/> Qualification Plan Denied <input type="checkbox"/> Qualification Plan Approved <input type="checkbox"/> Change Denied <input type="checkbox"/> Change Approved	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Name:</td></tr> <tr><td style="padding: 2px;">Title:</td></tr> <tr><td style="padding: 2px;">Company:</td></tr> <tr><td style="padding: 2px;">Date:</td></tr> <tr><td style="padding: 2px;">Signature:</td></tr> </table>	Name:	Title:	Company:	Date:	Signature:
Name:						
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DOCUMENT APPROVAL

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



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This PCN replaces NVM06/1875 from June 2006

What is the change?

The M24C32, I²C bus based EEPROM, will now also be diffused in the ST AMK (Singapore) 6 inch wafer diffusion plant using the same CMOSF6DP/DM 26% shrink Process Technology already in production in the Chartered (Singapore) 8 inch wafer diffusion plants.

Why?

The strategy of the STMicroelectronics Memories division is to support the growth of our customers on a long-term basis. In line with this commitment, the qualification of the ST AMK (Singapore) 6 inch wafer diffusion plant will secure a second source. It will also increase the Serial EEPROM memory production capacity and throughput, reduce the lead-time and consequently improve the service to our customers.

When?

The production of the M24C32 in the ST AMK (Singapore) 6 inch wafer diffusion plant will ramp up in June 2007 and shipments could start from August 2007 onward.

How will the change be qualified?

The CMOSF6DP26% Process Technology has been already qualified in ST AMK (Singapore) 6" wafer diffusion plant using the M24C64 product (Qualification report QREE0604) for standard range products.

The M24C32 family will be qualified using the standard STMicroelectronics Corporate Procedures for Quality and Reliability, the Qualification Report QREE0612 will be available in June 2007.

How can the change be seen?

- BOX LABEL MARKING

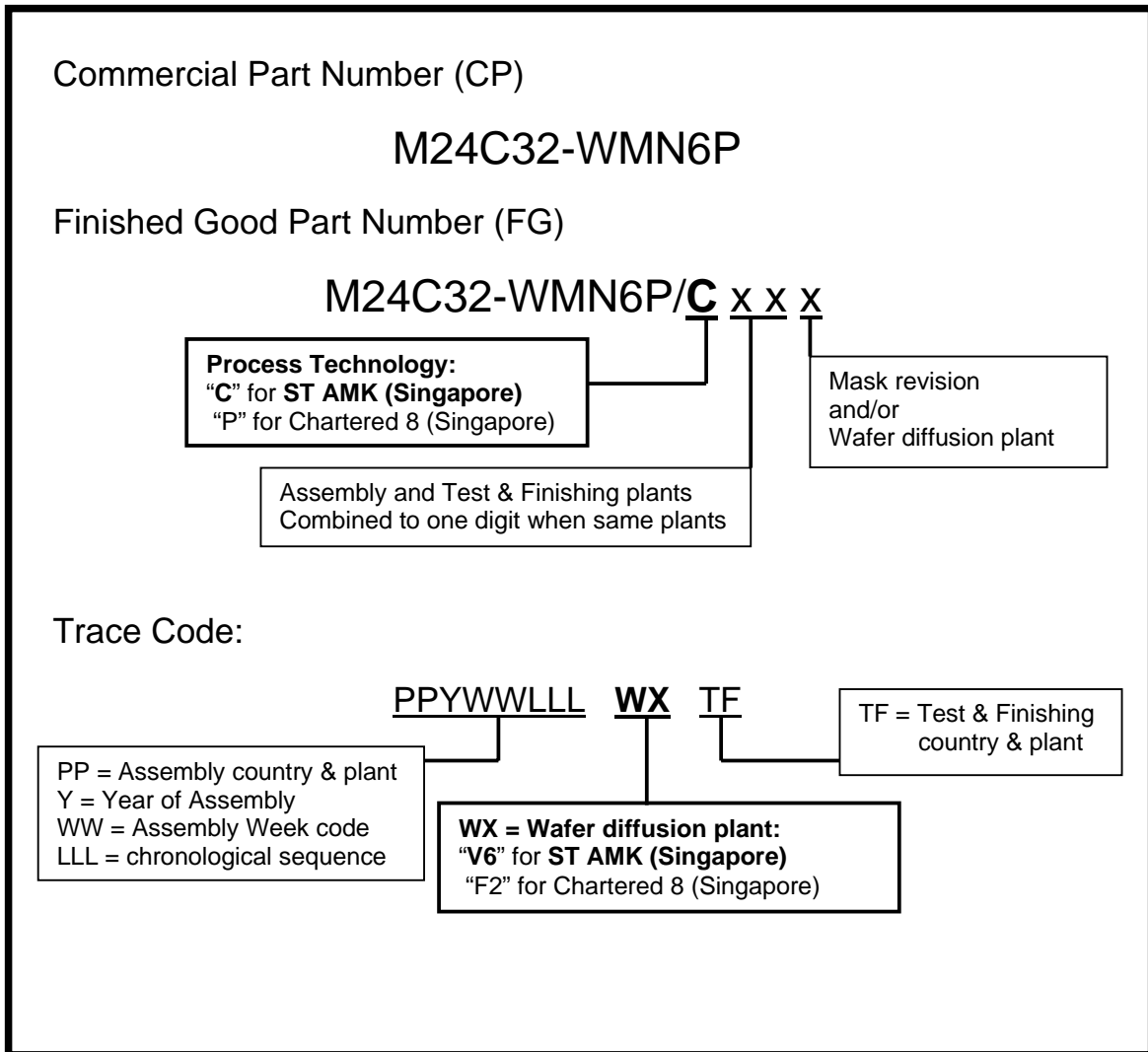
On the BOX LABEL MARKING, the change is visible inside the Finished Good Part Number:

The **Process Technology** identifier is “C” for **ST AMK (Singapore)**, the identifier being “P” for Chartered (Singapore).

The change is also visible inside the Trace Code:

The **Process Technology** identifier is “V6” for **ST AMK (Singapore)**, the identifier being “F2” for Chartered 8 (Singapore).

→ Example for M24C32-WMN6P (32Kbit, 2.5V to 5.5V Vcc range, SO8 RoHS* compliant package)









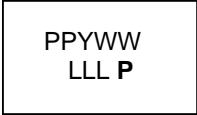
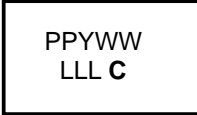
*RoHS: Restriction of the use of certain Hazardous Substances in electrical and electronic equipments

How can the change be seen?

- DEVICE MARKING

On the DEVICE MARKING, the change is visible on the top side marking, inside the second line of the trace code (COO YWWT):

The **Process Technology** identifier is “C” for **ST AMK (Singapore)**, the identifier being “P” for Chartered 8 (Singapore).

	Chartered 8" (Singapore)	ST AMK 6" (Singapore)
SO8 Example: M24C32-RMN6TP		
PDIL8 M24C32-WBN6P		
TSSOP8 (Amkor) Example: M24C32-WDW6TP TOP SIDE		
BACK SIDE		

The traceability for each device is as follows:

<p>P (or PP) = Assembly country and plant Y = Last digit of the Year of Assembly WW = Assembly Week code T = Process Technology code/ Wafer fab ID: LLL = Chronological sequence COO = Country-of-Origin E = ECOPACK® identifier</p>	<p>“C” for ST AMK (Singapore) “P” for Chartered 8 (Singapore)</p>
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For the **MLP8** package, for package size reason, the change is only visible inside the Finished Good Part Number appearing on the BOX LABEL MARKING (see “Process Technology identifier” in previous page).

APPENDIX A - Product / Process Change Notification

Product family / Commercial products:	M24C32 Product family
Customer(s):	All
Type of change:	Additional wafer diffusion plant
Reason for the change:	Second source and production capacity increase
Description of the change:	ST AMK (Singapore) new and additional wafer diffusion plant
Forecast date of the change:	August 2007
Forecast availability date of qualification sample for the customer(s):	May 2007
Forecast date for the internal STMicroelectronics change, Qualification report availability:	June 2007
Marking to identify the changed product:	Process and fab ID
Description of the qualification program:	Standard ST Microelectronics Corporate Procedures for Quality and Reliability
Product Line(s) and/or Part Number(s):	See appendix B
Manufacturing location:	STMicroelectronics AMK (Singapore) 6 inch wafer diffusion plant
Estimated date of first shipment:	August 2007 (or earlier upon customer approval)
Division Product Manager: B. RODRIGUES	Date: Mar. 23, 2007
Group QA Manager: N. YACKOWLEW	Date: Mar. 29, 2007

APPENDIX B: Concerned Products

Commercial sales types
M24C32-RDW6TP
M24C32-RMB6TG
M24C32-RMN6P
M24C32-RMN6TP
M24C32-WBN6P
M24C32-WDW6TP
M24C32-WMN6P
M24C32-WMN6TP
M24C32-FMB5TG
M24C32-FDW5TP

APPENDIX B: Qualification Plan

	Device to qualify	Qualified similar device
Product name	M24C32	M24C64PA
Memory size	32K	64K
Bus protocol	I2C	I2C
Process	F6DP26%	F6DP26%
Die size		larger

SIMILARITY

The CMOSF6DP26% Process Technology has been already qualified in ST AMK (Singapore) 6" wafer diffusion plant using the M24C64 product (QREE0604) for standard range products.

CHARACTERIZATION

Table 1: Characterization requirements

Number of lots	Parameters	Vcc range	Temperature range
3	All	1.8/5.5V & 2.5/5.5V	-40°C/85°C

RELIABILITY

Table 2: Product qualification - Die-related reliability tests

Abrv.	Test Procedure	Method	Test Conditions	Num of lots	Criteria
EDR	NVM Endurance	AEC-Q100-005	1000000 cycles, then: - HTSL 150°C, 1000hr - HTOL 150°C, 1000 hr	1 1	0/80 0/80
HTOL	Operating Life Test	AEC-Q100-005	See above line	1	0/80
HTSL	High Temperature Storage	AEC-Q100-005	See above line	1	0/80
W/E	Erase/Write cycles and Bake	Internal.	1,000,000 E/W cycles Bake: 200°C, 48hr	1	0/80
ESD HBM	Electrostatic Discharge	AEC-Q100-002	Human Body Model: 1.5kOhms, 100pF – Up to 4000V	1	0/81
ESD MM	Electrostatic Discharge	AEC-Q100-003	Machine Model 250V & 400V	1	0/18
LU	Latch-up	AEC-Q100-004	Max operating temperature	1	0/6

Table 3: Product qualification - Package-related reliability tests

Test Procedure	Method	Test Conditions	Num of lots	Criteria
Electrostatic Discharge CDM	AEC-Q100-011	Charge Device Model : Up to 1500V	1	0/18



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Document Revision History

Document Revision History		
Date	Rev.	Description of the Revision
Dec. 21, 2006	1.00	Draft Document creation (C. POLI)

Used Source Documents

Source document Title	Rev.:	Date:
PCN 1875 (replaced for obsolete dates)	1.00	June 2006



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