ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16443

Generic Copy

22-Mar-2010

SUBJECT: ON Semiconductor Final Product/Process Change Notification #16443

TITLE: Copper Wire in the DFN Packages for MOSFET Products

PROPOSED FIRST SHIP DATE: 21-June-2010

AFFECTED CHANGE CATEGORY(S): ON Semiconductor Manufacturing Assembly

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 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 General Announcement #GA16200: Conversion of Gold wire to Copper wire in ON Semiconductor's Assembly Facilities

ON Semiconductor is notifying customers of its use with either Copper or Gold Wire for their DFN type (DFN, UDFN, WDFN, QDFN) Packaged Products. The DFN Products built with MOSFET Die and/or Schottky Die are represented by this Process Change Notice.

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

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FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16443

RELIABILITY DATA SUMMARY:

Reliability Test Results: **NTLGF3402PT1G**
Test: High Temperature Reverse Bias (HTRB) MOSFET Die
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Reverse Bias (HTRB) Schottky Die
Conditions: Ta=90'C, Vds= 80% BVr Rating, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Gate Bias (HTGB) MOSFET Die
Conditions: Ta=150'C, Vds= 100% Vgs Rating, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=175'C, , Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=150'C, , Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: Intermittent Operating Life (IOL-PC) MOSFET Die
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 1-Lot
Results: 0/84

Test: Intermittent Operating Life (IOL-PC) Schottky Die
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 1-Lot
Results: 0/84

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 1-Lot
Results: 0/84

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 1-Lot
Results: 0/84

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 1-Lot
Results: 0/84

Reliability Test Results: **NTLGD3502NT1G**
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vds= 100% Vgs Rating, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=175'C, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=150'C, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 1-Lot
Results: 0/84

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 1-Lot
Results: 0/84

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 1-Lot
Results: 0/84

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 1-Lot
Results: 0/84

Reliability Test Results: **NTLGD3502NT1G**
Test: High Temperature Storage Life (HTSL)
Conditions: Ta=175'C, Duration: 504-Hrs, 3-Lots
Results: 0/252

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=150'C, Duration: 504-Hrs, 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

Reliability Test Results: **NTLTD7900ZR2G**
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vds= 100% Vgs Rating, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=175'C, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=150'C, Duration: 1008-Hrs, 1-Lot
Results: 0/84

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 1-Lot
Results: 0/84

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16443

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, 1-Lot
Results: 0/84

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 1-Lot
Results: 0/84

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 1-Lot
Results: 0/84

Reliability Test Results: **NTLJD3182FZTAG**
Test: High Temperature Reverse Bias (HTRB) MOSFET Die
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration: 1008-Hrs, 3-Lots
Results: 0/252

Test: High Temperature Reverse Bias (HTRB) Schottky Die
Conditions: Ta=90'C, Vds= 80% BVr Rating, Duration: 1008-Hrs, 3-Lots
Results: 0/252

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vds= 100% Vgs Rating, Duration: 1008-Hrs, 3-Lots
Results: 0/252

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=175'C, , Duration: 1008-Hrs, 3-Lots
Results: 0/252

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=150'C, , Duration: 1008-Hrs, 3-Lots
Results: 0/252

Test: Intermittent Operating Life (IOL-PC) MOSFET Die
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 3-Lots
Results: 0/252

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 1000-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: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 3-Lots
Results: 0/252

Reliability Test Results: **NTLJS3180PZTAG**
Test: Temperature Cycling (TC-PC)
Conditions: Ta=-65'C/150'C, Air-to-Air, Dwell >=10-min, 1000-cy, A-Lot
Results: 0/84

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FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16443

Reliability Test Results: **NTLJD3182FZTAG**
Test: High Temperature Storage Life (HTSL)
Conditions: Ta=175'C, Duration: 504-Hrs, 3-Lots
Results: 0/252

Test: High Temperature Storage Life (HTSL)
Conditions: Ta=150'C, Duration: 504-Hrs, 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

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 with products assembled with Copper Wire in place of Gold Wire. Products (listed on this FPCN) assembled with either the Copper or Gold Wire from the ON Semiconductor facility in Seremban, Malaysia, will have a Finish Good Date Code representing Work Week 24, 2010 or newer.

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FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16443

List of affected General Parts:

NTLGD3502NT1G
NTLGD3502NT2G
NTLGF3402PT1G
NTLGF3402PT2G
NTLGF3501NT2G
NTLGF3501NT1G
NTLJD2104PTAG
NTLJD2104PTBG
NTLJD2105LTBG
NTLJD3115PT1G
NTLJD3115PTAG
NTLJD3119CTAG
NTLJD3119CTBG
NTLJD3181PZTAG
NTLJD3181PZTBG
NTLJD3182FZTAG
NTLJD3182FZTBG
NTLJD3183CZTAG
NTLJD3183CZTBG
NTLJD4116NT1G
NTLJD4150PTBG
NTLJF3117PT1G
NTLJF3117PTAG
NTLJF3118NTAG
NTLJF3118NTBG
NTLJF4156NT1G
NTLJF4156NTAG
NTLJS1102PTAG
NTLJS1102PTBG
NTLJS2103PTAG
NTLJS2103PTBG
NTLJS3113PT1G
NTLJS3113PTAG
NTLJS3180PZTAG
NTLJS3180PZTBG
NTLJS4114NT1G
NTLJS4149PTAG
NTLJS4149PTBG
NTLJS4150NT1G
NTLTD7900ZR2G
NTLTS3107PR2G
NTLUD3191PZTAG
NTLUD3191PZTBG
NTLUF4189NZTAG
NTLUF4189NZTBG
NTLUS3192PZTAG
NTLUS3192PZTBG
NTLUS4195PZTAG
NTLUS4195PZTAG
STLJD3115PT1G
STLJD3115PTAG