



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16884Generic Copy

Issue Date: 12-Jul-2012

TITLE: Final Notification for Transfer of NCV8518P PS5 Analog Integrated Circuits Die Manufacturing from ON Semiconductor Piestany (Slovakia) to ON Semiconductor Oudenaarde (Belgium)

PROPOSED FIRST SHIP DATE: 12-Oct- 2012

AFFECTED CHANGE CATEGORY(S): ON Semiconductor wafer fab site

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact your local ON Semiconductor Sales Office or Peter Lanyon <peter.lanyon@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available

Contact your local ON Semiconductor Sales Office or Peter Turlo <peter.turlo@onsemi.com>

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

The transfer and qualification of the PowerSense5 process and the associated integrated circuits from the ON Semiconductor Piestany facility (Slovakia) to the ON Semiconductor Oudenaarde facility (Belgium)

The Oudenaarde site is certified according to ISO/TS16949 standards.

The PowerSense5 process is being replicated at Oudenaarde in order to get the same electrical and reliability performances as the Piestany wafer fab.

A full electrical characterization over the temperature range will be performed for each product to check the device functionality and electrical specifications.

Qualification tests are designed to show that the reliability of transferred devices will continue to meet or exceed ON Semiconductor standards.

ON Semiconductor recommends that customers evaluate sample units in each associated application circuit to ensure there are no unexpected electrical incompatibilities.


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RELIABILITY DATA SUMMARY:

The qualification vehicles chosen represent the broadest use of possible design library elements and available process modules.

ONPY2 to Fab2 PS5 Transfer Qualification Summary											
PT 04/10		Qualification Vehicle 1			Qualification Vehicle 2			Qualified to AEC Q100 Grade 1 (-40C to +125C)			
Device:		NCV7708BDWR2G			NCV7729BPDR2G						
Description:		Double Hex Driver			8A H-Bridge Driver						
Die Size:		2.577 x 5.73 mm			3.578 x 5.888 mm						
Package:		OSPI, 28L SOW f, MSL3/260			ASEkr, 20L PSOP, MSL1/260						
							NCV7708			NCV7729	
							Results			Results	
Test	#	Reference	Test Conditions	Comments	# Lots	S.S.	Fail/Total	# Lots	S.S.	Fail/Total	
Test Group A- Accelerated Environment Stress Tests											
PC	A1	JESD22 A113 J-STD-020	Preconditioning: (Test @ R/H) SMD only; Moisture Load and Reflow	PC for AC, TC, THB/HAST	all	all	0 / 720	all	all	0 / 720	
THB	A2	JESD22 A104	Temp Humidity Bias: (Test @ R/H) 85°C/85% RH, bias, 1008hrs		3	80	0 / 240	3	80	0 / 240	
AC	A3	JESD22 A102	Autoclave: (Test @ R) 121°C/100% RH, 15 psi for 96 hrs		3	80	0 / 240	3	80	0 / 240	
TC	A4	JESD22 A104	Temperature Cycle: (Test @ R/H) -65°C to +150°C; for 500cyc		3	80	0 / 240	3	80	0 / 240	
HTSL	A6	JESD22 A103	High Temp Storage Life (Test @ R/H) Ta=150°C for 1008 hrs		3	80	0 / 240	3	80	0 / 240	
Test Group B- Accelerated LifeTime Simulation Tests											
HTOL	B1	JESD22 A108	High Temp Operational Life: (Test @ R/H) Tj=150°C for 504hrs.		3	160	0 / 480	3	160	0 / 480	
ELFR	B2	AEC-Q100-008	Early Life Fail Rate: (Test @ R/H) TA= 125°C for 48hrs		3	800	0 / 2400	3	800	0 / 2400	
Test Group C- Package Assembly integrity Test											
WBS	C1	AEC-Q100-001	Wire Bond Shear Test: Cpk >1.33	In-line data per control plan	30 bonds	5 parts	0 / 30	30 bonds	5 parts	0 / 30	
WBP	C2	Method 2011	Wire Bond Pull: >5gr. Condition C. 0 fails or Cpk>1.33.		30 bonds	5 parts	0 / 30	30 bonds	5 parts	0 / 30	
SD	C3	JESD22 B102	Solderability, 8hr steam age, 245°C PbSn solder, >95% cov		3	15	0 / 45	3	15	0 / 45	
PD	C4	JESD22 B1008	Physical Dimension	In-line data per control plan	3	10	0 / 30	3	10	0 / 30	
Test Group D- Die Fab Reliability Tests											
EM	D1	JESD61	Electromigration	Pass	--	--	--	--	--	--	
TDD	D2	JESD35	Time Dependant Dielectric Breakdown	Pass	--	--	--	--	--	--	
HCI	D3	JESD60 & 28	Hot Carrier Injection	Pass	--	--	--	--	--	--	
NBTI	D4	JESD90	Negative Bias Temperature Instability	Pass	--	--	--	--	--	--	
SM	D5	JESD61, 87, 202	Stress Migration	Pass	--	--	--	--	--	--	
Test Group E- Electrical Verification											
Test	E1		Pre and Post Stress Electrical Test		All	All		All	All		
HBM		AEC-Q100-002,	Electrostatic Discharge, Human Body Model/ Machine Model:			3/V level	Pass 4kV		3/V level	Pass 2kV	
MM	E2	AEC-Q100-003	(Test @ R/H)		1	model	Pass 200V	1	model	Pass 200V	
CDM	E3	AEC-Q100-011	Electrostatic Discharge, Charge Device Model: (Test @ R/H)		1	per spec	Pass 1kV	1	per spec	Pass 1kV	
LU	E4	AEC-Q100-004	Latch-up: (Test @ R/H)		1	6	C II, Lev A	1	6	C II, Lev A	
ED	E5	AEC-Q100-009	Electrical Distribution: (Test @ C/ R/ H)		3	30	Cpk > 1.67	3	30	Cpk > 1.67	

CHANGED PART IDENTIFICATION:

A letter "B" will be added to the OPN and package marking to identify parts from the new wafer fab.

List of affected General Parts:	List of Replacement Parts
NCV8518PDR2G	NCV8518BPDR2G
NCV8518PDG	NCV8518BPDR2G
NCV8518PWR2G	NCV8518BPWR2G
NCV8518PWG	NCV8518BPWR2G