ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION
Generic Copy

13-Jul-2009

SUBJECT: ON Semiconductor Final Product/Process Change Notification #16300

TITLE: Final Notification for Transfer of High Speed Logic Integrated Circuits Die Manufacturing From ON Semiconductor Piestany (Slovakia) To Tower Semiconductor Ltd. (Israel).

PROPOSED FIRST SHIP DATE: 12-Oct-2009

AFFECTED CHANGE CATEGORY(S): ON Semiconductor Fab Site

AFFECTED PRODUCT DIVISION(S): Standard Logic Products

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or Sean Clark<ffthgm@onsemi.com>

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available 3Q 2009
Contact your local ON Semiconductor Sales Office or Matt Kas <Matt.Kas@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 your local ON Semiconductor Sales Office.

DESCRIPTION AND PURPOSE:

This is the FPCN16300 to IPCN16178 available at www.onsemi.com ON Semiconductor.
As previously publically announced:
May 14, 2008 - ON Semiconductor (Nasdaq: ONNN), has announced plans to close its two wafer manufacturing facilities located in Piestany, Slovakia, and transfer the production lines to other facilities. The targeted close date is Q4 2009.

Description of the change:
The transfer and qualification of the High Speed Logic CMOS process and the associated integrated circuits from the ON Semiconductor Piestany facility (Slovakia) to the Tower Semiconductor Ltd. wafer fabrication site located in Migdal Haemek, Israel.

The Tower Semiconductor Ltd Migdal Haemek, Israel fab is certified according to ISO/TS16949 standard.

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The High Speed Logic process is a CMOS technology being replicated at Tower Semiconductor Ltd. to get the same electrical and reliability performances as the Piestany wafer fab.

Assembly of SOIC, SOIC Wide and TSSOP packages will also be converted at the same time from gold wire bond to copper wire bond. Other packages for High Speed Logic will continue to use gold wire bond; these packages include PDIP and QFN. The qualification plan includes the requirement to validate both the fab transfer and conversion to copper wire bond altogether.

The integrated circuits electrical specifications will remain identical.
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.

The High Speed Logic process has been qualified at Tower Semiconductor Ltd. All products are expected to be available by the end of 4Q2009.
Samples will be available beginning July 2009.

QUALIFICATION PLAN

Product Qualification Vehicles
The product qualification vehicles represent the broadest use of possible design library elements and available process modules. The following qualification vehicles were selected for this qualification

MC74HC4051
MC74HC4066
MC74HC245
NLSF1174

Qualification of each transfer device type transferred was performed to the following requirements:
Five temperature electrical characterization
ESD testing Human Body Model and Machine Model
Latch up testing

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RELIABILITY DATA SUMMARY:

Reliability Test Results:

Test	Conditions	Results	
Early Life (ELFR)	Ta=+125°C, Bias	48hrs	0/4800
High Temp.Operating Life Life (HTOL)	Ta=+125°C, Bias	1008hrs	0/539
Temp. Cycle (TC)*	-65°C to +150°C	500 cycles	0/539
Autoclave (AC)*	+121°C /15psig/100%RH	96hrs	0/539
High Temp Storage Life (HTSL)	+150°C	504hrs	0/539
High Accelerated Stress Test* (HAST)	+130°C/85%RH Bias	96hrs	0/539
Wire Bond Pull Strength (BPS)	30 bonds/5 units	CPK > 1.33 Pass	
Wire Bond Shear Strength (BS)	30 bonds/5 units	CPK > 1.33 Pass	

*Note: These tests may be performed with pre-conditioned parts depending upon the device type used.

CHARACTERIZATION RESULTS

DC, AC, ESD, and Latch-up testing was performed on the qualification vehicles and compared to historical data for each device. Characterization results on all qualification devices matched historical data. Characterization results are available for review upon request.

CHANGED PART IDENTIFICATION

There will be no changes to standard device markings. Normal assembly lots traceability codes will identify the wafer fab source.

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AFFECTED DEVICE LIST

MC74HC00ADG
MC74HC00ADR2
MC74HC00ADR2G
MC74HC00ADTR2
MC74HC00ADTR2G
MC74HC00AN
MC74HC00ANG
MC74HC02AD
MC74HC02ADG
MC74HC02ADR2
MC74HC02ADR2G
MC74HC02ADTR2
MC74HC02ADTR2G
MC74HC02AN
MC74HC02ANG
MC74HC03ADG
MC74HC03ADR2
MC74HC03ADR2G
MC74HC03ADTR2
MC74HC03ADTR2G
MC74HC03ANG
MC74HC04AD
MC74HC04ADG
MC74HC04ADR2
MC74HC04ADR2G
MC74HC04ADTR2
MC74HC04ADTR2G
MC74HC04AN
MC74HC04ANG
MC74HC08AD
MC74HC08ADG
MC74HC08ADR2
MC74HC08ADR2G
MC74HC08ADTR2
MC74HC08ADTR2G
MC74HC08AN
MC74HC08ANG
MC74HC125AD
MC74HC125ADG
MC74HC125ADR2
MC74HC125ADR2G
MC74HC125ADT
MC74HC125ADTG
MC74HC125ADTR2
MC74HC125ADTR2G
MC74HC125AN
MC74HC125ANG
MC74HC126ADG
MC74HC126ADR2

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AFFECTED DEVICE LIST

MC74HC126ADR2G
MC74HC126ADTR2
MC74HC126ADTR2G
MC74HC126ANG
MC74HC132AD
MC74HC132ADG
MC74HC132ADR2
MC74HC132ADR2G
MC74HC132ADT
MC74HC132ADTG
MC74HC132ADTR2
MC74HC132ADTR2G
MC74HC132AN
MC74HC132ANG
MC74HC138AD
MC74HC138ADG
MC74HC138ADR2
MC74HC138ADR2G
MC74HC138ADTR2
MC74HC138ADTR2G
MC74HC138AN
MC74HC138ANG
MC74HC139ADG
MC74HC139ADR2
MC74HC139ADR2G
MC74HC139ADR2H
MC74HC139ADTR2
MC74HC139ADTR2G
MC74HC139AN
MC74HC139ANG
MC74HC14AD
MC74HC14ADG
MC74HC14ADR2
MC74HC14ADR2G
MC74HC14ADT
MC74HC14ADTG
MC74HC14ADTR2
MC74HC14ADTR2G
MC74HC14AN
MC74HC14ANG
MC74HC157ADG
MC74HC157ADR2
MC74HC157ADR2G
MC74HC157ADTR2
MC74HC157ADTR2G
MC74HC157AN
MC74HC157ANG
MC74HC164ADG
MC74HC164ADR2

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AFFECTED DEVICE LIST

MC74HC164ADR2G
MC74HC164ADTR2
MC74HC164ADTR2G
MC74HC164AN
MC74HC164ANG
MC74HC165AD
MC74HC165ADG
MC74HC165ADR2
MC74HC165ADR2G
MC74HC165ADTR2
MC74HC165ADTR2G
MC74HC165AN
MC74HC165ANG
MC74HC174ADG
MC74HC174ADR2
MC74HC174ADR2G
MC74HC174ADTR2
MC74HC174ADTR2G
MC74HC174ANG
MC74HC175ADG
MC74HC175ADR2
MC74HC175ADR2G
MC74HC175ADTR2
MC74HC175ADTR2G
MC74HC175ANG
MC74HC240ADTR2
MC74HC240ADTR2G
MC74HC240ADWG
MC74HC240ADWR2
MC74HC240ADWR2G
MC74HC240AN
MC74HC240ANG
MC74HC244ADTG
MC74HC244ADTR2
MC74HC244ADTR2G
MC74HC244ADW
MC74HC244ADWG
MC74HC244ADWR2
MC74HC244ADWR2G
MC74HC244AN
MC74HC244ANG
MC74HC245ADT
MC74HC245ADTG
MC74HC245ADTR2
MC74HC245ADTR2G
MC74HC245ADW
MC74HC245ADWG
MC74HC245ADWR2
MC74HC245ADWR2G

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AFFECTED DEVICE LIST

MC74HC245AN
MC74HC245ANG
MC74HC273ADT
MC74HC273ADTG
MC74HC273ADTR2
MC74HC273ADTR2G
MC74HC273ADW
MC74HC273ADWG
MC74HC273ADWR2
MC74HC273ADWR2G
MC74HC273AN
MC74HC273ANG
MC74HC32AD
MC74HC32ADG
MC74HC32ADR2
MC74HC32ADR2G
MC74HC32ADTR2
MC74HC32ADTR2G
MC74HC32AN
MC74HC32ANG
MC74HC373ADT
MC74HC373ADTG
MC74HC373ADTR2
MC74HC373ADTR2G
MC74HC373ADW
MC74HC373ADWG
MC74HC373ADWR2
MC74HC373ADWR2G
MC74HC373AN
MC74HC373ANG
MC74HC374ADT
MC74HC374ADTG
MC74HC374ADTR2
MC74HC374ADTR2G
MC74HC374ADW
MC74HC374ADWG
MC74HC374ADWR2
MC74HC374ADWR2G
MC74HC374AN
MC74HC374ANG
MC74HC390ADG
MC74HC390ADR2
MC74HC390ADR2G
MC74HC390ADTR2
MC74HC390ADTR2G
MC74HC390ANG
MC74HC393ADG
MC74HC393ADR2
MC74HC393ADR2G

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AFFECTED DEVICE LIST

MC74HC393ADTR2
MC74HC393ADTR2G
MC74HC393ANG
MC74HC4020ADG
MC74HC4020ADR2
MC74HC4020ADR2G
MC74HC4020ADTR2
MC74HC4020ADTR2G
MC74HC4020AN
MC74HC4020ANG
MC74HC4040AD
MC74HC4040ADG
MC74HC4040ADR2
MC74HC4040ADR2G
MC74HC4040ADTR2
MC74HC4040ADTR2G
MC74HC4040AN
MC74HC4040ANG
MC74HC4046AD
MC74HC4046ADG
MC74HC4046ADR2
MC74HC4046ADR2G
MC74HC4046ADT
MC74HC4046ADTG
MC74HC4046ADTR2
MC74HC4046ADTR2G
MC74HC4046AN
MC74HC4046ANG
MC74HC4051ADG
MC74HC4051ADR2
MC74HC4051ADR2G
MC74HC4051ADR2H
MC74HC4051ADT
MC74HC4051ADTG
MC74HC4051ADTR2
MC74HC4051ADTR2G
MC74HC4051ADW
MC74HC4051ADWG
MC74HC4051ADWR2
MC74HC4051ADWR2G
MC74HC4051AN
MC74HC4051ANG
MC74HC4052ADG
MC74HC4052ADR2
MC74HC4052ADR2G
MC74HC4052ADT
MC74HC4052ADTG
MC74HC4052ADTR2
MC74HC4052ADTR2G

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AFFECTED DEVICE LIST

MC74HC4052ADWG
MC74HC4052ADWR2
MC74HC4052ADWR2G
MC74HC4052AN
MC74HC4052ANG
MC74HC4053ADG
MC74HC4053ADR2
MC74HC4053ADR2G
MC74HC4053ADT
MC74HC4053ADTG
MC74HC4053ADTR2
MC74HC4053ADTR2G
MC74HC4053ADWG
MC74HC4053ADWR2
MC74HC4053ADWR2G
MC74HC4053ANG
MC74HC4060ADG
MC74HC4060ADR2
MC74HC4060ADR2G
MC74HC4060ADT
MC74HC4060ADTG
MC74HC4060ADTR2
MC74HC4060ADTR2G
MC74HC4060AN
MC74HC4060ANG
MC74HC4066AD
MC74HC4066ADG
MC74HC4066ADR2
MC74HC4066ADR2G
MC74HC4066ADR2H
MC74HC4066ADTR2
MC74HC4066ADTR2G
MC74HC4066ANG
MC74HC4316ADR2
MC74HC4316ADR2G
MC74HC4316ANG
MC74HC4538AD
MC74HC4538ADG
MC74HC4538ADR2
MC74HC4538ADR2G
MC74HC4538ADTR2
MC74HC4538ADTR2G
MC74HC4538AN
MC74HC4538ANG
MC74HC4851AD
MC74HC4851ADG
MC74HC4851ADR2
MC74HC4851ADR2G
MC74HC4851ADTR2

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AFFECTED DEVICE LIST

MC74HC4851ADTR2G
MC74HC4851ADWR2
MC74HC4851ADWR2G
MC74HC4851ANG
MC74HC4852ADG
MC74HC4852ADR2
MC74HC4852ADR2G
MC74HC4852ADTR2
MC74HC4852ADTR2G
MC74HC4852ANG
MC74HC540ADTR2
MC74HC540ADTR2G
MC74HC540ADWG
MC74HC540ADWR2
MC74HC540ADWR2G
MC74HC540ANG
MC74HC541ADT
MC74HC541ADTG
MC74HC541ADTR2
MC74HC541ADTR2G
MC74HC541ADW
MC74HC541ADWG
MC74HC541ADWR2
MC74HC541ADWR2G
MC74HC541AN
MC74HC541ANG
MC74HC573ADT
MC74HC573ADTG
MC74HC573ADTR2
MC74HC573ADTR2G
MC74HC573ADW
MC74HC573ADWG
MC74HC573ADWR2
MC74HC573ADWR2G
MC74HC573AN
MC74HC573ANG
MC74HC574ADTR2
MC74HC574ADTR2G
MC74HC574ADW
MC74HC574ADWG
MC74HC574ADWR2
MC74HC574ADWR2G
MC74HC574AN
MC74HC574ANG
MC74HC589AD
MC74HC589ADG
MC74HC589ADR2
MC74HC589ADR2G
MC74HC589ADTR2

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AFFECTED DEVICE LIST

MC74HC589ADTR2G
MC74HC589AN
MC74HC589ANG
MC74HC595AD
MC74HC595ADG
MC74HC595ADH
MC74HC595ADR2
MC74HC595ADR2G
MC74HC595ADR2H
MC74HC595ADT
MC74HC595ADTG
MC74HC595ADTR2
MC74HC595ADTR2G
MC74HC595ADTR2H
MC74HC595AN
MC74HC595ANG
MC74HC74AD
MC74HC74ADG
MC74HC74ADR2
MC74HC74ADR2G
MC74HC74ADTR2
MC74HC74ADTR2G
MC74HC74AN
MC74HC74ANG
MC74HC86AD
MC74HC86ADG
MC74HC86ADR2
MC74HC86ADR2G
MC74HC86ADTR2
MC74HC86ADTR2G
MC74HC86ANG
MC74HCT04ADG
MC74HCT04ADR2
MC74HCT04ADR2G
MC74HCT04ADTR2
MC74HCT04ADTR2G
MC74HCT04ANG
MC74HCT138ANG
MC74HCT14ADG
MC74HCT14ADR2
MC74HCT14ADR2G
MC74HCT14ADR2GH
MC74HCT14ADTR2
MC74HCT14ADTR2G
MC74HCT14ANG
MC74HCT244ADTR2
MC74HCT244ADTR2G
MC74HCT244ADWG
MC74HCT244ADWR2

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AFFECTED DEVICE LIST

MC74HCT244ADWR2G
MC74HCT244AN
MC74HCT244ANG
MC74HCT245ADTG
MC74HCT245ADTR2
MC74HCT245ADTR2G
MC74HCT245ADW
MC74HCT245ADWG
MC74HCT245ADWR2
MC74HCT245ADWR2G
MC74HCT245AN
MC74HCT245ANG
MC74HCT273ADTR2
MC74HCT273ADTR2G
MC74HCT273ADWG
MC74HCT273ADWR2G
MC74HCT273ANG
MC74HCT373ADTR2
MC74HCT373ADTR2G
MC74HCT373ADWG
MC74HCT373ADWR2
MC74HCT373ADWR2G
MC74HCT373ANG
MC74HCT374ADTR2
MC74HCT374ADTR2G
MC74HCT374ADTR2H
MC74HCT374ADWG
MC74HCT374ADWR2
MC74HCT374ADWR2G
MC74HCT374ANG
MC74HCT541ADTR2
MC74HCT541ADTR2G
MC74HCT541ADWG
MC74HCT541ADWR2
MC74HCT541ADWR2G
MC74HCT541ANG
MC74HCT573ADTR2
MC74HCT573ADTR2G
MC74HCT573ADWG
MC74HCT573ADWR2
MC74HCT573ADWR2G
MC74HCT573ANG
MC74HCT574ADTR2
MC74HCT574ADTR2G
MC74HCT574ADWG
MC74HCT574ADWR2
MC74HCT574ADWR2G
MC74HCT574ANG
MC74HCT74ADG

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AFFECTED DEVICE LIST

MC74HCT74ADR2
MC74HCT74ADR2G
MC74HCT74ANG
MC74HCU04ADG
MC74HCU04ADR2
MC74HCU04ADR2G
MC74HCU04ADTR2
MC74HCU04ADTR2G
MC74HCU04ANG
MC74VHC4051DR2
MC74VHC4051DR2G
MC74VHC4051DTR2
MC74VHC4051DTR2G
MC74VHC4052DR2G
MC74VHC4052DTR2
MC74VHC4052DTR2G
MC74VHC4053DR2G
MC74VHC4053DTR2
MC74VHC4053DTR2G
MC74VHC4066DR2G
MC74VHC4066DTR2
MC74VHC4066DTR2G
MC74VHC4316DG
MC74VHC4316DR2G
MC74VHC4316DT
MC74VHC4316DTG
MC74VHC4316DTR2
MC74VHC4316DTR2G
NLSF1174MNR2G
NLV74HC04ADR2G
NLV74HC244ADWR2G
NLV74HC373ADWR2
NLV74HC4053ADWRG
NLV74HC541ADWR2
NLV74HC573ADWR2
NLV74HCT541ADWG
NLV74HCT541ADWRG
NLV74HCT573ADWR2
NLV74HCT574ADWRG
NLVHC165ADR2G
NLVHC4051ADWR2G
NLVHC4851ADR2G
NLVHC4851ADTR2G
SC74HC595ADTR2G
SL000HC574ANG