ON Semiconductor

# FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16618

Generic Copy

**Issue Date:** 01-Apr-2011

**TITLE:** Additional Wafer Capacity Expansion at United Microelectronics Corporation

**PROPOSED FIRST SHIP DATE:** 01-Jul-2011

**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 Jennie Shen<Jennie.Shen@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 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 Initial Product/Process Change Notification#16391: Wafer Capacity Expansion. This is the Final Process Change Notification.

ON Semiconductor is continuing to add more wafer fabrication capacity of their Trench2 (T2) MOSFET technology silicon platform. This has been accomplished by completing more qualification of United Microelectronics Corp (UMC), a wafer fabrication facility located in Taiwan. During early 2011, additional starts of Trench technology 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: NTMFS4833NT1G: (Trench2 with Solderable Top Metal, N-Channel, SO8FL Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration: 1008-Hrs, 3-Lots
Results: 0/231

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'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=-55'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 3-Lots
Results: 0/231

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

Test: Resistance to Solder Heat
Conditions: Ta= 260'C, Dwell Time= 10-Sec, Immersion
Results: 0/30

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

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## 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 ‘1127 and newer indicating a Die change-over during the first week in July, 2011.

## List of affected General Parts:

| DEVICES | |
|---|---|
| NTD4960N-1G | NTMFS4839NHT1G |
| NTD4960N-35G | NTMFS4841NHT1G |
| NTD4960NT4G | NTMFS4841NT1G |
| NTD4963N-1G | NTMFS4845NT1G |
| NTD4963N-35G | NTMFS4846NT1G |
| NTD4963NT4G | NTMFS4847NAT1G |
| NTD5802NT4G | NTMFS4847NAT3G |
| NTD5803NT4G | NTMFS4847NT1G |
| NTD5804NT4G | NTMFS4851NT1G |
| NTD5805NT4G | NTMFS4852NT1G |
| NTD5806NT4G | NTMFS4852NT3G |
| NTD5807NT4G | NTMFS4921NT1G |
| NTMFS4821NT1G | NTMFS4921NT3G |
| NTMFS4823NT1G | NTMFS4946NT1G |
| NTMFS4823NT3G | NTMFS4946NT3G |
| NTMFS4833NT1G | NTTFS4821NTAG |
| NTMFS4833NT3G | NTTFS4821NTWG |
| NTMFS4834NT1G | NTTFS4823NTAG |
| NTMFS4835NT1G | NTTFS4823NTWG |
| NTMFS4835NT3G | NTTFS4824NTAG |
| NTMFS4836NT1G | NTTFSC4821NTAG |