PRODUCT/PROCESS CHANGE NOTIFICATION

PCN APM-IPC/07/2916
Notification Date 09/25/2007

L6562AD/TR, L6565D/TR & FLEX01D/TR Devices in SO8 package - 2nd source of Assembly and Testing plant in Bouskoura 2000 plant

IPC - IND.& POWER CONV.

Table 1. Change Identification

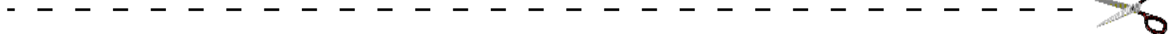
Product Identification (Product Family/Commercial Product)	L6562AD/TR, L6565D/TR & FLEX01D/TR Devices
Type of change	Package assembly location change
Reason for change	Company roadmap & capacity increase
Description of the change	SOIC NARROW ASSEMBLY & TESTING 2ND SOURCE IN ST BOUSKOURA 2000
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	"Z" as second digit of the traceability code
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	30-Sep-2007
Forecasted availabillity date of samples for customer	15-Oct-2007
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	18-Sep-2007
Estimated date of changed product first shipment	25-Dec-2007

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt	**PCN APM-IPC/07/2916**
Please sign and return to STMicroelectronics Sales Office	**Notification Date 09/25/2007**
☐ Qualification Plan Denied	Name:
☐ Qualification Plan Approved	Title:
	Company:
☐ Change Denied	Date:
☐ Change Approved	Signature:

Remark

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DOCUMENT APPROVAL

Name	Function
Menniti, Pietro	Division Marketing Manager
Gattavari, Giuseppe	Division Product Manager
Motta, Antonino	Division Q.A. Manager

L6562AD/TR, L6565D/TR & FLEX01D/TR Devices in SO8 package
2nd source of Assembly and Testing plant in Bouskoura 2000 plant

WHAT:

- Following the Corporate decision to move the SOIC Narrow packages to Bouskoura 2000 plant (Marocco), we are going to move also the following devices in SO8 package:
  - L6562AD (UE38 line)
  - L6562ADTR “
  - L6565D (U094 line)
  - L6565DTR “
  - FLEX01D (U073 line)
  - FLEX01DTR “

WHY:

Corporate package roadmap & capacity increase

HOW:

SOIC Narrow is already qualified and running in production in Bouskoura. For IPC products pls find attached the qualification report referring to the line L264 as test vehicle.

WHEN:

The production of the new devices could start in Q4, 2007. The relevant samples could be available starting from October 2007

SO NARROW TRANSFER TO BOUSKOURA

RELIABILITY EVALUATION REPORT

Abstract

The assembly line for SO-8/14/16 in Bouskoura has been successfully evaluated from the reliability viewpoint. Stress tests have been performed on three assembly lots of L264 (SO-8) and 2 assembly lots of L203 (SO-16).

The package materials are the same currently qualified and used for mass production in Muar SO-narrow lines.

Conclusion

On the basis of the results summarized at page 2 of the present report, the SO-narrow package assembled in Bouskoura can be qualified as far as reliability is concerned.

Both the product test-vehicles have passed the MSL 3 assessment with 260°C as reflow peak temperature; the package is therefore compatible with lead-free post-plating.

A MSL 1 assessment will be performed after successful completion of the production ramp-up monitoring plan. In the meantime, the MSL of devices transferred from Muar has to be set to 3.

Reliability test conditions and results

N	TEST NAME	CONDITIONS [SPEC]	DEFECTS*/SAMPLE-SIZE		NOTES
			TV1	TV2	
1	JL3	24h bake @ 125°C 192h @ 30°C / 60% RH Reflow simulation (3 times), Tmax=260°C [J-STD-020B + STM “Ecopack” reflow profile]	Lot 1: 0/65 Lot 2: 0/65	Lot 1: 0/35 Lot 2: 0/35 Lot 3: 0/35	1
2	TCT	Ta=-65/+150°C (air to air) 1000 cycles	Lot 1: 0/25 Lot 2: 0/25	Lot 1: 0/25 Lot 2: 0/25 Lot 3: 0/25	2
3	PPT	Ta=121°C, P=2atm 168h	Lot 1: 0/30 Lot 2: 0/30		2

* Defect is any device rejected at the readout electrical testing or failing additional acceptance criteria according to the specified procedure.

NOTES:

[1] SAM analysis in C and T mode did not show significant delamination at the die-resin, leadframe-resin and die-attach interfaces.

[2] Samples pre-conditioned by test n. 1.

Device construction note

TV1: DIE FEATURES		
Die Code	:	L203
Diffusion process	:	Bipolar AT
Wafer diameter	:	5”
Diffusion site	:	Ang Mo Kio
Die size (mm^2)	:	2.34x1.30
Metal levels	:	1, Al
Passivation	:	SiN
Back finishing	:	Cr/Ni/Au

TV1: PACKAGE FEATURES		
Package code	:	Q7
Package name	:	SO-16 Narrow
Assembly site		Bouskoura
Leadframe	:	SO-16L 94x125 Ag spot
Die attach	:	Ablebond 8390
Wire Bonding	:	Au, 1mil
Molding comp.	:	NITTO MP8000 CH4
Lead finishing	:	SnPb

TV2: DIE FEATURES		
Die Code	:	L264
Diffusion process	:	Bipolar B30II
Wafer diameter	:	6”
Diffusion site	:	Ang Mo Kio
Die size (mm^2)	:	2.44x1.94
Metal levels	:	1
Passivation	:	SiN
Back finishing	:	Cr/Ni

TV2: PACKAGE FEATURES		
Package code	:	O7
Package name	:	SO-8 Narrow
Assembly site		Bouskoura
Leadframe	:	SO-8L 94x125 Ag spot
Die attach	:	Ablebond 8390
Wire Bonding	:	Au, 1mil
Molding comp.	:	NITTO MP8000 CH4
Lead finishing	:	SnPb

Attachments

1) Reliability tests description

ATTACHMENT 1: RELIABILITY TEST DESCRIPTION

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 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, molding 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.

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