ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16658A

Generic Copy

Issue Date: 01-Feb-2012

TITLE: Sourcing MOSFET Die from United Microelectronics Corporation

PROPOSED FIRST SHIP DATE: 01-May-2012

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 Jason Jeong< Jason.Jeong@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:

ON Semiconductor is already utilizing United Microelectronics Corp (UMC) for their High Cell Density (HD3e) and Trench (T2) MOSFET technology silicon platforms.

A fraction of the Trench (T1) MOSFET portfolio will start using UMC Wafer Fab, March 2012 per FPCN #16658. With additional qualification and electrical characterization of this silicon platform, more T1 products will be built with Die sourced from the UMC. Wafer starts of this second group of products will begin in May 2012.

Reliability Qualification and full electrical characterization over temperature have been performed, and available upon request.

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RELIABILITY DATA SUMMARY:

Reliability Test Results: NTLJS3113PT1G (20V 7.7A 40 mOhm Single P-Ch WDF Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration : 504-Hrs, 2-Lots
Results: 0/160

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vgs= 100% Vgs Rating, Duration : 504-Hrs, 2-Lots
Results: 0/160

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-55'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 2-Lots
Results: 0/160

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 2-Lots
Results: 0/160

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 2-Lots
Results: 0/160

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=131'C, P=18.8psi, RH=85%, Duration: 96-Hrs, 2-Lots
Results: 0/160

Reliability Test Results: NTHS4166NT1G (30V 8.2A 24mOhm Single N-Ch ChipFET Package)
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 2-Lots
Results: 0/160

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 2-Lots
Results: 0/160

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-55'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 2-Lots
Results: 0/160

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 2-Lots
Results: 0/160

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 2-Lots
Results: 0/160

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=131'C, P=18.8psi, RH=85%, Duration: 96-Hrs, 2-Lots
Results: 0/160

ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16658A

Reliability Test Results: NTJS3157NT1G (20V 4A 60 mOhm Single N-Ch SC88 Package)

Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 2-Lots
Results: 0/160

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 2-Lots
Results: 0/160

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-55'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 2-Lots
Results: 0/160

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 2-Lots
Results: 0/160

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 2-Lots
Results: 0/160

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=131'C, P=18.8psi, RH=85%, Duration: 96-Hrs, 2-Lots
Results: 0/160

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 '1218' and newer indicating a Die change-over during the first week of May, 2012.

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List of affected General Parts:

NSTJD1155LT1G	NTJS3157NT1G	NTR4101PT1G
NTA4151PT1G	NTJS4151PT1G	NTR4101PT1H
NTA4153NT1G	NTK3134NT1G	NTR4170NT1G
NTE4151PT1G	NTK3134NT1H	NTRV4101PT1G
NTE4153NT1G	NTK3134NT5G	NTS2101PT1G
NTGD4167CT1G	NTK3134NT5H	NTS2101PT1H
NTGS3130NT1G	NTK3139PT1G	NTS4101PT1G
NTGS3136PT1G	NTK3139PT1H	NTUD3169CZT5G
NTGS4111PT1G	NTK3139PT5G	NTUD3170NZT5G
NTGS4141NT1G	NTK3139PT5H	NTZD3152PT1G
NTHD3100CT1G	NTK3142PT1H	NTZD3152PT1H
NTHD3101FT1G	NTLJD3115PT1G	NTZD3154NT1G
NTHD3102CT1G	NTLJD3119CTAG	NTZD3154NT1H
NTHD3133PFT1G	NTLJD3119CTBG	NTZD3154NT2G
NTHD4102PT1G	NTLJD4116NT1G	NTZD3154NT2H
NTHD4102PT1H	NTLJF3117PT1G	NTZD3154NT5G
NTHS4101PT1G	NTLJF4156NT1G	NTZD3154NT5H
NTHS4166NT1G	NTLJF4156NTAG	NTZD3155CT1G
NTJD1155LT1G	NTLJS2103PTBG	NTZD3155CT1H
NTJD4105CT1G	NTLJS3113PT1G	NTZD3155CT2G
NTJD4105CT1H	NTLJS3113PTAG	NTZD3155CT2H
NTJD4105CT2G	NTLJS4114NT1G	NTZD3155CT5G
NTJD4152PT1G	NTLUF4189NZTAG	NTZD3155CT5H
NTJD4152PT1H	NTMD4184PFR2G	NTZS3151PT1G
NTJD4158CT1G	NTMS4177PR2G	NTZS3151PT1H
NTJD4158CT2G	NTNUS3171PZT5G	NVNUS3171PZT5G
NTJD4158CT2H	NTR2101PT1G	NVTJD4105CT1G
NTJS3151PT1G	NTR2101PT1H	