



INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #16810Generic Copy

Issue Date: 02-Feb-2012

TITLE: Dual sourcing of NCV7340D14R2G (CANI, Tape) and NCV7340D14G (CANI, Tube) (I3T80 technology; currently only produced in Fab2) to also manufacture these devices in Gresham

PROPOSED FIRST SHIP DATE: Q3 2012 or earlier upon customer request

AFFECTED CHANGE CATEGORY(S): Wafer Fab Manufacturing

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION: Contact your local ON Semiconductor Sales Office or your Customer Quality interface

NOTIFICATION TYPE:

Initial Product/Process Change Notification (IPCN)

First change notification sent to customers. IPCNs are issued at least 120 days prior to implementation of the change. An IPCN is advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan.

The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN).

This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 90 days prior to implementation of the change.
The target date for FPCN submission is Q2 2012.

DESCRIPTION AND PURPOSE:

Release of NCV7340D14R2G (CANI, Tape) and NCV7340D14G (CANI, Tube) manufacturing in Gresham to increase ON Semi's wafer fab capacity for this device (dual sourcing)


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QUALIFICATION PLAN:

ON Semi Product Name : **NCV7340D14 Gresham**
 Customer Product Name :
 Maskset : **CANI_P**
 Die Size :
 Process & Waferfab : **I3T80 - ON Semi Gresham Fab**
 Package & Assembly House : **SOIC 8p 150mil (green)**

Qual Plan Revision : **2-0**
 Date : **20-Jan-12**
 Prepared by : **S. Vandeweghe**
 Approved by : **G. Gallopyn**
 Qual Start Date Forecast : **Q2 / 2012**
 Total parts required : **1245**

ACCELERATED ENVIRONMENT STRESS TESTS

Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Lots	Total Parts Required	Comments
A1	Moisture Preconditioning (PC)	J-STD-020 & JESD22-A113	Moisture Soak (MSL = 2) Solder Reflow (3x @ 260 °C) Delamination check (SAT)	Test @ room	231	0	3	693	Preconditioning before tests A2 (HAST), A3 (UHST), A4 (TC).
A2	HAST Biased (HAST)	JESD22-A110	130 °C / 85%RH for 96 hrs	Test @ room Test @ hot	77	0	3	231	Samples preconditioned per test A1 (PC)
A3	HAST Unbiased (UHST)	JESD22-A118	130 °C / 85%RH for 96 hrs	Test @ room	77	0	3	231	Samples preconditioned per test A1 (PC)
A4	Temperature Cycling (TC)	JESD22-A104	-65 °C to 175 °C for 500 cycles	Test @ hot	77	0	3	231	Samples preconditioned per test A1. Wire Bond Pull (test C2) planned after TC.
A5	Power Temperature Cycling (PTC)	JESD22-A105	N.A.	Test @ room Test @ hot	45	0	1	0	Not applicable (P < 1 W)
A6	High Temperature Storage (HTS)	JESD22-A103	175 °C for 500 hrs	Test @ room Test @ hot	77	0	3	231	

ACCELERATED LIFETIME SIMULATION TESTS

Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Lots	Total Parts Required	Comments
B1	High Temperature Operating Lifetest (HTOL)	JESD22-A108	Ta = 125 °C for 1000hrs	Test @ room Test @ hot Test @ cold	77	0	3	231	
B2	Early Life Failure Rate (ELFR)	JESD22-A108	Ta >= 125 °C for 48 hrs	Test @ hot Test @ room	800	0	0	0	Qualification by generic data for I3T80 process in Gresham.
B3	NVM Endurance (EDR)	AEC-Q100 005	N.A.	Test @ room Test @ hot	77	0	0	0	Not applicable (no NVM)


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PACKAGE ASSEMBLY INTEGRITY TESTS									
Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Lots	Total Parts Required	Comments
C1	Wire Bond Shear (WBS)	AEC-Q100-001		N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66	3	15	
C2	Wire Bond Pull Strength (WBP)	MIL-STD883 Method 2011		N.A.	30 bonds from 5 parts	Cpk > 1.33 Ppk > 1.66 or 0 Fails after test A4 (TC)	3	15	
C3	Solderability (SD)	JESD22-B102		N.A.	15 parts	> 95% lead coverage	1	0	Covered by assembly qual
C4	Physical Dimensions (PD)	JESD22-B102 JESD22-B108		N.A.	10 parts	Cpk > 1.33 Ppk > 1.66	3	0	Covered by assembly qual
C5	Solder Ball Shear (SBS)	AEC-Q100-010		N.A.	5 balls from 10 parts		3	0	Not applicable (no BGA)
C6	Lead Integrity (LI)	JESD22-B105		N.A.	10 leads from 5 parts		1	0	Not applicable (Surface Mount Device)

DIE FABRICATION RELIABILITY TESTS									
Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Lots	Total Parts Required	Comments
D1	Electromigration (EM)	-		N.A.	-	-	-	0	Generic qualification of I3180 process in Gresham.
D2	Time Dependent Dielectric Breakdown (TDDB)	-		N.A.	-	-	-	0	Generic qualification of I3180 process in Gresham.
D3	Hot Carrier Injection (HCI)	-		N.A.	-	-	-	0	Generic qualification of I3180 process in Gresham.
D4	Negative Bias Temperature Instability (NBTI)	-		N.A.	-	-	-	0	Generic qualification of I3180 process in Gresham.
D5	Stress Migration (SM)	-		N.A.	-	-	-	0	Generic qualification of I3180 process in Gresham.



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ELECTRICAL VERIFICATION TESTS									
Test #	Test	Reference	Test Conditions	Electrical Test Requirements	Sample Size per lot	Accept Criteria	# of Lots	Total Parts Required	Comments
E1	Pre- and Post-Stress Function / Parameter (TEST)	AEC-Q100-007							Implemented in production test flow and Product Reliability Qualification.
E2-A	ESD - Human Body Model (HBM)	AEC-Q100-002	Per product specification.	Test @ room Test @ hot	3 per voltage	0	1	15	
E2-B	ESD - Machine Model (MM)	AEC-Q100-003	Per product specification.	Test @ room Test @ hot	3 per voltage	0	1	15	
E3	ESD - Charged Device Model (CDM)	AEC-Q100-011	Per product specification.	Test @ room Test @ hot	3 per voltage	0	1	15	
E4	Latch-up (LU)	AEC-Q100-004	Per product specification.	Test @ room Test @ hot	6	0	1	15	
E5	Electrical Distributions (ED)	AEC-Q100-009		Test @ room Test @ hot Test @ cold	200	Cpk > 1.66	3	600	For matching related parameters : Cpk > 1.33
E6	Fault grading (FG)	AEC-Q100-007							Implemented in production test flow.
E7	Characterization (CHAR)	AEC-Q003							Skew lot characterisation (corner processing).

Remarks :

- Grade 1 qualification per AEC-Q100-Rev-G (-40°C to +125°C ambient operating temperature range).
- Only tests highlighted in green will be executed on the product during qualification.

List of affected Parts:

ONSEMI Sellable Code
NCV7340D14R2G (CAN1, Tape)
NCV7340D14G (CAN1, Tube)