



# PRODUCT/PROCESS CHANGE NOTIFICATION

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PCN APM-PWR/08/3902  
Notification Date 07/31/2008

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**New Subcontractor for SOT23-3L package (TSPS)**

**Table 1. Change Implementation Schedule**

Forecasted implementation date for change	21-Oct-2008
Forecasted availability date of samples for customer	24-Jul-2008
Forecasted date for <b>STMicroelectronics</b> change Qualification Plan results availability	24-Jul-2008
Estimated date of changed product first shipment	30-Oct-2008

**Table 2. Change Identification**

Product Identification (Product Family/Commercial Product)	see attached list
Type of change	Package assembly location change
Reason for change	To increase capacity.
Description of the change	Following the continuous improvement of our service and to better support the strong market demand of Power Bipolar, the above mentioned products will be also manufactured in TSPS. The products are in agreement with ST standards and guarantee the same quality and the same electrical characteristics as the ones assembled in the ST plants. Samples are available for devices used for Subcontractor qualification.
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Mark "FM" (Assy plant code) as first digits of the traceability code in the label.
Manufacturing Location(s)	



## DOCUMENT APPROVAL

Name	Function
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	<b>APM CATANIA RELIABILITY REPORT</b>	<b>Date:</b>	<b>June '08</b>
		<b>No</b>	<b>15/08</b>

**RELIABILITY EVALUATION**

**ON**

**SOT23-3L**

**MADE IN TSPS (THAILAND)**

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### **Introduction**

This report aims at the internal qualification of the SOT23-3L package made in TSPS.

The Qualification Reliability test trials have been performed in ST Catania Site.

The evaluation results meet ST products qualification targets, therefore the SOT23-3L package made in TSPS is qualified.

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**Test Vehicles :**

<b>Product Line</b>	<b>Sales Type</b>	<b>Package</b>
BA13	2STR1230	SOT23-3L

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**Failure Criteria :**

A failed component is a device which becomes inoperative during the test or it fails on meeting the end limits foreseen in the device specification, for one or more than the parameters here below reported

**Parameter Power BIPOLAR Main Parameter**

Collector Leakage Current (Icbo or Iceo or Ices, etc...)  
 Emitter Leakage (Iebo)  
 $H_{FE}$ , Vcesat, Vbesat, Vf  
 Breakdown Voltage ( BVcbo, BVceo, Vbces, Bvebo )

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## Reliability Evaluation Plan and results

**D.U.T.: 2STR1230    LINE: BA13    PACKAGE: SOT-23-3L**

<b>Test</b>	<b>Conditions</b>	<b>S.S.</b>	<b>Requirement</b>	<b>Results</b>
<b>PRECONDITIONING OF SMD DEVICES BEFORE TC/THB/ENV. SEQ.</b>	DRYNG 1H @ 125°C STORE 168H @ TA=85°C RH=85% Reflow @ 260°C 3 times	204 x 1 Lot	<i>Parameter deviation within spec. limits at end of preconditionings.</i>	<i>No parameter deviation out of spec. Limits at end of preconditionings.</i>
<b>H.T.S.</b>	TA=150°C	77 x 1 Lot	<i>Parameter deviation within spec. limits at 1000 hours.</i>	<i>No parameter deviation out of spec. limits at 1000 hours.</i>
<b>T.H.B.</b>	<i>D.U.T. SMD PRECONDITIONED</i> TA=85°C - RH=85% Vbias= 24V	77 x 1 Lot	<i>Parameter deviation within spec. limits at 1000 hours.</i>	<i>No parameter deviation out of spec. limits at 1000 hours.</i>
<b>H.T.R.B.</b>	T.A.= 150°C Vdd = 24V	77 x 1 Lot	<i>Parameter deviation within spec. limits at 1000 hours.</i>	<i>No parameter deviation out of spec. limits at 1000 hours.</i>
<b>PRESSURE POT</b>	TA=121°C - PA=2Atm	77 x 1 Lot	<i>Parameter deviation within spec. limits at 96 hours.</i>	<i>No parameter deviation out of spec. limits at 96 hours.</i>
<b>THERMAL CYCLES AIR TO AIR</b>	<i>D.U.T. SMD PRECONDITIONED</i> TA=-55°C TO 150°C 1 HOUR / CYCLE	77 x 1 Lot	<i>Parameter deviation within spec. limits at 500 cycles.</i>	<i>No parameter deviation out of spec. limits at 500 cy.</i>

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### Reliability Test Description

High Temperature Reverse Bias (HTRB )

This test is performed in order to demonstrate the quality and reliability of devices subjected to an elevated temperature and simultaneously reverse biased. The purpose of this test is to detect surface defects such as poor passivation, presence of contaminants, etc...

High Temperature Storage (HTS)

This stress test is performed to check the device life in a high temperature ambient. Specimens are put for a period of time inside a stove in free air. Detectable failure mechanisms are presence of contaminants and metal corrosion.

Temperature Humidity Bias (THB)

This test is performed to check the device life in a high humidity ambient. Specimens are subjected to a permanent bias in a climatic chamber in the presence of steam. Detectable failure mechanisms are metal corrosion and molding defects.

Pressure Pot

This test is performed in order to check device life in a high humidity ambient in an accelerated way. Specimens are subjected for a period of time inside an autoclave in the presence of steam and pressure. Detectable failure mechanism is metal corrosion.

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