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**FINAL PRODUCT/PROCESS CHANGE NOTIFICATION**

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**06-Feb-2009**

**SUBJECT: ON Semiconductor Final Product/Process Change Notification #16214**

**TITLE: Capacity Expansion Qualification of ON Semiconductor Gresham Wafer Fab for NCP4894FCT1G, NCP4894DMR2G, and NCP4894MNR2G.**

**PROPOSED FIRST SHIP DATE: 06-May-2009**

**AFFECTED CHANGE CATEGORY(S): ON Semi Fab Site / Subcontractor Fab Site**

**AFFECTED PRODUCT DIVISION(S): Computing and Consumer Group**

**FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local ON Semiconductor Sales Office or Todd Manes <[todd.manes@onsemi.com](mailto:todd.manes@onsemi.com)>

**SAMPLES:** Contact your local ON Semiconductor Sales Office or Todd Manes <[todd.manes@onsemi.com](mailto:todd.manes@onsemi.com)>

**ADDITIONAL RELIABILITY DATA:** Available

Contact your local ON Semiconductor Sales Office or Edmond Gallard <[edmond.gallard@onsemi.com](mailto:edmond.gallard@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 your local ON Semiconductor Sales Office.

**DESCRIPTION AND PURPOSE:**

ON Semiconductor is pleased to announce a capacity expansion qualification for the NCP4894 family of audio amplifier products, including NCP4894FCT1G, NCP4894DMR2G, and NCP4894MNR2G part numbers.

This device family is currently qualified at the XFAB wafer foundry facilities in Lubbock, Texas (USA) and Erfurt, Germany and is now also qualified at ON Semiconductor's Gresham wafer fabrication facility located in Gresham, Oregon (USA). Upon expiration (or approval) of this Final PCN, devices may be supplied by either wafer fabrication facility.

The Gresham wafer fab is compliant to ISO9001:2000, ISO/TS16949:2002, and ISO14001:2004.



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The NCP4894 product currently runs on XFAB's 0.6um BiCMOS process and is now also qualified to run at Gresham on the 0.25um "ONC25" process.

Device performance is the same for the XFAB and Gresham-sourced devices.

The NCP4894 devices will continue to be assembled and tested in existing, qualified locations. No changes to packaging will occur as a result of this foundry expansion qualification.

**RELIABILITY DATA SUMMARY:**

The Gresham-sourced NCP4894 has been qualified based on the following test results:

**Reliability Test Results:**

| <b>Test</b>  | <b>Conditions</b>   | <b>Results</b>                       |
|--|---|--------------------------------------|
| High Temp Op Life<br>(NCP2890AFCT2G)                   | Ta = 135C (1008 hours)  | 0/80 (x 3 lots)                      |
| High Temp Op Life<br>(NCP2990FCT2G)                    | Ta = 135C (168 hours)   | 0/80 (x 1 lot)                       |
| Early Life Failure Rate<br>(NCP2890AFCT2G)             | Ta = 135C (48 hours)  | 0/480 (x 3 lots)                     |
| Early Life Failure Rate<br>(NCP2990FCT2G)              | Ta = 135C (48 hours)  | 0/500 (x 1 lot)                      |
| High Temp Storage Life<br>(NCP2890AFCT2G)              | Ta = 150C (1008 hours)  | 0/80 (x 3 lots)                      |
| Temperature Cycle (for bump)<br>(NCP2890AFCT2G)        | Ta = -40C to +125C (500cyc)                                       | 0/80 (x 3 lots)                      |
| Unbiased HAST<br>(NCP2890AFCT2G)                       | Ta = 131C (96 hours)  | 0/80 (x 3 lots)                      |
| PC+SAT (for bump)<br>(NCP2890AFCT2G)                   | MSL1 @ 260C   | 0/5 (x 3 lots)                       |
| Bump Shear<br>PC+SAT (for Micro10)<br>(NCP2890DMR2G)   | Min spec = 213g<br>MSL1 @ 260C                                    | Pass – 2 lots (Cpk>2)<br>0/5 (1 lot) |
| PC+TC (for Micro8)<br>(NCP2890DMR2G)                   | MSL1 @ 260C<br>-65C/+150C Air-to-air (500 cycles)                 | 0/80 (1 lot)                         |
| PC+UFAST (for Micro10)<br>(NCP2890DMR2G)               | MSL 1 @ 260C<br>Ta=+130C, RH=85%;<br>PSIG=18.8, No bias, 96 hours | 0/80 (1 lot)                         |
| PC+HAST (for Micro10)<br>(NCP2890DMR2G)                | MSL1 @ 260C<br>Ta=+130C, RH=85%;<br>PSIG=18.8, bias, 96 hours     | 0/146 (2 lots)                       |
| Drop Test (for Micro10)<br>ESD (HBM)<br>(NCP4894DMR2G) | JESD-B111<br>2000V  | 0/15<br>Pass                         |
| ESD (MM)<br>(NCP4894DMR2G)                             | 200V  | Pass                                 |
| LU<br>(NCP4894MNR2G)                                   | Class II / 85C  | Pass                                 |
| Electrical Distribution<br>(NCP4894DMR2G)              | Critical Parameters<br>-40C / +25C / +85C                         | Pass (2 lots)                        |



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**ELECTRICAL CHARACTERISTIC SUMMARY:**

Electrical characterization test data has been obtained on 2 lots of Gresham NCP4894DMR2G. No significant changes in part performance as compared to the existing XFAB-sourced product were observed. Cpk's of all critical parameters are greater than 1.67 and are better than or equal to current performance of the current production devices. Data may be provided upon request.

**CHANGED PART IDENTIFICATION:**

Devices with date codes of 0904 or later may be sourced from either wafer fab.



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**AFFECTED DEVICE LIST**

NCP4894DMR2G  
NCP4894MNR2G  
NCP4894FCT1G