



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN APM-SLI/07/2706
Notification Date 07/17/2007

**TL431 in SO8 package new assembly + test site in ST
Bouskoura (Morocco) qualification
SLI - LINEAR & INTERFACE**

Table 1. Change Identification

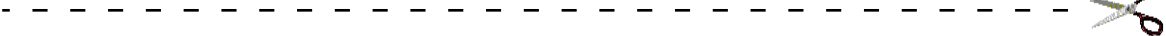
Product Identification (Product Family/Commercial Product)	TL431 assembled in SO8 package
Type of change	Multiple types of changes
Reason for change	For TL431 in SO8 ST Muar current assy+test plant will close week 734
Description of the change	TL431 in SO8 package produced today in ST Muar (Malaysia) plant will be produced in ST Bouskoura (Morocco) plant starting week 728 (wk28 of year 2007). Please note that TL431 in SO8 production lines from ST Muar will be closed week 734 (wk34 of year 2007). Consequently first shipment of TL431 SO8 from ST Bouskoura will occur prior to 90 days after change announcement. Equipment & material remain the same, there is no change.
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	On package 2nd digit after ST logo will become "Z"
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	10-Jul-2007
Forecasted availability date of samples for customer	10-Jul-2007
Forecasted date for STMicroelectronics change Qualification Plan results availability	10-Jul-2007
Estimated date of changed product first shipment	16-Oct-2007

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt		PCN APM-SLI/07/2706
Please sign and return to STMicroelectronics Sales Office		Notification Date 07/17/2007
<input type="checkbox"/> Qualification Plan Denied <input type="checkbox"/> Qualification Plan Approved <input type="checkbox"/> Change Denied <input type="checkbox"/> Change Approved	Name:	
	Title:	
	Company:	
	Date:	
	Signature:	
Remark		

DOCUMENT APPROVAL

Name	Function
Gilot, Yves	Division Marketing Manager
Kaire, Jean-Claude	Division Product Manager
Paccard, Francoise	Division Q.A. Manager

QUALIFICATION REPORT

PCN reference: APM-SLI/07/2706
Qualification Report n°: QASO8BD1
Qualification Type: Product transfer for
TL431 in SO8 package
Process: SO8
Date of issue: 9th July 2007

Reference documents:

- SOP 2.5.9 Process critical and key parameters
- 0076604 Process Qualification and release to production
- 0078588 Reliability requirements for product qualification
- 0046008 Process control plan for Front End
- 0060531 FMEA procedure
- 0061050 Back end qualification procedure
- 0091984 Construction analysis
- 0037709 Package construction analysis
- 7006451 Management of manufacturing source change
- 0033689 Process flow chart



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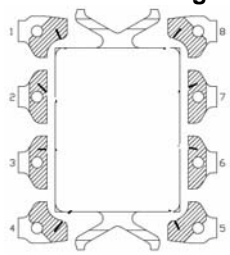
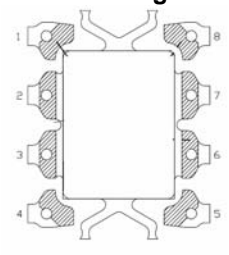
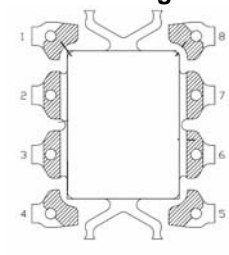
3.5 Reliability qualification results

4 PROCESS CHANGE QUALIFICATION CERTIFICATE

1. PROCESS MAIN SPECIFICATION CHANGE

1.1 Process main specification change

Assembly change (New leadframe for ST Bouskoura)

	Current process		Modified process	Recommended test
Assembly location	ST Bouskoura for products other than TL431	ST Muar	ST Bouskoura	
Die attach	Hitachi 4900ST10	Hitachi 4900ST10	Hitachi 4900ST10	
Wire	Gold 0.8 mils	Gold 0.8mils	Gold 0.8mils	
Leadframe	Copper OLIN194 94x125 floating 	Copper OLIN 94x125 batwing 4+2+2  Pin 2, 3, 6 and 7 connected to die pad	Copper OLIN 94x125 batwing 4+2+2  Pin 2, 3, 6 and 7 connected to die pad	Preconditioning MSL1, TMC,PPT,
Molding compound	Nitto MP8000 CH4-2A	Nitto MP8000 CH4-2A	Nitto MP8000 CH4-2A	
Lead finishing	NiPdAu	NiPdAu	NiPdAu	

Test change

	Current process	Modified process	Recommended test
Test location	ST Muar for 0431	ST Bouskoura for 0431	Golden samples verification One lot datalog verification
Tester type	No change		

1.2 Risk assessment

Type of risk Q: Quality E: Electrical R: Reliability	Parameter	Possible effect	Qualification check
R	MSL	MSL degradation	Preconditioning + TMC,PPT



2. QUALIFICATION PLAN

2.1 Test vehicle description

This qualification is based on the ST Bouskoura SO8 qualification with floating leadframe and product qualification performed in ST Muar. TV2 is the representative test vehicle for the future production delivery.

	TV1	TV2	TV3	Comments
Line	0431	0431	4871	
Plant	Muar	Bouskoura	Bouskoura	
Sales Type	TL431CDT	TL431CDT	TS4871IDT	
FE process	Bipolar	Bipolar	HF4CMOS	
Package	SO8	SO8	SO8	
Die size (µm)	1220 X 990	1220 X 990	2120 x 1470	
Die thickness (µm)	280	280	280	
Metallisation	AlSiCu	AlSiCu	AlSiCu	
Passivation	Nitride	Nitride	Nitride + pvapox	
Back side	Raw silicon	Raw silicon	Raw silicon	
Leadframe	94x125	94x125	94x125	
Lead finishing	NiPdAu	NiPdAu	NiPdAu	
Glue	HITACHI 4900ST10	HITACHI 4900ST10	HITACHI 4900ST10	
Molding compound	Nitto MP8000CH4-2A	Nitto MP8000CH4-2A	Nitto MP8000CH4-2	
Wire	0.8mils	0.8mils	0.8mils	

2.2 Assembly, Final Test and Finishing qualification requirements

	TV1	TV2	TV3
Quantity of qualification lot	1	1	1
Package type	SO8	SO8	SO8
Parameters distribution	X	X	X
List of parameters	All	All	All
Test capability		X	

2.3 Reliability qualification requirements.

Tests	Conditions	Step	TV1	TV2	TV3	Comments
HTB	Tj=150C Vs=absolute max rating	168h	78		78	
		1000h	78		78	
THB	Ta=85C RH=85% Vs=nominal	100cy	78		0/78	
		500cy	78		0/78	
		1000cy				
TMC	Ta=-65/+150C	168h	78	78	0/78	
		240h	78	78	0/78	
			78		0/78	
PPT	Ta=121C P=2atm	100cy 96h	78 78	78 78	0/78 0/78	
Env seq	TMC + PPT	24h Jedec T °C			0/78 0/78	
Jedec Level	Baking (150°C) Moisture soak 3 IR reflow soldering		15	15	0/15	

3. QUALIFICATION RESULTS

3.1 Assembly and FT qualification results

	TV1	TV2	TV3	Comment
	0431	0431	4871	
Package type	SO8	SO8	SO8	
Parameters distribution	OK on 500units	OK on 500 units	OK on 500units	
Test capability		Golden sample verification done		

3.2 Reliability qualification results

Tests	Conditions	Step	TV1	TV2	TV3	Comments
			0431	0431	4871	
HTB	Tj=150C Vs=absolute max rating	168h 1000h	0/78 0/78		78 78	
THB	Ta=85C RH=85% Vs=nominal	168h 1000h	0/78 0/78		0/78 0/78	
TMC	Ta=-65/+150C	100cy 500cy 1000cy	0/78 0/78 0/78	0/78 0/78	0/78 0/78 0/78	
PPT	Ta=121C P=2atm	168h 240h	0/78 0/78	0/78 0/78	0/78 0/78	
Env seq	TMC + PPT	100cy 96h	0/78 0/78		0/78 0/78	
Jedec Level	Baking (150°C) Moisture soak 3 IR reflow soldering	24h Jedec T °C	0/15	0/15	0/15	MSL 1

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