



# **PRODUCT/PROCESS CHANGE NOTIFICATION**

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PCN APM-DIS/08/4091  
Notification Date 11/03/2008

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**APM - ASD & IPAD Division**

**Power Schottky in TO-220AB package, current sup or equal to 30A and to 60V**

**Qualification of Bouskoura manufacturing line**

**Table 1. Change Implementation Schedule**

|  |             |
|--|-------------|
| Forecasted implementation date for change  | 27-Oct-2008 |
| Forecasted availability date of samples for customer   | 27-Oct-2008 |
| Forecasted date for <b>STMicroelectronics</b> change Qualification Plan results availability | 27-Oct-2008 |
| Estimated date of changed product first shipment   | 02-Feb-2009 |

**Table 2. Change Identification**

|   |   |
|---|---|
| Product Identification<br>(Product Family/Commercial Product) | Power Schottky in TO-220 AB package, >30A and >60V  |
| Type of change  | Package assembly location change  |
| Reason for change   | Use of the leading-edge Bouskoura testing and packaging facility  |
| Description of the change                                     | Progressing along the Restructuring Plan already communicated by ST's Letter CRP/07/2927 dated September 25, 2007 and Advanced Product Change Notification APCN APM/07/3145, please be informed that the products housed in TO-220AB package, currently produced in Ain Sebaa, are now produced in the Bouskoura site, also situated in the neighbourhood of Casablanca, Morocco. |
| Product Line(s) and/or Part Number(s)                         | See attached  |
| Description of the Qualification Plan                         | See attached  |
| Change Product Identification                                 | date code, an internal codification and the QA number   |
| Manufacturing Location(s)                                     |   |

**Table 3. List of Attachments**

|                            |  |
|----------------------------|--|
| Customer Part numbers list |  |
| Qualification Plan results |  |

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|  |            |                              |  |
|--|------------|------------------------------|--|
| Customer Acknowledgement of Receipt  |            | PCN APM-DIS/08/4091          |  |
| Please sign and return to STMicroelectronics Sales Office  |            | Notification Date 11/03/2008 |  |
| <input type="checkbox"/> Qualification Plan Denied<br><input type="checkbox"/> Qualification Plan Approved<br><br><input type="checkbox"/> Change Denied<br><input type="checkbox"/> Change Approved | Name:      |                              |  |
|  | Title:     |                              |  |
|  | Company:   |                              |  |
|  | Date:      |                              |  |
|  | Signature: |                              |  |
| Remark<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....  |            |                              |  |

## DOCUMENT APPROVAL

| Name           | Function                   |
|----------------|----------------------------|
| Paris, Eric    | Division Marketing Manager |
| Duclos, Franck | Division Product Manager   |
| Cazaubon, Guy  | Division Q.A. Manager      |



**PRODUCT/PROCESS  
CHANGE NOTIFICATION**

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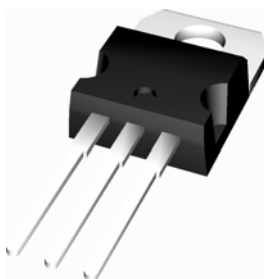
PCN APM-DIS/08/4091

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**APM - ASD & IPAD Division<sup>1</sup>**

**Power Schottky Rectifiers in TO-220AB package, with current superior or equal to 30A and voltage superior or equal to 60V:**

**Qualification of Bouskoura (Morocco) manufacturing line**



**TO-220AB**

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

**WHY THIS CHANGE?**

Progressing along the Restructuring Plan already communicated by ST's Letter CRP/07/2927 dated September 25, 2007 and Advanced Product Change Notification APCN APM/07/3145, please be informed that the products housed in TO-220AB package, **currently produced in Ain Sebaa**, are **now produced in the Bouskoura site**, also situated in the neighbourhood of Casablanca, Morocco.

In complement to the Schenzen and Manilla manufacturing lines, this production transfer aims at optimizing ST's assets utilization and enhancing the use of the leading-edge **Bouskoura 2000** testing and packaging facility in Morocco.

| Sourcing                            | Current                  | Final                    |
|-------------------------------------|--------------------------|--------------------------|
| <b>Assembly &amp; test location</b> | MOROCCO<br>(Ain Sebaa)   | MOROCCO<br>(Bouskoura)   |
|                                     | CHINA<br>(Schenzen)      | CHINA<br>(Schenzen)      |
|                                     | PHILIPPINES<br>(Manilla) | PHILIPPINES<br>(Manilla) |

The involved product series are listed in the table below:

| Product Sub-Family      | Product PN or Series | Package  |
|-------------------------|----------------------|----------|
| <b>Power Rectifiers</b> | STPS30100ST          | TO-220AB |
|                         | STPS30120CT          |          |
|                         | STPS30150CT          |          |
|                         | STPS30170CT          |          |
|                         | STPS30H100CT         |          |
|                         | STPS30H60CT          |          |
|                         | STPS30L120CT         |          |
|                         | STPS30L60CT          |          |
|                         | STPS30L60CT          |          |
|                         | STPS40120CT          |          |
|                         | STPS40150CT          |          |
|                         | STPS40170CT          |          |
|                         | STPS41H100CT         |          |
|                         | STPS41L60CT          |          |
|                         | STPS30M100ST         |          |
|                         | STPS30SM100ST        |          |
|                         | STPS40SM100CT        |          |
|                         | STPS40U100CT         |          |
|                         | STPS61L60CT          |          |
|                         | STPS80U100CT         |          |
|                         | STTH30P03ST          |          |
|                         | STTH40P03ST          |          |

Specific Devices in TO-220 AB package not expressly included in the above table are included in this change.

### **WHAT IS THE CHANGE?**

The Bouskoura production is being achieved by using **same assembly equipment** and **materials**, and employing **same personnel** as for the current location. The **lead finishing** will be achieved **by plating process instead of dipping**.

There is no **impact** in the **electrical, dimensional** and **thermal** parameters of the products, maintaining unchanged current information published in the relevant datasheets. All verifications are included in the qualification program.

There is as well **no change** in the **packing modes** and the standard **delivery quantities** either. The products will be delivered in **compliance with the RoHS** (Restriction of the use of certain Hazardous Substances).

The table provided in appendix 1 gives the detailed **qualification plan** that is implemented to qualify the new production.

### **HOW AND WHEN?**

#### Qualification program and results availability:

The **qualification program** mainly consists of **comparative electrical characterizations** and **reliability tests** (see appendix 1).

The **final qualification** report is available on request.

#### Samples availability:

**Samples** of selected devices, including the test vehicles, are **available** on request.

| Sales Type    | Availability |
|---------------|--------------|
| STPS41H100CT  | now          |
| STPS40170CT   |              |
| STPS30120CT   |              |
| STPS30H100CT  |              |
| STPS60H100CT  |              |
| STPS30M100ST  |              |
| STPS30SM100ST |              |
| STPS40M100CT  |              |

#### 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 schedule below.

| Package  | Production Start         | 1st Shipments            |
|----------|--------------------------|--------------------------|
| TO-220AB | From Week <b>39-2008</b> | From Week <b>05-2009</b> |

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

Marking and traceability:

Unless otherwise stated by customer specific requirement, parts assembled with the new line will have a **differentiated marking** as indicated below:

| Assembly location          | Assy plant | Seq. nbr | Diffusion plant  | Country of origin | Date Code (3 digits)   |
|----------------------------|------------|----------|------------------|-------------------|--|
| <b>Morocco (Bouskoura)</b> | <b>CZ</b>  | LLL      | VW for Singapore | <b>MAR</b>        | YWW<br>Y = 1 digit indicating the year<br>WW = 2 digits indicating the week number |
| Morocco (Ain Sebaa)        | CC         | LLL      | VW for Singapore | MAR               |  |

The **traceability** of the parts assembled in the new plant will be ensured by the date code, by an **internal product code** and by the **Q.A. number**.

Appendix 1: Reliability tests for qualification program.



**Power Schottky Rectifiers in TO-220AB package, with current superior or equal to 30A and voltage superior or equal to 60V: Qualification of Bouskoura (Morocco) manufacturing line**

**Reliability tests of QUALIFICATION PROGRAM**

| Test vehicles                                       | Product Sub-Family        |
|---|---------------------------|
| STPS40170CT   | Power Schottky<br>TO220AB |
| STPS41H100CT  |                           |
| Other power rectifiers with sufficient similarities |                           |

| QUALIFICATION 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<br>JESD22-A102          | 121°C 2 atm. 100%RH  | 96 Hrs         | 3               | 25 pcs / lot | 0 failure           |
| Temperature Cycling<br>JESD22 A104           | -65°C/+150°C - Air/Air   | 500 cycles     | 3               | 25 pcs / lot | 0 failure           |
| Temperature Humidity Bias<br>JESD22 A101     | Tamb = 85°C RH = 85% VR = 0.8 x VRRM<br>or 100V max  | 1000 hours     | 1               | 77 pcs / lot | 0 failure           |
| High Temperature Reverse Bias<br>JESD22-A108 | VR = 0.8 x VRRM Tj = Tjmax   | 1000 hours     | 3               | 77 pcs / lot | 0 failure           |
| Construction analysis                        | Random samples   | Not applicable | 3               | 5 pcs        | Assembly rules      |
| Physical dimension<br>JESD22 B100            | As per package dimensions & tolerances   | Not applicable | 1               | 30 pcs       | 0 failure           |
| Solderability SnPb & SnAgCu<br>JESD22-B102D  | Dry ageing 16hrs / 220°C & 245°C – 5 sec dip.<br>Steam aging 8hrs / 220°C & 245°C – 5 sec dip. | Not applicable | 2               | 15 pcs / lot | 0 failure           |

(\*) Lots selected among test vehicles of the list above.

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