



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN HED-AUD/07/2239
Notification Date 01/12/2007

Pentawatt monocomponent: L165 family

AUD - AUDIO

Table 1. Change Identification

Product Identification (Product Family/Commercial Product)	L165 Audio Power Amplifiers family
Type of change	Package assembly process change
Reason for change	Company roadmap
Description of the change	The purpose of this PCN is to inform our customers we are moving the L165V, TDA2006V, TDA2030V Part Numbers to PW mono-component package: this change already announced on PCN HPC-AUD/06/1627 (pls refer to TDA2030AV for L165 line)
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Internal sales type change only
Manufacturing Location(s)	1 St Bouskoura 2 - Morocco

Table 2. Change Implementation Schedule

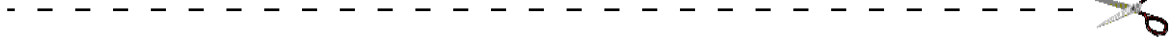
Forecasted implementation date for change	10-Apr-2007
Forecasted availability date of samples for customer	15-Feb-2007
Forecasted date for STMicroelectronics change Qualification Plan results availability	10-Jan-2007
Estimated date of changed product first shipment	10-Apr-2007

Table 3. Change Responsibility

	Name	Signature	Date
Division Product Manager	Andrea Onetti		Jan.10 ,07
Division Q.A. Manager	Massimo Piccoli		Jan.10 ,07
Division Marketing Manager	Marco Angelici		Jan.10 ,07

Table 4. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt		PCN HED-AUD/07/2239
Please sign and return to STMicroelectronics Sales Office		Notification Date 01/12/2007
<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		



PENTAWATT MONOCOMPONENT: L165 FAMILY

WHAT

The purpose of this PCN is to inform our customer we're moving the L165V, TDA2006V, TDA2030V sales types to Pentawatt monocomponent package: this change already announced on PCN HPC-AUD/06/1627 (TDA2030AV)

WHY

Company Roadmap

HOW

The qualification of L165 family in Pentawatt monocomponent achieved by similarity: the package qualification Certificate (QC-44-06 HPC/APG/CPG) available upon request.

WHEN

We will start from April 2007 onward to migrate L165 family into the Pentawatt monocomponent package.

Samples will be available upon request.

Please inform our customers about it and feedback its answer.



HPC BE Q&R QUALIFICATION PLAN

Assy line: Bouskoura
Package family: Small Watt packages (PW/ HW)

Abstract

The object of this qualification plan is to evaluate the introduction of a mono thickness frame in the Small Watt assy line of Bouskoura and the introduction of a new molding compound of Kyocera.

Change identification

PACKAGE FEATURES		
Internal reference / date	HPCQP 05017	Date: Sept. 6,2005
Change request reference	Ref: HPC 0036/05	
Affected products	<i>All small Watt packages in Bouskoura</i>	



Package construction note

PACKAGE FEATURES	
Package name	HW & PW
Assembly site	Bouskoura
Lead frame material	Mono-thickness frame
Lead finish	Post plated Pb Ag Sn
Die attach	Umicor Soft solder
Molding compound	Sumitomo EME 6300HR Kyocera KE-300ETS
Wire material / diameter	Cu/ 2 mils
Wire bonding	Thermosonic

Test vehicles

Line	Final test	Rel plant
L440	GNB	GNB
L559		

DIE FEATURES		
Technical code/ Line	STV8172A/ L440	STV9302A/ L559
Package	HW	
Diffusion process	B50II	B50II
Wafer diameter	6	6
Diffusion site	AMK	AMK
Die size (µm)	2710 x 1880	2100 x 2300
Passivation	Nitride (SiN)	Nitride (SiN)
Back finishing	Chromium/ Nickel/ Gold	Chromium/ Nickel/ Gold



Reliability test conditions and qualification plan

TEST	CONDITIONS	Sumitomo EME 6300HR			Kyocera KE-300ETS		
		L440	L559-1	L559-2	L440	L559-1	L559-2
TCT	Ta=-40/+150°C Seps: 0, 500, 1000 cycles T-SCAN + C-SAM @ T0 & 1000 TCT	50	50	50	50	50	50
PPT	P=2atm, Ta=121°C, 100%RH Steps: 0, 168, 240h T-SCAN + C-SAM @ T0 & 240h PPT	50	50	50	50	50	50
HTS	High temperature storage (Ta=175°C) Steps: 0, 500, 1000 hours T-SCAN + C-SAM @ T0 & 1000 hours	50	50	50	50	50	50

HTRB test will be run later as the boards are used today.

These HTRB test results will be mandatory for the full qualification. The only results of the TCT, PPT and HTS will lead to a Pre-qualification on a reliability point of view. To avoid to loose time the decision can be taken at 500hours of HTRB.

TEST	CONDITIONS	Sumitomo EME 6300HR			Kyocera KE-300ETS		
		L440	L559-1	L559-2	L440	L559-1	L559-2
HTRB	Tj=150°C Steps: 0, 500, 1000hours	-	18+18		-	18+18	

Construction analysis

Line	Particular points	Request
L440	Sumitomo EME 6300HR	100 parts per assy lot with Assy report See Note 1
	Kyocera KE-300ETS	
L559	Sumitomo EME 6300HR	
	Kyocera KE-300ETS	

Note 1: These lots must be with full Assy report.

These lots must be with different top marking for traceability versus the Assy reports.

These lots must be manufactured at different days (with different machine set up)



Attachments

Reliability tests description

TEST NAME	DESCRIPTION	PURPOSE
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, and 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.
HTRB: High Temperature Reverse Bias	The device is stressed in static configuration, trying to satisfy as much as possible the following conditions: <ul style="list-style-type: none">- Low power dissipation- Max. supply voltage compatible with diffusion process and internal circuitry limitations- Max. junction temperature.	To maximize the electrical field across either reverse-biased junctions or dielectric layers, in order to investigate the failure modes linked to mobile contamination, oxide ageing, layout sensitivity to surface effects.

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