ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16686

Generic Copy

Issue Date: 25-Jul-2011

TITLE: Polyimide Passivation on PowerMOS Devices

PROPOSED FIRST SHIP DATE: 25-Oct-2011

AFFECTED CHANGE CATEGORY(S): Power MOSFET Business Unit: Wafer Fabrication

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 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:

This Final Process Change Notification (FPCN) is being issued for Power MOSFET products.

ON Semiconductor is presenting this notification for their customers to announce a wafer process change on their Trench3 silicon platform. For SO8 Flat Lead and Micro8 Flat Lead products, there will be a change with the Trench3 Die passivation scheme from a Teos-Silicon Nitride to a Polyimide.

There will be no Electrical, Switching, and Dynamic performance difference. All Qualification and Reliability testing has been completed, and has passed all the required criteria.

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RELIABILITY DATA SUMMARY:

NTMFS4933NT1G:
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/240

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/240

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-55'C/150'C, Air-to-Air, Dwell >=10-min, Duration: 600-cy, 3-Lots
Results: 0/240

Test: Intermittent Operating Life (IOL-PC)
Conditions: Ta=25'C, delta Tj=100'C, 2-min on/off, 15K- cy, 3-Lots
Results: 0/240

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 3-Lots
Results: 0/240

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 3-Lots
Results: 0/240

NTMFS4934NT1G:
Test: High Temperature Reverse Bias (HTRB)
Conditions: Ta=150'C, Vds= 80% BVdss Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/240

Test: High Temperature Gate Bias (HTGB)
Conditions: Ta=150'C, Vgs= 100% Vgs Rating, Duration : 1008-Hrs, 3-Lots
Results: 0/240

Test: Temperature Cycling (TC-PC)
Conditions: Ta=-55'C/150'C, Air-to-Air, Dwell >=10-min, Duration: 1000-cy, 3-Lots
Results: 0/240

Test: Highly Accelerated Stress Test (HAST)
Conditions: Ta=130'C, RH=85%, Duration: 96-Hrs, 3-Lots
Results: 0/240

Test: Autoclave Test (AC-PC)
Conditions: Ta=121'C, P=15psi, RH=100%, Duration: 96-Hrs, 3-Lots
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ELECTRICAL CHARACTERISTIC SUMMARY:
No changes in electrical parameter distributions. This change will not result in any change to data sheet limits nor device performance. Characterization data is available upon request.

CHANGED PART IDENTIFICATION:
There will be no physical change to the Devices assembled with Die having the polyimide passivation. Parts assembled with these Die can be identified by assembly lot Date Codes. Product, assembled with the Die having polyimide passivation, will have a Finish Good Date Code of 1143 and newer.

List of affected General Parts:

NTMFS4925NT1G	NTTFS4941NTWG
NTTFS4928NTAG	NTMFS4939NT1G
NTMFS4925NT3G	NTTFS4943NTAG
NTTFS4928NTWG	NTMFS4939NT3G
NTMFS4926NT1G	NTTFS4943NTWG
NTTFS4929NTAG	NTMFS4941NT1G
NTMFS4926NT3G	NTTFS4945NTAG
NTTFS4929NTWG	NTMFS4941NT3G
NTMFS4927NT1G	NTTFS4945NTWG
NTTFS4930NTAG	NTMFS4943NT1G
NTMFS4927NT3G	NTTFS4947NTAG
NTTFS4930NTWG	NTMFS4943NT3G
NTMFS4935NBT1G	NTTFS4947NTWG
NTTFS4932NTAG	NTMFS4945NT1G
NTMFS4935NBT3G	NTTFSC4937NTAG
NTTFS4932NTWG	NTMFS4945NT3G
NTMFS4935NT1G	NC4901NT1G
NTTFS4937NTAG	NTMFS4955NT1G
NTMFS4935NT3G	NC4901NT3G
NTTFS4937NTWG	NTMFS4955NT3G
NTMFS4936NT1G	NTMFS4922NET1G
NTTFS4939NTAG	NTMFS4922NET3G
NTMFS4936NT3G	NTMFS4923NET1G
NTTFS4939NTWG	NTMFS4923NET3G
NTMFS4937NT1G	NTMFS4925NET1G
NTTFS4941NTAG	NTMFS4925NET3G
NTMFS4937NT3G	NTMFS4926NET1G
	NTMFS4926NET3G