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**INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #20346**Generic Copy

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**Issue Date:** 21-Dec-2013

**TITLE:** Installation of back grind production line in OSPI Carmona for products that get wafer probe and assembly operations in OSPI Carmona

**PROPOSED FIRST SHIP DATE:** 01-Jul-2014

**AFFECTED CHANGE CATEGORY(S):** Installation back grind capacity in OSPI

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local ON Semiconductor Sales Office or <boris.bastien@onsemi.com>

**NOTIFICATION TYPE:**

Initial Product/Process Change Notification (IPCN)

First change notification sent to customers. IPCNs are issued at least 120 days prior to implementation of the change. An IPCN is advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan.

The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN).

This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 90 days prior to implementation of the change.

**DESCRIPTION AND PURPOSE:**

Products that currently get wafer probing and assembly in OSPI Carmona are shipped to a subcontractor for back grinding in between probing and assembly.

By installing the back grind capacity in OSPI we will reduce the cycle time, create extra capacity for back grinding and improve the quality by eliminating the non-added value shipping steps.



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### QUALIFICATION PLAN:

There will be a standard full package qualification on 2 products (min and max die size) to compare the reliability of the current and new back grind machine/location.

| ACCELERATED ENVIRONMENT STRESS TESTS |                                          |                           |                                                       |                                           |                     |                 |                |                                    |                 |                                      |
|--------------------------------------|------------------------------------------|---------------------------|-------------------------------------------------------|-------------------------------------------|---------------------|-----------------|----------------|------------------------------------|-----------------|--------------------------------------|
| Test #                               | Test                                     | Reference                 | Test Conditions                                       | Electrical Test Requirements              | Sample Size per lot | Accept Criteria | # of Qual Lots | Total Parts Required for Qual Lots | # of Cntrl Lots | Total Parts Required for Control Lot |
| A1                                   | Moisture Preconditioning (PC)            | J-STD-020 & JESD22-A113   | Moisture Soak (MSL = 3)<br>Solder Reflow (3x @ 260°C) | Test @ room                               | 231                 | 0               | 3              | 693                                | 1               | 154                                  |
| A0                                   | Delamination check (SAT)                 | J-STD-020                 | Acoustic Microscopy                                   | N.A.                                      | ALL                 | 0               | 3              | ALL                                | 1               | ALL                                  |
| A3 (alt)                             | HAST Unbiased (UHST)                     | JESD22-A110               | 130°C/ 85%RH for 96 hrs                               | Test @ room                               | 77                  | 0               | 3              | 231                                | 1               | 77                                   |
| A4                                   | Preconditioning Temperature Cycling (TC) | JESD22-A104               | -55°C to 125°C for 100 cycles                         | Test @ hot                                | 77                  | 0               | 3              | 231                                | 1               | 77                                   |
| A4                                   | Temperature Cycling (TC)                 | JESD22-A104               | -65°C to 150°C for 500 cycles                         | Test @ hot                                | 77                  | 0               | 3              | 231                                | 1               | 77                                   |
| A2                                   | HAST Biased (HST)                        | JESD22- A110              | 130°C to 85°C for 96 hrs                              | Test @ room                               | 77                  | 0               | 3              | 231                                | 1               | 77                                   |
| B1                                   | High Temperature Operating Life (HTOL)   | JESD22-A108               | 150°C for 1000 hrs                                    | Test @ room,<br>Test @ hot,<br>Test@ cold | 77                  | 0               | 3              | 231                                | 1               | 77                                   |
| PACKAGE ASSEMBLY INTEGRITY TESTS     |                                          |                           |                                                       |                                           |                     |                 |                |                                    |                 |                                      |
| Test #                               | Test                                     | Reference                 | Test Conditions                                       | Electrical Test Requirements              | Sample Size per lot | Accept Criteria | # of Qual Lots | Total Parts Required for Qual Lots | # of Cntrl Lots | Total Parts Required for Control Lot |
|                                      | Internal Visual                          | Mil-Std-883D method 2010. |                                                       | N.A.                                      | 10                  |                 | 3              | 30                                 | 1               | 10                                   |

During the process qualification the following will be checked

| Input Variable                                                                                                                                       | Output Variables                             | Accept Criteria                                      | Materials And Sample Size                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Z1 Spindle (RPM)</li> <li>Z2 Spindle (RPM)</li> <li>Feed Speed</li> <li>Incoming Facilities supply</li> </ul> | Broken Wafer                                 | 0 broken wafer                                       | <ul style="list-style-type: none"> <li>6in Wafers from FAB 2 (3 each per device)</li> <li>8in Wafers from FAB 10 (25 wafers)</li> <li>Wafer with Polyimide (25 wafers)</li> <li>Z1 Wheel (40/60) min of 1 wheel</li> <li>Z2 Wheel (6000 grit) min of 1 wheel</li> </ul> |
|                                                                                                                                                      | Chipped edge wafer                           | 0 chipped edge                                       |                                                                                                                                                                                                                                                                         |
|                                                                                                                                                      | Scratch                                      | 0 scratch                                            |                                                                                                                                                                                                                                                                         |
|                                                                                                                                                      | Roughness measurement                        | 0.30um Max                                           | 30 readings for accuracy; min of 50 readings for Precision<br><br>30 readings for accuracy; min of 50 readings for Precision                                                                                                                                            |
|                                                                                                                                                      | Wafer Thickness accuracy and precision (GRR) | Thickness +/- 12um<br>SL (CPK >1.67)<br>(% GRR <10%) |                                                                                                                                                                                                                                                                         |
|                                                                                                                                                      | Wafer TTV accuracy and precision (GRR)       | 10um Max (CPK >1.67)<br>(% GRR <10%)                 |                                                                                                                                                                                                                                                                         |


**INITIAL PRODUCT/PROCESS CHANGE NOTIFICATION #20346**
**List of affected General Parts:**

| SpecDb devices (output) | OPN              |
|-------------------------|------------------|
| 0C383-003               | NCV78663DQ0G     |
| 0C383-003               | NCV78663DQ0R2G   |
| 0C501-002               | NCV70501DW002G   |
| 0C501-002               | NCV70501DW002R2G |
| 0C521-009               | SCV70521DQ005R2G |
| 0C521-009               | SCV70521DQ005G   |
| 0C522-007               | NCV70522DQ004R2G |
| 0C522-007               | NCV70522DQ004G   |
| 0C615-003               | NCV7420D23R2G    |
| 0C615-003               | NCV7420D23G      |
| 0C616-003               | NCV7420D25R2G    |
| 0C616-003               | NCV7420D25G      |
| 0C618-001               | NCV7425DW0R2G    |
| 0C618-001               | NCV7425DW0G      |
| 0C619-001               | NCV7425DW5R2G    |
| 0C619-001               | NCV7425DW5G      |
| 0C621-003               | AMIS30621C6213RG |
| 0C621-003               | AMIS30621C6213G  |
| 0C621-007               | AMIS30621C6217G  |
| 0C621-007               | AMIS30621C6217RG |
| 0C622-003               | AMIS30622C6223RG |
| 0C622-003               | AMIS30622C6223G  |
| 0C623-010               | AMIS30623C6238G  |
| 0C623-010               | AMIS30623C6238RG |
| 0C624-010               | NCV70624DW010R2G |
| 0C624-010               | NCV70624DW010G   |
| 0C627-001               | NCV70627DQ001G   |
| 0C627-001               | NCV70627DQ001R2G |
| 0CAND-001               | NCV7441D20G      |
| 0CAND-001               | NCV7441D20R2G    |
| 0CANH-002               | AMIS30660CANH2RG |
| 0CANH-002               | AMIS30660CANH2G  |
| 0CANI-001               | NCV7340D12G      |
| 0CANI-001               | NCV7340D12R2G    |
| 0CANI-002               | NCV7340D14R2G    |
| 0CANI-002               | NCV7340D14G      |
| 0CANI-003               | NCV7340D13R2G    |
| 0CANI-003               | NCV7340D13G      |
| 0CANM-001               | AMIS41682CANM1RG |
| 0CANM-001               | AMIS41682CANM1G  |
| 0CANN-001               | AMIS41683CANN1G  |
| 0CANN-001               | AMIS41683CANN1RG |
| 0CANV-001               | NCV7342D10R2G    |
| 0HINT-013               | NCP1092DRG       |
| 0HINT-013               | NCP1092DG        |
| 0ICAG-001               | AMIS42673ICAG1RG |
| 0ICAG-001               | AMIS42673ICAG1G  |
| 0ICAH-001               | AMIS42670ICAH2G  |
| 0ICAH-001               | AMIS42670ICAH2RG |


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| SpecDb devices (output) | OPN              |
|-------------------------|------------------|
| 0LINI-001               | AMIS30600LINI1G  |
| 0LINI-001               | AMIS30600LINI1RG |
| 0LINJ-001               | NCV7321D10R2G    |
| 0LINJ-001               | NCV7321D10G      |
| 0LINJ-003               | NCV7321D11G      |
| 0LINJ-003               | NCV7321D11R2G    |
| 0LINQ-001               | NCV7424DB0R2G    |
| 0N430-002               | NCV7430D20R2G    |
| 0RAYB-001               | NCV7383DB0R2G    |
| 0SBCB-001               | NCV7462DQ0G      |
| 0SBCB-001               | NCV7462DQ0R2G    |
| 0SBCC-001               | NCV7471DQ5G      |
| 0SBCC-001               | NCV7471DQ5R2G    |
| 0TJAA-006               | AMIS42665TJAA6RG |
| 0TJAA-006               | AMIS42665TJAA6G  |
| 11486-912               | FS6377-01G-XTP   |
| 11486-912               | FS6377-01G-XTD   |
| 11486-913               | FS6377-01IG-XTD  |
| 11486-913               | FS6377-01IG-XTP  |
| 11640-892               | FS6128-04G-XTD   |
| 11640-892               | FS6128-04G-XTP   |
| 13715-805               | FS7140-02G-XTP   |
| 13715-805               | FS7140-02G-XTD   |
| 13715-806               | FS7140-01G-XTP   |
| 13715-806               | FS7140-01G-XTD   |
| 20800-006               | NCS36000DRG      |
| 20800-006               | NCS36000DG       |
| 20806-002               | NCS37000DBRG     |
| 20806-002               | NCS37000DBG      |
| 20806-004               | NCS37012DBRG     |
| 20806-004               | NCS37012DBG      |
| 21422-002               | NCS37010DBG      |
| 21422-002               | NCS37010DBRG     |
| 21453-001               | NCN5150DR2G      |
| 21453-001               | NCN5150DG        |
| 21453-004               | SCY4001DG        |
| 21453-004               | SCY4001DR2G      |


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**List of affected Customer Specific Parts:**

| SpecDb devices (output) | OPN              |
|-------------------------|------------------|
| 0APSB-003               | 0APSB-003-XTP    |
| 0C383-004               | SCV78663DQ1R2G   |
| 0C615-004               | NCV7420D24R2G    |
| 0C615-004               | NCV7420D24G      |
| 0C615-006               | NCV7420D24R2G    |
| 0C615-006               | NCV7420D24G      |
| 0C616-004               | NCV7420D26R2G    |
| 0C616-004               | NCV7420D26G      |
| 0C616-005               | NCV7420D26R2G    |
| 0C616-005               | NCV7420D26G      |
| 0C622-005               | 0C622-005-XTP    |
| 0C622-005               | 0C622-005-XTD    |
| 0C624-008               | 0C624-006-XTD    |
| 0C624-008               | 0C624-006-XTP    |
| 0C730-002               | SCV70730DW002R2G |
| 0CTSA-006               | 0CTSA-005-XTP    |
| 0CTSA-006               | 0CTSA-005-XTD    |
| 0DDRB-001               | 0DDRB-001-XTP    |
| 0HALC-002               | 0HALC-001-XTP    |
| 0HINT-011               | NCP1090DRG       |
| 0HINT-011               | NCP1090DG        |
| 0HINT-012               | NCP1091DRG       |
| 0HINT-012               | NCP1091DG        |
| 0HISB-007               | 0HISB-005-XTP    |
| 0HISD-013               | 0HISD-009-XTP    |
| 0HISH-004               | 0HISH-002-XTP    |
| 0HISH-005               | 0HISH-003-XTP    |
| 0HIST-003               | 0HIST-003-XTP    |
| 0ICAB-001               | AMIS42671ICAB1G  |
| 0ICAB-001               | AMIS42671ICAB1RG |
| 0ICAW-001               | AMIS42770ICAW1G  |
| 0ICAW-001               | AMIS42770ICAW1RG |
| 0INDA-011               | 0INDA-007-XTP    |
| 0JACB-002               | 0JACB-002-XTP    |
| 0LSHA-003               | 0LSHA-003-XTP    |
| 0MSUA-002               | 0MSUA-001-XTD    |
| 0MSUA-002               | 0MSUA-001-XTP    |
| 0NCDA-001               | 0NCDA-001-XTP    |
| 0OLDA-001               | 0OLDA-001-XTP    |
| 0PNPB-001               | 0PNPB-001-XTP    |
| 0REMQ-004               | 0REMQ-004-XTP    |
| 0REMX-004               | 0REMX-004-XTP    |
| 0RLSA-006               | 0RLSA-004-XTP    |
| 0SOFA-005               | 0SOFA-004-XTP    |
| 0TJAA-002               | AMIS42665TJAA1G  |
| 0TJAA-002               | AMIS42665TJAA1RG |
| 0TOGB-005               | 0TOGB-002-XTP    |
| 0TPSB-017               | 0TPSB-013-XTP    |
| 0UPAC-001               | 0UPAC-001-XTP    |
| 0UPAC-002               | 0UPAC-001-XTP    |


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| SpecDb devices (output) | OPN           |
|-------------------------|---------------|
| 0W657-002               | 0W657-002-XTP |
| 0W657-002               | 0W657-002-XTD |
| 0WABA-002               | 0WABA-002-XTP |
| 0WCGA-006               | 0WCGA-006-XTP |
| 0WCLA-009               | 0WCLA-004-XTD |
| 0WCLA-009               | 0WCLA-004-XTP |
| 0WFCA-004               | 0WFCA-004-XTP |
| 0WLSA-004               | 0WLSA-003-XTP |
| 0WOCA-003               | 0WOCA-003-XTP |
| 11153-007               | 11153-007-XTP |
| 11480-803               | 11480-803-XTP |
| 11614-003               | 11614-003-XTP |
| 11961-002               | 11961-002-XTP |
| 12069-002               | 12069-002-XTP |
| 13665-502               | 13665-502-XTP |
| 14093-003               | 14093-003-XTP |
| 15004-519               | 15004-519-XTP |
| 15004-519               | 15004-519-XTD |
| 15004-520               | 15004-520-XTP |
| 15004-520               | 15004-520-XTD |
| 15004-521               | 15004-521-XTP |
| 15004-521               | 15004-521-XTD |
| 15074-001               | 15074-001-XTD |
| 15074-001               | 15074-001-XTP |
| 19299-001               | 19299-001-XTD |
| 19299-001               | 19299-001-XTP |
| 19495-003               | 19495-003-XTP |
| 19741-001               | 19741-001-XTD |
| 19741-001               | 19741-001-XTP |
| 19741-003               | 19741-003-XTP |
| 19770-002               | 19770-001-XTP |
| 20429-002               | 20429-002-XTP |
| 20429-002               | 20429-002-XTD |
| 20470-001               | 20470-001-XTD |
| 20470-001               | 20470-001-XTP |
| 20487-002               | 20487-002-XTP |
| 20487-002               | 20487-002-XTD |
| 20553-001               | 20553-001-XTP |
| 20553-001               | 20553-001-XTD |
| 20800-005               | 20800-005-XTD |
| 20800-005               | 20800-005-XTP |
| 20972-001               | 20972-001-XTP |
| 20972-001               | 20972-001-XTD |
| 30329-001               | 30329-001-XTD |
| 30329-001               | 30329-001-XTP |
| 30378-002               | 30378-002-XTP |
| 30378-002               | 30378-002-XTD |