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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <b>Title of Change:</b>                                                                                                                                                                                                                                                                                                                                                                | Qualification of ON Semiconductor Mountain Top, USA facility as an additional wafer fab location for MV5 Technology.                                                                                                                                                                                                                                                         |                                                                      |
| <b>Proposed first ship date:</b>                                                                                                                                                                                                                                                                                                                                                       | 29 June 2018                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |
| <b>Contact information:</b>                                                                                                                                                                                                                                                                                                                                                            | Contact your local ON Semiconductor Sales Office or <yuna.im@onsemi.com>.                                                                                                                                                                                                                                                                                                    |                                                                      |
| <b>Samples:</b>                                                                                                                                                                                                                                                                                                                                                                        | Contact your local ON Semiconductor Sales Office                                                                                                                                                                                                                                                                                                                             |                                                                      |
| <b>Additional Reliability Data:</b>                                                                                                                                                                                                                                                                                                                                                    | Contact your local ON Semiconductor Sales Office or <youngchul.lee@onsemi.com>.                                                                                                                                                                                                                                                                                              |                                                                      |
| <b>Type of notification:</b>                                                                                                                                                                                                                                                                                                                                                           | This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change.<br>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 <PCN.Support@onsemi.com>.                                            |                                                                      |
| <b>Change Part Identification:</b>                                                                                                                                                                                                                                                                                                                                                     | Affected parts will be identified with a date code of WW07'18 or later                                                                                                                                                                                                                                                                                                       |                                                                      |
| <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 Change/Addition <input type="checkbox"/> Material Change <input type="checkbox"/> Datasheet/Product Doc change<br><input type="checkbox"/> Manufacturing Process Change <input type="checkbox"/> Product specific change <input type="checkbox"/> Shipping/Packaging/Marking<br><input type="checkbox"/> Other: _____ |                                                                      |
| <b>Sites Affected:</b>                                                                                                                                                                                                                                                                                                                                                                 | ON Semiconductor Sites:<br>ON Mountain Top, PA                                                                                                                                                                                                                                                                                                                               | External Foundry/Subcon Sites:<br>None                               |
| <b>Description and Purpose:</b><br><br>This is a Final Change Notification to inform customers of the qualification of ON Semiconductor Mountain Top, USA facility as an additional wafer fab location for MV5 Technology.<br><br>At the expiration of this notification, all products listed here will be dual sourced from its current ON Semiconductor wafer fab in Bucheon, Korea. |                                                                                                                                                                                                                                                                                                                                                                              |                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                        | <b>Before Change Description</b>                                                                                                                                                                                                                                                                                                                                             | <b>After Change Description</b>                                      |
| Fab site                                                                                                                                                                                                                                                                                                                                                                               | ON Semiconductor Bucheon, Korea                                                                                                                                                                                                                                                                                                                                              | ON Semiconductor Bucheon, Korea<br>ON Semiconductor Mountain Top, PA |



## Reliability Data Summary:

DEVICE NAME: FDB075N15A

PACKAGE: TO-263

| Test  | Specification                | Condition                                           | Interval    | Results |
|-------|------------------------------|-----------------------------------------------------|-------------|---------|
| PC    | JEDS22 A113                  | Performed prior to TC, UHAST, HAST and IOL.         |             | 0/924   |
| EV    | JEDS22 B101                  | Device construction, marking, and workmanship       |             | 0/All   |
| PV    | Device specification         | Tested to device specification requirements         |             | 0/45    |
| HTRB  | MILSTD750-1 method M1038A    | Tj= 175C, bias= 120V, 1000 hrs                      | 1000 hrs    | 0/231   |
| HTGB  | JESD22 A108                  | Ta= 175C, bias= 20V, 1000 hrs                       | 1000 hrs    | 0/231   |
| TC    | JESD22 A104; Q101 appendix 6 | T air= -65C to 150C, t dwell > 15 min, 500 cycles   | 500 cycles  | 0/231   |
| UHAST | JESD22 A118                  | Ta= 130C, RH= 85%, no bias, 96 hrs                  | 96 hrs      | 0/231   |
| HAST  | JESD22 A110                  | Ta= 130C, RH= 85%, bias= 42V, 96 hrs                | 96 hrs      | 0/231   |
| IOL   | MIL-STD-750 Method 1037      | Ta=25C, delta Tj=100C, ton=toff=3.5min, 8572 cycles | 8572 cycles | 0/231   |
| ESD   | AEC Q101-001/005             | Prefer CDM and HBM.                                 |             | 0/6     |
| DPA   | AEC Q101-004 Section 4       | Post H3TRB or HAST and TC                           |             | 0/39    |
| RSH   | JESD22 B106                  | Per AEC - Q101                                      |             | 0/30    |
| WBS   | MIL-STD-750 Method 2037      | Pre & post process change                           |             | 0/66    |
| BS    | AEC Q101-003                 |                                                     |             | 0/66    |
| DS    | MIL-STD-750 Method 2017      |                                                     |             | 0/66    |
| UIS   | AEC Q101-004 Section 2       |                                                     |             | 0/72    |

DEVICE NAME : FDC86244

PACKAGE: TSOT-23

| Test      | Specification                | Condition                                     | Interval     | Results     |
|-----------|------------------------------|-----------------------------------------------|--------------|-------------|
| PC        | JEDS22 A113                  | Performed prior to TC, UHAST, HAST and IOL.   |              | 0/327       |
| EV        | JEDS22 B101                  | Device construction, marking, and workmanship |              | 0/All       |
| PV        | Device specification         | Tested to device specification requirements   |              | 0/15        |
| HTRB      | MILSTD750-1 method M1038A    | Tj=150C, bias= 120V                           | 1008 hrs     | 0/80        |
| HTGB      | JESD22 A108                  | Ta=150C, bias=20V                             | 1008 hrs     | 0/80        |
| HTSL      | JESD22 A108                  | Ta=150C                                       | 1008 hrs     | 0/90        |
| TC        | JESD22 A104; Q101 appendix 6 | T air= -65C to 150C, t dwell > 15 min         | 1000 cycles  | 0/85        |
| UHAST     | JESD22 A118                  | Ta=130C, RH=85%, no bias                      | 96 hrs       | 0/82        |
| HAST      | JESD22 A110                  | Ta=130C, RH=85%, bias=42V                     | 96 hrs       | 0/80        |
| IOL       | MIL-STD-750 Method 1037      | Ta=25C, delta Tj=100C, ton=toff=2min          | 15000 cycles | 0/80        |
| ESD (HBM) | AEC Q101-001                 | HBM                                           |              | 0/3 (300V)  |
| ESD (CDM) | AEC-Q101-005                 | CDM                                           |              | 0/3 (2000V) |
| DPA       | AEC Q101-004 Section 4       | Post TC                                       |              | 0/2         |
| RSH       | JESD22 B106                  | Per AEC - Q101                                |              | 0/30        |
| WBS       | MIL-STD-750 Method 2037      | Pre & post process change                     |              | 0/30        |
| BS        | AEC Q101-003                 |                                               |              | 0/30        |
| UIS       | AEC Q101-004 Section 2       |                                               |              | 0/24        |

**Electrical Characteristic Summary:**

Electrical characteristics are not impacted.

**List of Affected Standard Parts:**

| Part Number     | Qualification Vehicle |
|-----------------|-----------------------|
| FDB082N15A      | FDB075N15A            |
| FDP083N15A-F102 | FDB075N15A            |
| FDPF770N15A     | FDB075N15A            |
| FDB110N15A      | FDB075N15A            |
| FDH055N15A      | FDB075N15A            |
| FDI045N10A-F102 | FDB075N15A            |
| FDP045N10A-F102 | FDB075N15A            |
| FDPF045N10A     | FDB075N15A            |
| FDP085N10A-F102 | FDB075N15A            |
| FDPF085N10A     | FDB075N15A            |
| FDC86244        | FDC86244              |
| FDMC86244       | FDC86244              |
| FDT86244        | FDC86244              |