PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MPA-DIS/06/1930
Notification Date 08/29/2006

MPA - ASD & IPAD Division

Power Shottky Rectifiers in TO-247 package

Additional assembly and test location in India

DIS - ASD & IPAD

Table 1. Change Identification

Product Identification (Product Family/Commercial Product)	Power Schottky Rectifiers in TO-247 package
Type of change	Package assembly location change
Reason for change	Capacity extension
Description of the change	Assembly and test multi-sourcing in India
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Product marking - Traceability ensured by QA nbr
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	25-Aug-2006
Forecasted availabillity date of samples for customer	25-Aug-2006
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	25-Aug-2006
Estimated date of changed product first shipment	29-Nov-2006

Table 3. Change Responsibility

	Name	Signature	Date
Division Product Manager	S. CHAMARD		Aug.25 ,06
Division Q.A. Manager	A. BESSON		Aug.25 ,06
Division Marketing Manager	J.B. MOREAU		Aug.25 ,06

Table 4. List of Attachments

Customer Part numbers list	
Qualification Plan results	

Customer Acknowledgement of Receipt **PCN MPA-DIS/06/1930**

Please sign and return to STMicroelectronics Sales Office **Notification Date 08/29/2006**

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

Remark

....

....

....

....

....

PRODUCT/PROCESS
CHANGE NOTIFICATION

PCN MPA-DIS/06/1930

MPA - ASD & IPAD Division[1]

Power Shottky Rectifiers in TO-247 package:

Additional assembly and test location in India

---

(1) MPA: Micro, Power, Analog - ASD: Application Specific Device - IPAD: Integrated Passive and Active Devices

WHY THIS CHANGE

In order to better meet the market demand, we have decided to expand the **assembly and test** of all our **Power Schottky Rectifiers in TO-247 package** with one additional assembly and test plant in **India**.

Multi-sourcing	Current	New
Assembly & test location	MOROCCO	INDIA MOROCCO

This multi-sourcing will increase our **manufacturing capacity** for a better service on our Rectifier Devices.

WHAT IS THE CHANGE

The additional assembly and test plant is located in the Chandigarh area. The Indian TO-247 line is using **same assembly flow** and **same test and finishing process** (lead-free) as the Morocco plant.

The assembly Bill Of Material status is summarized in the table below.

Material	Morocco	India
Lead Frame	Copper	Copper
Die Attach	Soft solder	Soft solder
Wire Bonding	Al 20 mils	Al 20 mils
Moulding Compound	KTMC1030	KTMC1030
Lead Finish	Sn 100 dipped	Sn 100 dipped

There will be **no impact** on the **electrical, thermal** and **dimensional** (same package outline) **parameters** of the products with respect to the product datasheet. This was verified in the qualification program.

There will be **no change** in the **packing modes** and the standard **delivery quantities**. The products will be delivered in compliance with the RoHS*.

The **product series** involved in this production extension are all the STPSxxxCW products.

(*) Restriction of the use of certain Hazardous Substances

HOW AND WHEN

Qualification and test results:

The **reliability test plan** supporting the qualification program for the new assembly line is provided in **appendix 1** of the present document. The production ramp-up will be monitored with a **pre-launch control plan** implemented on selected parameters.

The **reliability test report** of the qualification program is available on request **now**.

Sampling:

Qualification samples of **devices** produced in India are **available on request** according to the schedule below.

Salestypes	Availability Date
STPS30L40CW	Now
STPS3045CW	Now
STPS30L45CW	Now
STPS30S45CW	Now
STPS30L60CW	Now
STPS30H100CW	Now
STPS30170CW	Now
STPS4045CW	Now
STPS40H100CW	Now
STPS60L45CW	Now

Other samples are available on request for delivery within notice period if ordered within 30 days.

Change implementation schedule:

The **production change** and **first shipments** will be implemented according to our work in progress and materials availability as indicated in the schedule below:

Production Start	1st Shipments
From Week 34-2006	From Week 48-2006

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** period will constitute acceptance of the change (Jedec Standard No. 46-B). In any case, **first shipments** may start earlier with customer's **written agreement**.

Marking and Traceability:

Parts produced in India will be differentiated by their marking as indicated below:

Assembly location	Date code marking			
	Diffusion plant code	Assy location code	3 last digits	
Morocco (current)	VU (France) VW (Singapore)	**MAR**	yww	y = 1 digit indicating the year ww = 2 digits indicating the week number
India (new)		**IND**		

Traceability for the implemented change will be ensured by the **country code**, by an **internal codification** and by the **Q.A. number**.

Appendix 1: Reliability tests for qualification program

Power Schottky Rectifiers TO-247 package: Additional Assembly & Test Location in India

Reliability tests plan for QUALIFICATION PROGRAM

Salestypes
STPS3045CW
STPS30170CW
STPS40H100CW

QUALITY RELIABILITY TESTS					
TEST	**CONDITIONS**	**DURATION**	**NBR OF LOTS (*)**	**SAMPLE SIZE**	**ACCEPTANCE CRITERIA**
Parametric verification	Data sheet specification	Not applicable	3	30 pcs / lot	Datasheet
Pressure Cooker Test JESD22 A102	121°C 2 atm. 100%RH	96 Hrs	3	77 pcs / lot	0/77
Temperature Cycling JESD22 A104	-55°C/+150°C - Air/Air	1,000 cycles	3	77 pcs / lot	0/77
Temperature Humidity Bias JESD22 A101	Tamb = 85°C RH = 85% $V_R = V = 0.8\ V_{RM}$	1,000 hours	3	77 pcs / lot	0/77
HTRB JESD22 A108	$V_R = V = 0.8\ V_{RM}$ Tj = 150°C	1,000 hours	3	77 pcs / lot	0/77
Construction analysis	Random samples after Temp Humidity Bias and Temp cycling	Not applicable	3	5pcs	Assembly rules
Physical dimension JESD22 B100	As per package dimensions & tolerances	Not applicable	3	30pcs	0/30
Resistance to Solder Heat Jedec JESD22-B106-A	2 oil dipping at 260°C	10s on / 15 s off	3	30 pcs / lot min	0/30
Thermal Fatigue MIL STD750 – method 1037	Tj = 125°C ΔTcase = 55°C ± 5°C	10,000 cycles	3	25 pcs / lot	Thermal Fatigue
Wire pull test MIL STD750-2037	Bond breaking force measurement	Not applicable	3	10 bonds from 5 devices	0/50
Solderability JESD22-B102D	Dry ageing 16hrs / 220°C & 245°C – 5 sec dip. Steam aging 8hrs / 220°C & 245°C – 5 sec dip.	Not applicable	3	Total sample size =22	0/22

(*) Lots selected among test vehicles of the list above or of other devices presenting sufficient technological similarities.

---

(1) MPA: Micro, Power, Analog - ASD: Application Specific Devices - IPAD: Integrated Passive and Active Devices

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 AUTHORIZE 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

ⓒ2006 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