ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16391

Generic Copy

18-Mar-2010

SUBJECT: ON Semiconductor Final Product/Process Change Notification #FPCN16391

TITLE: Wafer Capacity Expansion

PROPOSED FIRST SHIP DATE: 18-Jun-2010

AFFECTED CHANGE CATEGORY(S): Wafer Fabrication

AFFECTED PRODUCT DIVISION: PowerFET Business Unit

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

SAMPLES: Contact your local ON Semiconductor Sales Office or Brian Goodburn
< brian.goodburn@onsemi.com >

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office Office or Donna Scheuch
< d.scheuch@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:

Referencing the ON Semiconductor ON Semiconductor Initial Product/Process Change Notification #16391: Wafer Capacity Expansion. This is the Final Process Change Notification.

ON Semiconductor is adding wafer fabrication capacity for their High Cell Density (HD3e) and Trench (T2) MOSFET technology silicon platforms. This will be accomplished by qualifying United Microelectronics Corp (UMC), a wafer fabrication facility located in Taiwan. During early 2010, Wafer starts of both Trench and HD3e Silicon technologies will begin at UMC.

Reliability Qualification and full electrical characterization over temperature have been performed.

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RELIABILITY DATA SUMMARY:

Reliability Test Results: **NTB5411NT4G** (60V, HD3e Planar, N-Channel, D2PAK Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=175'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/231

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=175'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/231

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 3-Lots
Results: 0/231

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 3-Lots
Results: 0/231

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 3-Lots
Results: 0/231

Test: High Humididty, High Temperature Reverse Bias (H3TRB)
Conditions: Vds= 24Vds, Ta=85'C, Rel Humidity = 85%, 1008-Hrs
Results: 0/231

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 3-Lots
Results: 0/231

Reliability Test Results: **NTD25P03T4G** (30V, HD3e Planar, P-Channel, DPAK Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=175'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 1-Lots
Results: 0/77

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=175'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 1-Lots
Results: 0/77

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 1-Lots
Results: 0/77

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 500-cy, 1-Lots
Results: 0/77

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 1-Lots
Results: 0/77

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 1-Lots
Results: 0/77

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Reliability Test Results: **NTMS3P03R2G** (30V, HD3e Planar, P-Channel, SO8 Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 1-Lots
Results: 0/77

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 1-Lots
Results: 0/77

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 1-Lots
Results: 0/77

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 500-cy, 1-Lots
Results: 0/77

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 1-Lots
Results: 0/77

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 1-Lots
Results: 0/77

Reliability Test Results: **NTR4501NT1G** (20V, HD3e Planar, N-Channel, SOT23 Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration : 504-Hrs, 1-Lots
Results: 0/77

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vgs= 100% Vgs Rating, Duration : 504-Hrs, 1-Lots
Results: 0/77

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 7.5K- cy, 1-Lots
Results: 0/77

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 500-cy, 1-Lots
Results: 0/77

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 1-Lots
Results: 0/77

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 1-Lots
Results: 0/77

Reliability Test Results: **NTB6411ANG** (100V, HD3e Planar, N-Channel, D2PAK Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=175'C, Vds= 80% BVdss Rating, Duration : 504-Hrs, 1-Lots
Results: 0/77

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Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=175'C, Vgs= 100% Vgs Rating, Duration : 504-Hrs, 1-Lots
Results: 0/77

Reliability Test Results: **NTD110N02RT4G** (24V, HD3e Planar, N-Channel, DPAK Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=175'C, Vds= 80% BVdss Rating, Duration : 504-Hrs, 1-Lots
Results: 0/231

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=175'C, Vgs= 100% Vgs Rating, Duration : 504-Hrs, 1-Lots
Results: 0/231

Reliability Test Results: **NTD4804** (30V, Trench MOSFET, N-Channel, DPAK Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=175'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/252

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=175'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/252

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 7.5K- cy, 3-Lots
Results: 0/252

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 500-cy, 3-Lots
Results: 0/252

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 3-Lots
Results: 0/252

Test: High Humididty, High Temperature Reverse Bias (H3TRB)
Conditions: Vds= 24Vds, Ta=85'C, Rel Humidity = 85%, 504-Hrs
Results: 0/252

ELECTRICAL CHARACTERISTIC SUMMARY:

There is no change in electrical parametric performance. Characterization data is available upon request.

CHANGED PART IDENTIFICATION:

There will be no physical change to the Devices assembled with Die from the United Microelectronics Corp (UMC) wafer fabrication facility. There will be Wafer Lot traceability from the manufacturing Lot to determine the Die origin. Product assembled with the Die fabricated from the UMC wafer facility will have a Finish Good Date Code of '1023' and newer indicating a Die change-over during the second week in June, 2010.

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List of affected General Parts:

NTD4804N-1G	NTD4856N-1G	NTD25P03LG	NTMS10P02R2
NTD4804N-35G	NTD4856N-35G	NTD25P03LRLG	NTMS10P02R2G
NTD4804NA-1G	NTD4856NT4G	NTD25P03LT4	NTMS10P02R2G
NTD4804NA-35G	NTD4857NT4G	NTD25P03LT4G	NTMS3P03R2G
NTD4804NT4G	NTD4858N-1G	NTD3808NT4G	NTMS4705NR2G
NTD4804NT4H	NTD4858N-35G	NTD40N03R-1G	NTMS4706NR2G
NTD4805N-1G	NTD4858N-35H	NTD40N03RT4G	NTMS4N01R2
NTD4805N-35G	NTD4858NAT4G	NTD4302G	NTMS4N01R2G
NTD4805NT4G	NTD4858NT4G	NTD4302T4G	NTMS5P02R2
NTD4806N-1G	NTD4858NT4H	NTD4404N1G	NTMS5P02R2G
NTD4806N-35G	NTD4860N-35G	NTD50N03R-1G	NTMS5P02R2SG
NTD4806N-35H	NTD4860NAT4G	NTD50N03R-35G	NTMS7N03R2
NTD4806NA-1G	NTD4860NT4G	NTD50N03RG	NTMS7N03R2G
NTD4806NA-35G	NTD4860NT4G	NTD50N03RT4G	NTMSD3P102R2SG
NTD4806NAT4G	NTD4863N-1G	NTD5406NG	NTMSD3P303R2G
NTD4806NAT4H	NTD4863N-1G	NTD5406NT4G	NTMSD6N303R2G
NTD4806NT4G	NTD4863N-35G	NTD5407NG	NTMSD6N303R2SG
NTD4806NT4H	NTD4863N-35G	NTD5407NT4G	NTP125N02RG
NTD4808N-1G	NTD4863NAT4G	NTD5414NT4G	NTP5404NRG
NTD4808N-35G	NTD4863NT4G	NTD60N02R-1G	NTP5411NG
NTD4808NT4G	NTD4863NT4H	NTD60N02RG	NTP5426NG
NTD4809N-1G	NTD4865NT4G	NTD60N02RT4	NTP6410ANG
NTD4809N-35G	NTB125N02RT4G	NTD60N02RT4G	NTP6411ANG
NTD4809NA-35G	NTB23N03RG	NTD6414AN-1G	NTP6412ANG
NTD4809NAT4G	NTB23N03RT4G	NTD6414ANT4G	NTP65N02RG
NTD4809NH-1G	NTB4302T4G	NTD65N03R-35G	NTP75N03L09
NTD4809NH-35G	NTB5404NT4G	NTD65N03RG	NTP75N03L09G
NTD4809NH-35H	NTB5411NT4G	NTD65N03RT4G	NTP85N03G
NTD4809NHT4G	NTB5426NT4G	NTD70N03R	NTR0202PLT1
NTD4809NHT4H	NTB6410ANG	NTD70N03R-1G	NTR0202PLT1G
NTD4809NT4G	NTB6411ANG	NTD70N03RT4G	NTR1P02LT1
NTD4810N-1G	NTB65N02RT4G	NTD78N03-1G	NTR1P02LT1G
NTD4810N-35G	NTB75N03L09G	NTD78N03-35G	NTR1P02LT1H
NTD4810NH-1G	NTB75N03L09T4	NTD78N03T4G	NTR1P02LT3G
NTD4810NT4G	NTB75N03L09T4G	NTD80N02-1G	NTR1P02T1G
NTD4813N-35G	NTB75N03RT4G	NTD80N02T4G	NTR4501NT1
NTD4813NH-1G	NTB85N03T4G	NTD85N02R-1G	NTR4501NT1G
NTD4813NH-35G	NTB90N02T4G	NTD85N02RT4G	NTR4501NT3G
NTD4813NHT4G	NTD110N02R-001G	NTD95N02RT4G	NTR4502PT1
NTD4813NT4G	NTD110N02RG	NTMD2C02R2G	NTR4502PT1G
NTD4815N-1G	NTD110N02RT4G	NTMD2P01R2G	NTR4502PT3G
NTD4815N-35G	NTD14N03RT4G	NTMD3P03R2G	NTR4503NT1
NTD4815NH-1G	NTD20N03L27	NTMD4N03R2	NTR4503NT1G
NTD4815NH-35G	NTD20N03L27-1G	NTMD4N03R2G	NVMD6P02R2G
NTD4815NHT4G	NTD20N03L27G	NTMD6N02R2	NVMS5P02R2G
NTD4815NT4G	NTD20N03L27T4	NTMD6N02R2G	NVTR01P02LT1G
NTD4854NT4G	NTD20N03L27T4G	NTMD6N03R2G	STD110N02RT4G
NTD4855N-35G	NTD23N03R-1G	NTMD6N04R2G	STD25P03LT4G
NTD4855NT4G	NTD23N03RT4G	NTMD6P02R2G	
NTD4855NT4H	NTD25P03L1G	NTMD6P02R2SG	