PRODUCT/PROCESS CHANGE NOTIFICATION

PCN CMG-DTV/04/683

STV9379A : switch to E-STV9379A

2004/08/10

	PCN CMG-DTV/04/683
Product Family /Commercial Product	STV9379A
Type Of Change	Package assembly material change
Reason For Change	New material : eco package
Description of change	To be in adequation with the new ecologic norm.
Forecasted date of change	17-Jan-2005
Forecasted date of samples for customer	10-Aug-2004
Forecasted date for **STMicroelectronics** change qualification report availability	10-Aug-2004
Marking to identify changed product	"E" on the finish goods label
Description of qualification program	See Attached Qualification Plan
Product Line(s) and/or Part Number(s)	See Attached List
Manufacturing Location(s)	
Estimated Date of first shipment	17-Jan-2005

Division Product Manager	P.BERGER	Date: Aug.10 ,04
Division Q.A. Manager	M.PICCOLI	Date: Aug.10 ,04

Customer Acknowledgement of Receipt — PCN CMG-DTV/04/683

Please sign and return to STMicroelectronics Sales Office

☐ Qualification Plan Denied	Name:
☐ Qualification Plan Approved	Title:
	Company:
☐ Change Denied	Date:
☐ Change Approved	Signature:

Remark

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RELIABILITY REPORT

E-STV9379A

Ecopack (lead free) qualification

CONSUMER & MICROCONTROLLER GROUPS
DISPLAY & TV DIVISION

Report prepared by : Y. LAVIGNASSE **CMG/DTV QA Product Manager** **Date:** July 2004

1 - CONTENT

1 - CONTENT

2 - GENERAL

3 - DEVICE INFORMATION

4 - ESD and LATCH-UP RESULTS

5 - RELIABILITY TEST RESULTS

ATTACHMENT 1

2 - GENERAL

DESCRIPTION

The product E-STV9379A is a vertical deflection booster designed for monitor and TV applications and assembled in Ecopack HEPTAWATT package.

MAIN FEATURES

- Power amplifier
- Flyback Generator
- Output current up to 2.6 App
- Thermal protection
- Lead free package (Ecopack)

CONCLUSION

The product E-STV9379A is qualified in is new Lead free Heptawatt package (Ecopack).

3 - DEVICE INFORMATION

TYPE	**: E-STV9379A**
FUNCTION	**: Vertical deflection booster for TV & Monitor applications.**

PROCESS	**: B50-II**
METALLIZATION	: Al-Si
FINAL PASSIVATION	: NITRDE
BACKSIDE METALLIZATION	: Cr-Ni-Au

PACKAGE	**: HEPTAWATT 07 Ecopack**
MOULD MATERIAL	: Epoxy resin
LEAD FRAME MATERIAL	: Copper
WIRE MATERIAL	: Copper
WIRE DIAMETER	: 51 µm (2Mils)

LOCATIONS

FRONT END PLANT	: STMicroelectronics ANG-MO-KIO	(SINGAPORE)
BACK END PLANT	: STMicroelectronics BOUSKOURA	(MOROCCO)
FINAL TEST PLANT	: STMicroelectronics BOUSKOURA	(MOROCCO)
DIVISION QUALITY	: STMicroelectronics GRENOBLE	(FRANCE)

4 - ESD and LATCH-UP RESULTS

ESD

To evaluate adequate pins protection to electrostatic discharge.

CONDITIONS

NORM HBM (human body model): 100pF / 1.5 kOhms

" All the pins withstand +/- 2 KV versus Ground and Vcc"

NORM MM (machine model) : 200pF / 0 Ohm

" All the pins withstand +/- 300 V versus Ground and Vcc"

LATCH-UP

To verify the latch-up sensitivity of each pin.

Positive injection: No latch up for a current injection up to +200mA when voltage maximum rating is not reached before.

Negative injection: No latch up for current injection of –200mA.

5 - RELIABILITY TESTS RESULTS

A - ELECTRICAL TESTS (Die oriented tests)

TEST	CONDITIONS	LOT#	HOURS	SAMPLES	FAILURE
HTRB	Ta = 85 °C Tj # 150 °C Vcc = 42V	1	1000	77	0
OLT	Ta = 25 °C Tj # 140 °C Vcc = 42 V I out = 2.0 App	1	1000	77	0

B – PACKAGE ORIENTED TESTS

TEST	CONDITIONS	LOT#	STEPS	SAMPLES	FAILURE
TMC	-65°C/+150°C	1	1000c	50	0
PPT	120°C/2atm/ 100%RH	1	240H	50	0

(Please refer to attachment 1 for reliability test description)

ATTACHMENT 1: RELIABILITY TESTS DESCRIPTION

TEST NAME	DESCRIPTION	PURPOSE
OLT: Operating Life Test	The device is stressed in dynamic configuration, approaching the operative max. absolute ratings in terms of junction temperature, load current, internal power dissipation.	To simulate the worst-case application stress conditions. The typical failure modes are related to electromigration, wire-bonds degradation, oxide faults.
HTRB: High Temperature Reverse Bias test	The device is stressed in static configuration, trying to satisfy as much as possible the following conditions: -) 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.
ESD: Electrostatic Discharge	The device is submitted to a high voltage peak on all his pins simulating ESD stress according to different simulation models.	To classify the device according to his susceptibility to damage or degradation by exposure to electrostatic discharge.
LU: Latch-up	The device is submitted to a direct current forced/sinked into the input/output pins. Removing the direct current no change in the supply current must be observed.	To verify the presence of bulk parasitic effects inducing latch-up.
TMC: Temperature Cycles Test	The device is submitted to cycle 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.

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