



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN APM-IPC/09/4726
Notification Date 07/02/2009

**BCD-OFFLINE FAMILY IN SO-8 LEAD ASSEMBLY PLANT TRANSFER
FROM ST MUAR TO ST BOUSKOURA using Halogen-free resin
and NRS & STAND-ALONE lines**

Table 1. Change Implementation Schedule

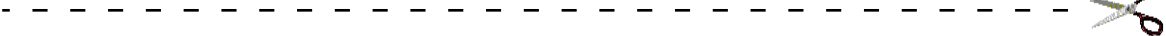
Forecasted implementation date for change	01-Sep-2009
Forecasted availability date of samples for customer	15-Jul-2009
Forecasted date for STMicroelectronics change Qualification Plan results availability	25-Jun-2009
Estimated date of changed product first shipment	01-Oct-2009

Table 2. Change Identification

Related APCN	4217
Product Identification (Product Family/Commercial Product)	BCD-OFFLINE Family
Type of change	Multiple types of changes
Reason for change	Assembly plant & resin compound change for HF
Description of the change	In order to implement the request of the Restricted Flame Retardant products, the assembly of the halogen-free products in SO-8 lead package will be made in Bouskoura. Both the NRS & STAND-ALONE lines will be used.
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	assy plant marking identification "Z" for Bouskoura plant & by finished good code
Manufacturing Location(s)	

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt		PCN APM-IPC/09/4726
Please sign and return to STMicroelectronics Sales Office		Notification Date 07/02/2009
<input type="checkbox"/> Qualification Plan Denied	Name:	
<input type="checkbox"/> Qualification Plan Approved	Title:	
	Company:	
<input type="checkbox"/> Change Denied	Date:	
<input type="checkbox"/> Change Approved	Signature:	
Remark		
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DOCUMENT APPROVAL

Name	Function
Arrigo, Domenico Massimo	Division Marketing Manager
Arrigo, Domenico Massimo	Division Product Manager
Motta, Antonino	Division Q.A. Manager



**BCD-OFFLINE FAMILY IN SO-8 LEAD
ASSEMBLY PLANT TRANSFER FROM MUAR TO BOUSKOURA
using Halogen-free resin and NRS & STAND-ALONE lines**

WHAT:

IPC Division, in close cooperation with the Central/Corporate functions, decided to concentrate all the SO8 lead assembly activities in Bouskoura plant, in order to optimize the production performances and have the right flexibility in deliveries.

Furthermore IPC decided to convert all its SO8 lead production, complying with the latest environmental requests of the Restricted Flame Retardant resin (halogen-free).

Therefore the following products, belonging to the BCD-OFFLINE family, will be transferred from Muar to Bouskoura plant:

Product line	p/n
U32403	L6387ED
U32403	L6387ED013TR
U36403	L6384ED
U36403	L6384ED013TR
U36603	L6385ED
U36603	L6385ED013TR
U37103	L6388ED
U37103	L6388ED013TR

WHY:

1. Concentrate SO package in Bouskoura plant
2. Comply with the latest market requirements in terms of Halogen-free products

HOW

According to the attached reliability report.

The involved products can be assembled in both SOSA and NRS to achieve the maximum production flexibility.

WHEN:

The mass production could start at the beginning of October 2009 and the relevant samples are available upon request.



Q&R Project Code: RR000609CT6017

Q&R Project date:15-05-2009

QUALITY & RELIABILITY EVALUATION REPORT

BCD OFF LINE PRODUCT TRANSFER QUALIFICATION

FROM ST- MUAR (MALAYSIA) TO ST- BOUSKOURA B-END(MOROCCO)USING HF (HALOGEN FREE) MATERIALS

Abstract:

APM/I&PC Division , decide to concentrate all the **SOIC8l assembly** activities in BSK plant, in order to optimize the production performance and have the right flexibility in delivery in compliance to the new ROHS procedure about the Halogen Free standard.

In this way, **I&PC** product transfer line(**BCD-OFF LINE family**) from ST-MUAR to ST BOUSKOURA was done using green compound(**SUMITOMO G700K**) and new glue type **ABLEBOND 8601S25** as continuous improvement.

For HF materials see spec. as reference:

JAPAN:JPCA-ES-01

IEC STANDARD:61249-2-21

JEDEC J-101

Conclusion:

A full qualification exercise it was done, to qualify the **BCD-OFF LINE** products transfer from **SOIC ST MUAR LINE** to **ST BOUSKOURA SOIC8L NRS/STAND ALONE line using SUMITOMO G700K** (already qualified in different I&PC family products) and new glue type **ABLEBOND 8601S25** using as test vehicle:

***U324 (BCD-OFF family)**

Qualification exercise was done with Workability/Testing/ C.A & Reliability Positive results.

Note:

Product pass JEDEC LEVEL _1@260°C

Product is classified as ECOPAK E4

Issued by

Francesco Ventura
(I&PC QA&R B-END)

Approved by

Antonino Motta
(I&PC /QA&R MNG)



Reliability test conditions and results for *U324

Test	Test short description					
	Performed on 3# STD assy lots					
	Method	Conditions	Sample /Lots	Number of lots 1	Duration	Results Fail/SS
PC	Pre-Conditioning: Moisture sensitivity level@1					
	SAM T=0 & AFTER PRECOND	DUT SMD Preconditioning JL1 Bake 24hrs @ 125°C Soak 168hrs @ 85°C / 85%RH 3X Reflow @ 260°C	300			0/300 NO-DELAMINATION Before and after precond.
E.S :	Preconditioning JL@1 + Pressure pot					
	Conditions:	2atm	77		168hrs	0/77
E.S :	Preconditioning JL@1 + Thermal Cycle					
	Conditions:	Ta=-65°C/+150°C	77		500Cy	0/77
HTS	High Temperature Storage					
	No bias	Tamb=150°C	77		1000h	0/77
T.H.B	Thermal Humidity Bias(A2)					
	85%/85RH	VHV=100V Vcc=17V	77		1000h	0/77



DIE FEATURES		PACKAGE FEATURES	
Die Code	: XU324AE6	Technical code(PKG)	: O7
Diffusion process	: A5 BCD- OFFLINE	Package name	: SOIC 8LN
Wafer diameter	: 6"	Assembly site	: BSK(MOROCCO)
Diffusion site	: AMOKIO	Leadframe / substrate	: SO8L 94x125 MILS MTX PPF
Die size	: 2370 X1700UM	Die attach	: GLUE ABLESTIK 8601S25
Die Tick.	: 375 ± 25 µm	Molding compound	: SUMITOMO G700K GREEN COMPOUND (HF)
Passivation	: SiN	Wire Bonding	: 1.0 mils Au
Back finishing	: CHROMO NICKEL	Solder balls / plating	: Ni/Pd/Au

Attachments:

- Reliability tests description (MANDATORY)
- MBD(Mont & Bond Diagram)
- POA (Package Outline Assembly)



ATTACHMENT 1: RELIABILITY TEST DESCRIPTION(for reference)

TEST NAME	DESCRIPTION	PURPOSE
JLn: Jedec Level n surface mounting simulation	The device is submitted to a typical temperature profile used for surface mounting, after a controlled moisture absorption.	As stand-alone test: to investigate the level of moisture sensitivity. As preconditioning before other reliability tests: to verify that the surface mounting stress does not impact on the subsequent reliability performance. The typical failure modes are "pop corn" effect and delamination.
TCT: Temperature Cycles Test	The device is submitted to cycled temperature excursions, between a hot and a cold chamber in air atmosphere.	To investigate failure modes related to the thermo-mechanical stress induced by the different thermal expansion of the materials interacting in the die-package system. Typical failure modes are linked to metal displacement, dielectric cracking, moulding compound delamination, wire-bonds failure, die-attach layer degradation.
PPT: Pressure Pot Test	The device is stored in saturated steam, at fixed and controlled conditions of pressure and temperature.	To investigate corrosion phenomena affecting die or package materials, related to chemical contamination and package hermeticity.
HTS: High Temperature Storage	The device is stored in unbiased condition at the max. temperature allowed by the package materials, sometimes higher than the max. operative temperature.	To investigate the failure mechanisms activated by high temperature, typically wire-bonds solder joint ageing, data retention faults, metal stress-voiding.
THB: Temperature Humidity Bias Test	The device is biased in static configuration minimizing its internal power dissipation, and stored at controlled conditions of ambient temperature and relative humidity.	To investigate failure mechanisms activated in the die-package environment by electrical field and wet conditions. Typical failure mechanisms are electro-chemical corrosion and surface effects related to the moulding compound.



DOCUMENT 7618399

REVISION A

CONTROLLED DOCUMENT (Check latest revision)

DATE 08-JAN-2004

page: 1/1

BONDING DIAGRAM FOR LINE : U324

PACKAGE : 07

FRAME PAD : $\frac{.094 \times .125}{2,388 \times 3,175}$ inch
mm

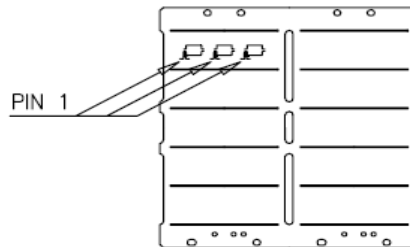
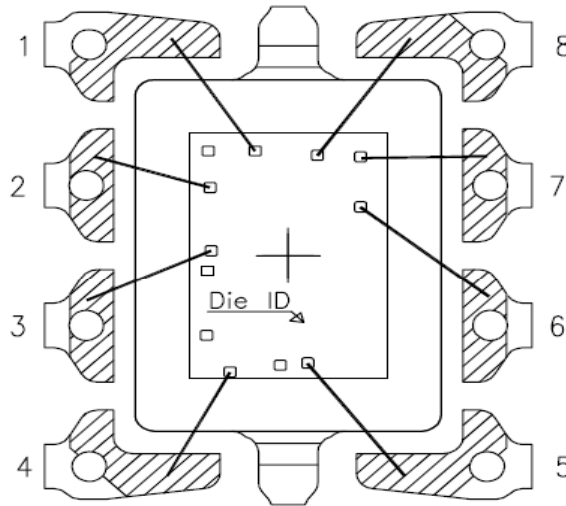
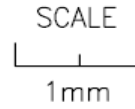
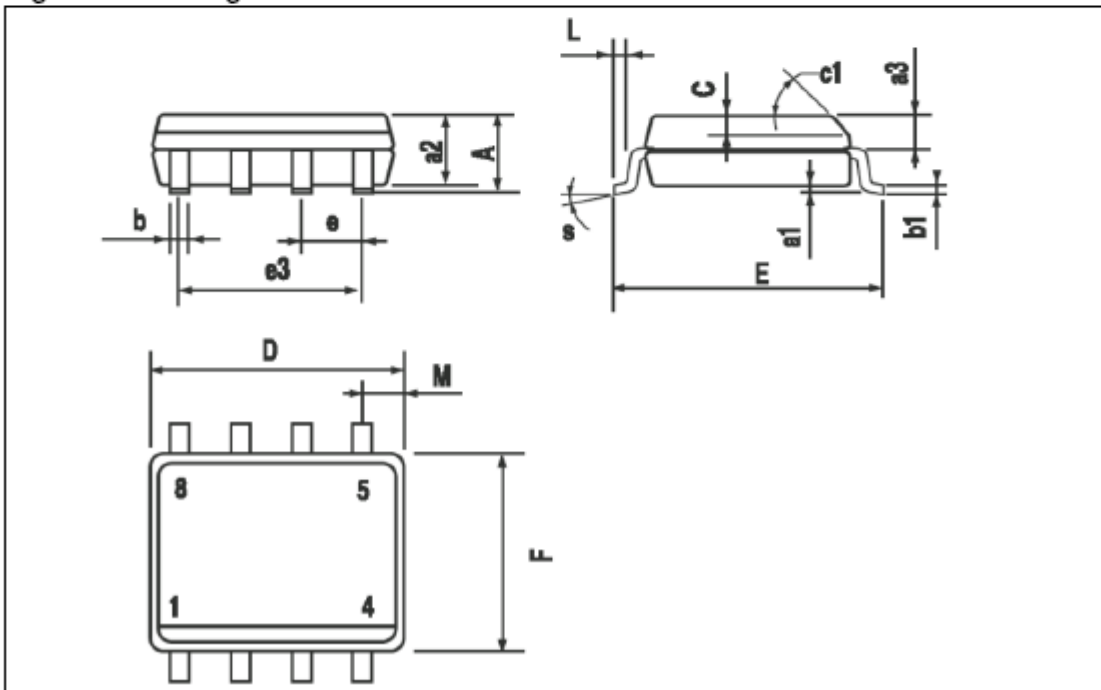


Table 9. SO-8 mechanical data

Dim.	mm			inch		
	Min	Typ	Max	Min	Typ	Max
A			1.75			0.068
a1	0.1		0.25	0.003		0.009
a2			1.65			0.064
a3	0.65		0.85	0.025		0.033
b	0.35		0.48	0.013		0.018
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.019
c1	45 (typ.)					
D	4.8		5.0	0.188		0.196
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.14		0.157
L	0.4		1.27	0.015		0.050
M			0.6			0.023
S	8° (max.)					

Figure 9. Package dimensions



Nome file: SO8NRS_BCD_OFF_lineHF.docx
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Modello: C:\Documents and Settings\francesco ventura\Application
Data\Microsoft\Templates\Normal.dotm
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Oggetto:
Autore: st
Parole chiave:
Commenti:
Data creazione: 5/15/2009 2:27:00 PM
Numero revisione: 32
Data ultimo salvataggio: 6/5/2009 9:28:00 AM
Autore ultimo salvataggio: francesco ventura
Tempo totale modifica 126 minuti
Data ultima stampa: 6/5/2009 9:29:00 AM
Come da ultima stampa completa
Numero pagine: 6
Numero parole: 803 (circa)
Numero caratteri: 4,581 (circa)

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