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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16453**Generic Copy

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**Issue Date:** 20 Apr 2010

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

**PROPOSED FIRST SHIP DATE:** 20 Jul 2010

**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](mailto: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](mailto: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](mailto: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			NCV7729BPPR2G				
		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				
Test #	Reference	Test Conditions	Comments	# Lots	S.S.	Results Fail/Total	# Lots	S.S.	Results Fail/Total
<b>Test Group A- Accelerated Environment Stress Tests</b>									
PC	A1	JESD22 A113	Preconditioning: (Test @ R/H) SMD only; Moisture Load and Reflow	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
<b>Test Group B- Accelerated LifeTime Simulation Tests</b>									
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
<b>Test Group C- Package Assembly integrity Test</b>									
WBS	C1	AEC-Q100-001	Wire Bond Shear Test: Cpk >1.33	30 bonds	5 parts	0 / 30	30 bonds	5 parts	0 / 30
WBP	C2	Method 2011	Wire Bond Pull: >Sgr. 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 B100/8	Physical Dimension	3	10	0 / 30	3	10	0 / 30
<b>Test Group D- Die Fab Reliability Tests</b>									
EM	D1	JESD61	Electromigration	Pass	--	--	--	--	--
TDD8	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	--	--	--	--	--
<b>Test Group E- Electrical Verification</b>									
Test	E1	Pre and Post Stress Electrical Test		All	All		All	All	
HBM	E2	AEC-Q100-002	Electrostatic Discharge, Human Body Model/ Machine Model:	1	3/V level model	Pass 4kV	1	3/V level model	Pass 2kV
MM	E2	AEC-Q100-003	(Test @ R/H)	1		Pass 200V	1		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

**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16453****CHANGED PART IDENTIFICATION:**

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

**List of affected General Parts:**

NCV7703D2G  
NCV7703D2R2G  
NCV8518APDG  
NCV8518APDR2G  
NCV8518APWG  
NCV8518APWR2G  
NCV8612MNR2G  
NCV8613MNR2G  
NCV8614MNR2G  
NCV86601D33R2G  
NCV86601D50G  
NCV86601D50R2G  
NCV86602D33R2G  
NCV86602D50R2G  
NCV86603D33R2G  
NCV86603D50R2G  
NCV86604D33R2G  
NCV86604D50R2G  
NCV8851DBG  
NCV8851DBR2G  
NCP4302ADR2G  
NCP4302BDR2G



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**List of affected Customer Specific Parts:**

SCY994351BDWR2G