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|---|--|---|
| <b>Title of Change:</b>   | Qualification of AFSM (Aizu Fujitsu Semiconductor Manufacturing) as an additional Wafer Fab facility for ONC25 Technology  |   |
| <b>Proposed first ship date:</b>  | 30 November 2018 or earlier upon customer approval   |   |
| <b>Contact information:</b>   | Contact your local ON Semiconductor Sales Office or <Shannon.Riggs@onsemi.com>   |   |
| <b>Samples:</b>   | Contact your local ON Semiconductor Sales Office or <PCN.Samples@onsemi.com>   |   |
| <b>Additional Reliability Data:</b>   | Contact your local ON Semiconductor Sales Office or <Vladislav.Hrachovec@onsemi.com>   |   |
| <b>Type of notification:</b>  | <p>This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change.</p> <p>ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact &lt;<a href="mailto:PCN.Support@onsemi.com">PCN.Support@onsemi.com</a>&gt;</p>                              |   |
| <b>Change Part Identification:</b>  | Shipments made after work week 44, 2018 may contain die sourced from either AFSM Fab or ON Semiconductor fab in Gresham, Oregon. The product date code will indicate the work week of manufacturing and the product labels will contain the wafer source indicator.  |   |
| <b>Change Category:</b>   | <input checked="" type="checkbox"/> Wafer Fab Change <input type="checkbox"/> Assembly Change <input type="checkbox"/> Test Change <input type="checkbox"/> Other _____  |   |
| <b>Change Sub-Category(s):</b>  | <input checked="" type="checkbox"/> Manufacturing Site Addition <input type="checkbox"/> Material Change <input type="checkbox"/> Datasheet/Product Doc change<br><input type="checkbox"/> Manufacturing Site Transfer <input type="checkbox"/> Product specific change <input type="checkbox"/> Shipping/Packaging/Marking<br><input type="checkbox"/> Manufacturing Process Change <input type="checkbox"/> Other: _____ |   |
| <b>Sites Affected:</b>  | ON Semiconductor Sites:<br>None  | External Foundry/Subcon Sites:<br>AFSM (Aizu Fujitsu Semiconductor Manufacturing)<br>Wafer Fab, Aizuwakatmatsu, Japan |
| <b>Description and Purpose:</b>   |  |   |
| <p>The AFSM (Aizu Fujitsu Semiconductor Manufacturing) Wafer Fab located in Aizuwakamatsu, Japan has been qualified to process the ONC25 CMOS process.</p> <p>The exact same process technology has been transferred as is currently running in the ON Semiconductor wafer fab located at Gresham, Oregon, USA. Tool sets are different but the exact same masking layers and steps are being used in the AFSM Fab.</p> <p>This is a capacity expansion to supplement the existing ON Semiconductor wafer fab capacity. The parts being qualified are dual sourced and may be fabricated in either wafer fab in the future depending on capacity requirements. There are no changes to the final manufacturing assembly or test locations as a result of this change. All previously qualified assembly and test locations remain in the supply chain.</p> <p>Additional part families will be announced on future PCNs once qualifications of those parts are completed.</p> <p>This PCN will apply to future Regulator output voltage versions of the part families listed below.</p> |  |   |



Reliability Data Summary:

**QV DEVICE NAME**  
NCP170A/BXVxxxT2G

| Test  | Specification           | Condition                          | Interval  | Results           |
|-------|-------------------------|------------------------------------|-----------|-------------------|
| HTOL  | JESD22-A108             | Ta=125°C, 100 % max rated $V_{CC}$ | 1008 hrs  | 0/160             |
| ELFR  | JA108                   | Ta=125°C, 100 % max rated $V_{CC}$ | 48 hrs    | 0/2400            |
| HTSL  | JA103                   | Ta=150°C                           | 1008 hrs  | 0/240             |
| TC    | JESD22-A104             | Ta= -65°C to +150°C                | 500 $cyc$ | 0/270             |
| HAST  | JESD22-A110             | 130°C, 85% RH, 18.8psig, bias      | 264 hrs   | 0/270             |
| UHAST | JESD22-A118             | 130°C, 85% RH, 18.8psig, unbiased  | 96 hrs    | 0/240             |
| PC    | J-STD-020 JESD-A113     | MSL 1 @ 260 °C                     |           | PASS              |
| RSH   | JESD22- B106            | Ta = 265C, 10 sec                  |           | 0/90              |
| ED    | Electrical Distribution | Critical parameters                |           | CPK>1.67,<br>Pass |
| BPS   | MILSTD883 Method 2011   | Cond C.                            |           | CPK>1.67,<br>Pass |
| SAT   | J-STD-020 JESD-A113     |                                    |           | Pass              |
| ESD   | CDM JS002               |                                    | 1kV       | Pass              |
| ESD   | HBM JS001               |                                    | 2kV       | Pass              |
| LU    | JESD78                  | Class II                           | +/-100ma  | Pass              |

**QV DEVICE NAME**  
NCP160/1BFCSxxxT2G,  
NCP160/1BFCTxxxT2G,  
NCP160/1A/BMXxxxTBG

| Test  | Specification           | Condition                          | Interval   | Results           |
|-------|-------------------------|------------------------------------|------------|-------------------|
| HTOL  | JESD22-A108             | Ta=125°C, 100 % max rated $V_{CC}$ | 1008 hrs   | 0/336             |
| HTSL  | JA103                   | Ta=150°C                           | 1008 hrs   | 0/251             |
| TC    | JESD22-A104             | Ta= -40°C to +150°C                | 1000 $cyc$ | 0/334             |
| HAST  | JESD22-A110             | 130°C, 85% RH, 18.8psig, bias      | 96 hrs     | 0/336             |
| UHAST | JESD22-A118             | 130°C, 85% RH, 18.8psig, unbiased  | 96 hrs     | 0/336             |
| PC    | J-STD-020 JESD-A113     | MSL 1 @ 260 °C                     |            | Pass              |
| ED    | Electrical Distribution | Critical parameters                |            | CPK>1.67,<br>Pass |
| ESD   | HBM JS001               |                                    | 2kV        | Pass              |
| LU    | JESD78                  |                                    | +/-100mA   | Pass              |

**QV DEVICE NAME**  
NCP59748MN1ADJTBG  
NCP59749MN2ADJTBG

| Test | Specification           | Condition                            | Interval | Results    |
|------|-------------------------|--------------------------------------|----------|------------|
| HTOL | JESD22-A108             | Ta = 125°C, 100 % max rated $V_{CC}$ | 1008h    | 0/239      |
| ED   | Electrical Distribution | Critical Parameters                  |          | Cpk ≥ 1.67 |
| ESD  | HBM JS001               |                                      | 2kV      | Pass       |
| ESD  | CDM JS002               |                                      | 1kV      | Pass       |
| LU   | JESD78                  |                                      | +/-100mA | Pass       |

**Electrical Characteristic Summary:**

There are no changes to any electrical parameters. All data sheet specifications remain the same.

**List of Affected Parts:**

| Part Number       | Qualification Vehicle                  |
|-------------------|--|
| NCP121AMX140TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX145TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX160TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX165TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX170TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX173TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX175TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX185TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP130AMX180TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP130AMX210TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP134AMX080TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP59744MN1ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59744MN2ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59748MN1ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59748MN2ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59749MN2ADJTBG | NCP59748MN1ADJTBG                      |

Japanese translation of the notification starts here.  
通知の日本語訳はここから始まります。

*Note: The Japanese version is for reference only. In case of any differences between the English and Japanese version, the English version shall control.*

注：日本語版は参照用です。英語版と日本語版の違いがある場合は、英語版が優先されます。





## 信頼性データの要約:

**QV DEVICE NAME**  
 NCP170A/BXVxxxT2G

| 試験    | 仕様                      | 条件  | 間隔       | 結果                |
|-------|-------------------------|---|----------|-------------------|
| HTOL  | JESD22-A108             | Ta=125°C, 100 % max rated V <sub>CC</sub> | 1008 hrs | 0/160             |
| ELFR  | JA108                   | Ta=125°C, 100 % max rated V <sub>CC</sub> | 48 hrs   | 0/2400            |
| HTSL  | JA103                   | Ta=150°C                                  | 1008 hrs | 0/240             |
| TC    | JESD22-A104             | Ta= -65°C to +150°C                       | 500 cyc  | 0/270             |
| HAST  | JESD22-A110             | 130°C, 85% RH, 18.8psig, bias             | 264 hrs  | 0/270             |
| UHAST | JESD22-A118             | 130°C, 85% RH, 18.8psig, unbiased         | 96 hrs   | 0/240             |
| PC    | J-STD-020 JESD-A113     | MSL 1 @ 260 °C                            |          | PASS              |
| RSH   | JESD22- B106            | Ta = 265C, 10 sec                         |          | 0/90              |
| ED    | Electrical Distribution | Critical parameters                       |          | CPK>1.67,<br>Pass |
| BPS   | MILSTD883 Method 2011   | Cond C.                                   |          | CPK>1.67,<br>Pass |
| SAT   | J-STD-020 JESD-A113     |   |          | Pass              |
| ESD   | CDM JS002               |   | 1kV      | Pass              |
| ESD   | HBM JS001               |   | 2kV      | Pass              |
| LU    | JESD78                  | Class II                                  | +/-100ma | Pass              |

**QV DEVICE NAME**  
 NCP160/1BFCSxxxT2G,  
 NCP160/1BFCTxxxT2G,  
 NCP160/1A/BMXxxxTBG

| 試験    | 仕様                      | 条件  | 間隔       | 結果                |
|-------|-------------------------|---|----------|-------------------|
| HTOL  | JESD22-A108             | Ta=125°C, 100 % max rated V <sub>CC</sub> | 1008 hrs | 0/336             |
| HTSL  | JA103                   | Ta=150°C                                  | 1008 hrs | 0/251             |
| TC    | JESD22-A104             | Ta= -40°C to +150°C                       | 1000 cyc | 0/334             |
| HAST  | JESD22-A110             | 130°C, 85% RH, 18.8psig, bias             | 96 hrs   | 0/336             |
| UHAST | JESD22-A118             | 130°C, 85% RH, 18.8psig, unbiased         | 96 hrs   | 0/336             |
| PC    | J-STD-020 JESD-A113     | MSL 1 @ 260 °C                            |          | Pass              |
| ED    | Electrical Distribution | Critical parameters                       |          | CPK>1.67,<br>Pass |
| ESD   | HBM JS001               |   | 2kV      | Pass              |
| LU    | JESD78                  |   | +/-100mA | Pass              |

**QV 素子名**

 NCP59748MN1ADJTBG  
 NCP59749MN2ADJTBG

| 試験   | 仕様                      | 条件                               | 間隔       | 結果         |
|------|-------------------------|----------------------------------|----------|------------|
| HTOL | JESD22-A108             | Ta = 125° C, 100 % max rated Vcc | 1008h    | 0/239      |
| ED   | Electrical Distribution | Critical Parameters              |          | Cpk ≥ 1.67 |
| ESD  | HBM JS001               |                                  | 2kV      | Pass       |
| ESD  | CDM JS002               |                                  | 1kV      | Pass       |
| LU   | JESD78                  |                                  | +/-100mA | Pass       |



## 電気特性の要約:

電気パラメーターに対する変更はありません。すべてのデータシート仕様は同じままです。

## 影響を受ける部品の一覧:

| 部品番号              | 品質試験用ピークル                              |
|-------------------|--|
| NCP121AMX140TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX145TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX160TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX165TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX170TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX173TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX175TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP121AMX185TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP130AMX180TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP130AMX210TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP134AMX080TCG   | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTBG |
| NCP59744MN1ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59744MN2ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59748MN1ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59748MN2ADJTBG | NCP59748MN1ADJTBG                      |
| NCP59749MN2ADJTBG | NCP59748MN1ADJTBG                      |

**Appendix A: Changed Products**

| Product           | Customer Part Number | Qualification Vehicle                  |
|-------------------|----------------------|--|
| NCP121AMX140TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP121AMX145TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP121AMX160TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP121AMX165TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP121AMX170TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP121AMX173TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP121AMX175TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP121AMX185TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP130AMX180TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP130AMX210TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP134AMX080TCG   |                      | NCP170A/BXVXXXT2G. NCP160/1A/BMXXXXTGB |
| NCP59744MN1ADJTGB |                      | NCP59748MN1ADJTGB                      |
| NCP59744MN2ADJTGB |                      | NCP59748MN1ADJTGB                      |
| NCP59748MN1ADJTGB |                      | NCP59748MN1ADJTGB                      |
| NCP59748MN2ADJTGB |                      | NCP59748MN1ADJTGB                      |
| NCP59749MN2ADJTGB |                      | NCP59748MN1ADJTGB                      |