PRODUCT/PROCESS CHANGE NOTIFICATION

PCN APM-DIS/08/3865
Notification Date 08/04/2008

APM - ASD & IPAD Division

Power Schottky Rectifiers:

Qualification of 6 inch wafer diameter in Singapore plant

Table 1. Change Implementation Schedule

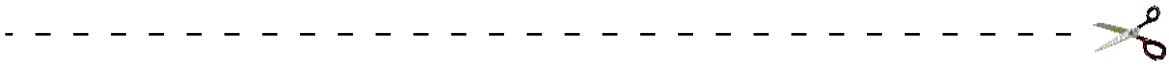
Forecasted implementation date for change	28-Jul-2008
Forecasted availabillity date of samples for customer	28-Jul-2008
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	28-Jul-2008
Estimated date of changed product first shipment	03-Nov-2008

Table 2. Change Identification

Product Identification (Product Family/Commercial Product)	Current from 5A to 200A except axial package
Type of change	Waferfab process change
Reason for change	Increased capacity for service improvement
Description of the change	STMicroelectronics is now going to implement the progressive conversion of its Singapore plant from 5 to 6 inches (125 to 150mm) for its Power Schottky Rectifiers. This change adresses Power Schottky with current from 5A to 200A and voltage from 25V to 175V, except axial packages. With this conversion to 6 inch wafers investment, STMicroelectronics will increase its production capacity to better serve its customers through service improvement and lead time reduction, especially as volumes grow.
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Traceability is ensured through the date code, an internal codification and the QA number
Manufacturing Location(s)	

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt	**PCN APM-DIS/08/3865**
Please sign and return to STMicroelectronics Sales Office	**Notification Date 08/04/2008**

☐ Qualification Plan Denied	Name:
☐ Qualification Plan Approved	Title:
	Company:
☐ Change Denied	Date:
☐ Change Approved	Signature:

Remark

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DOCUMENT APPROVAL

Name	Function
Paris, Eric	Division Marketing Manager
Duclos, Franck	Division Product Manager
Besson, Andre	Division Q.A. Manager

APM - ASD & IPAD Division[1]

Power Schottky Rectifiers:

Qualification of 6 inch wafer diameter in Singapore plant

5 to 200A / 25 to 175V devices except axial packages

(1) APM: Analog, Power & MEMS Group - ASD: Application Specific Device - IPAD: Integrated Passive and Active Devices

WHY THIS CHANGE?

STMicroelectronics has now qualified a **6 inch** line diffusion process for its **Power Schottky Rectifiers with current from 5A to 200A and voltage from 25V to 175V, except axial packages,** in its diffusion plant of Singapore.

This production upgrade is the result of the constant investments made by STMicroelectronics in the technology and the evolution of discrete devices. It illustrates the commitment of the Company to reinforce its **leading position** in the Power Rectifiers market.

With this 6 inch wafer line investment, STMicroelectronics will increase its **production capacity** to better serve its customers through service improvement and lead time reduction, especially as volumes grow.

The **involved product series** are listed in the table below:

Product Sub-Family	Product PN or Series	Package
Power Schottky Rectifiers (Current from to 5A to 200A and voltage from 25V to 175V)	JTPSxxx	Die form
	STPSxxxG(-TR)/xxxCG(-TR)/xxxSG(-TR)	D²PAK
	STPSxxxB(-TR)/xxxCB(-TR)	DPAK
	STPSxxxR/xxxCR/xxxSR	I²PAK
	STPSxxxH/xxxCH	IPAK
	STPSxxxTV/xxxTV1	ISOTOP
	STPSxxxCY	Max247
	STPSxxxCT/xxxST	TO-220AB
	STPSxxxD	TO-220AC
	STPSxxxCFP/xxxSFP	TO-220FPAB
	STPSxxxFP	TO-220FPAC
	STPSxxxCW	TO-247
	STPSxxxCPIRG	TOP3 Ins

Specific devices not expressly listed in the above table are included in this change.

WHAT IS THE CHANGE?

This diameter conversion to 6 inch wafers is taking place in our **Singapore** plant, in the **same facilities**, and has **no impact on the electrical parameters** of the products. The verification by characterization is included in the qualification program. **No size reduction** is implemented on the die layout and no change is affecting the manufacturing process.

HOW AND WHEN?

Qualification program and results availability:

The **qualification program** mainly consists of **comparative electrical characterizations** and **reliability tests** according to the **AEC Q101** standard.

The **reliability test plan** is provided in appendix 1 to this document. The **qualification report** is available on request now.

Samples availability:

For the concerned Product Sub-Family, **samples of selected devices**, including the **test vehicles**, are available on request from **now**.

Change implementation schedule:

The **production start** and **first shipments** will be implemented according to our work in progress and materials availability as indicated in the table below.

Production Start	1st Shipments
From Week **30-2008**	From Week **44-2008**

Deliveries of current product versions will continue while 6 inches conversion is brought to completion.

Lack of acknowledgement of the PCN within **30 days** will constitute acceptance of the change. After acknowledgement, lack of additional response within the **90 day** from PCN notification period will constitute acceptance of the change (Jedec Standard No. 46-C). In any case, **first shipments** may start earlier with customer's **written agreement**.

Traceability:

The traceability of the devices diffused in 6 inch wafers will be ensured by an **internal codification**, by the **trace code** and by the **QA number**.

Appendix 1: Reliability tests for qualification program.

Power Schottky Rectifiers: Qualification of 6 inch wafer diameter in Singapore plant
5 to 200A / 25 to 175V devices except axial packages

Reliability tests of QUALIFICATION PROGRAM

The qualification program was established following the guidelines prescribed by Q101 table 2. The test matrix below presents the tests performed on the selected test vehicles. Generic data based on the criteria defined in Q101 paragraph 2.3 and table 1 were also used, taking into account the definition of qualification families and the technological similarities as defined in Q101 appendix 1.

Test vehicles	Desription	Package
STPS30L30CT	Pwr Schottky 2x15A 30V Low Vf	TO-220AB
STPS30L60CT	Pwr Schottky 2x15A 60V Low Vf	TO-220AB
STPS1045B-TR	Pwr Schottky 10A 45V	DPAK
STPS3045CW	Pwr Schottky 2x15A 45V	TO-247
STPS30M100ST	Pwr Schottky 30A 100V	TO-220AB
STPS30H100CT	Pwr Schottky 2x15A 100V	TO-220AB
STPS30120CT	Pwr Schottky 2x15A 120V	TO-220AB
STPS30170CT	Pwr Schottky 2x15A 170V	TO-220AB

QUALIFICATION TESTS					
TEST	**CONDITIONS**	**DURATION**	**NBR OF LOTS (*)**	**SAMPLE SIZE**	**ACCEPTANCE CRITERIA**
Parametric verification	Data sheet specification	Not applicable	8	30 pcs / lot	Datasheet
Temperature Cycling JESD22 A104	-65°C/+150°C - Air/Air	500 cycles	3 1	25 pcs / lot 77pcs / lot	0 failure
High Temperature Reverse Bias JESD22-A108	Vac = 80% V_{RRM} , Tj = 150°C	1000 hours	4	77 pcs / lot	0 failure

(*) Lots selected among test vehicles of the list above.
NOTE: A preconditioning sequence is performed for surface mount devices prior to PCT, TC and THB reliability tests according to JESD22-A113.

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