



Final Product/Process Change Notification

Document #:FPCN24072Z

Issue Date:15 Feb 2023

| | | |
|---|--|---------------------------------|
| Title of Change: | Qualification of Automotive FS1 Trench IGBT Technology to additional wafer diameter (8") for Wafer FAB Capacity Expansion in onsemi Bucheon Korea. | |
| Proposed Changed Material First Ship Date: | 18 Sep 2023 or earlier if approved by customer | |
| Current Material Last Order Date: | N/A <i>Orders received after the Current Material Last Order Date expiration are to be considered as orders for new changed material as described in this PCN. Orders for current (unchanged) material after this date will be per mutual agreement and current material inventory availability.</i> | |
| Current Material Last Delivery Date: | N/A <i>The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory</i> | |
| Product Category: | Active components – Discrete components | |
| Contact information: | Contact your local onsemi Sales Office or Bokyun.Seo@onsemi.com | |
| PCN Samples Contact: | Contact your local onsemi Sales Office to place sample order. Sample requests are to be submitted no later than 45 days after publication of this change notification. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements. | |
| Sample Availability Date: | 18 Nov 2022 | |
| PPAP Availability Date: | 18 Nov 2022 | |
| Additional Reliability Data: | Contact your local onsemi Sales Office or Jayoung.Hong@onsemi.com | |
| Type of Notification: | This is a Final Product/Process Change Notification (FPCN) sent to customers. The change will be implemented at 'Proposed Change Material First Ship Date' in compliance to J-STD-46 or ZVEI, or earlier upon customer approval, or per our signed agreements. onsemi will consider this proposed change and it's conditions acceptable, unless an inquiry is made in writing within 45 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com . | |
| Change Category | | |
| Category | Type of Change | |
| Process - Wafer Production | Move of all or part of wafer fab to a different location/site/subcontractor, New wafer diameter | |
| Description and Purpose: | | |
| onsemi wishes to inform our customers of wafer diameter change for automotive FS1 TIGBT technology in onsemi (ONBK) located in Bucheon, Korea. This is the final product change notification (FPCN). All other aspects of the impacted products (form, fit, function) will remain unchanged. Upon expiration of this notification, all products listed here can be manufactured on 6" or 8. | | |
| | Before Change Description | After Change Description |
| Wafer Fab Site | 6inch in Bucheon, Korea | 6inch, 8inch in Bucheon, Korea |
| There is no product marking change as a result of this change. | | |

| | | | |
|---|---|--------------------------------------|--|
| Reason / Motivation for Change: | Capacity improvement | | |
| Anticipated impact on fit, form, function, reliability, product safety or manufacturability: | The device has been qualified and validated based on the same Product Specification. The device has successfully passed the qualification tests. Potential impacts can be identified, but due to testing performed by onsemi in relation to the PCN, associated risks are verified and excluded. No anticipated impacts. | | |
| Sites Affected: | | | |
| onsemi Sites | | External Foundry/Subcon Sites | |
| onsemi Bucheon, Korea | | None | |
| Marking of Parts/ Traceability of Change: | No change for Marking of Parts / Traceability | | |

Reliability Data Summary:

QV DEVICE NAME : FGH75T65UPD-F085

RMS: K70582

PACKAGE: TO-247

| Test | Specification | Condition | Interval | Result |
|----------------|--------------------------------|---|-----------|--------|
| HTRB | JESD22-A108 | Tj = Max rate Tj for device, BV bias = 80% of max rated (qualified with 80% BV) | 1,008 hrs | 0/240 |
| HTGB | JESD22-A108 | Ti = Maximum rated junction temperature for 1008 hrs, Vgss Bias = 100% of max rated | 1,008 hrs | 0/240 |
| HTSL | JESD22-A103 | Ta =Max rate storage temp for device for 1008 hrs | 1,008 hrs | 0/240 |
| HAST | JESD22-A110 | Temp = 130C, 85% RH, P= ~ 18.8 psig, BV bias = 100V (qualified with 100V BV) | 96 hrs | 0/240 |
| TC | JESD22-A104 | Ta= -55°C to +150°C | 1,000 cyc | 0/240 |
| uHAST | JESD22-A118 | Temp = 130C, RH=85%, ~ 18.8 psig | 96 hrs | 0/240 |
| IOL | MIL-STD-750(M1037) AEC-Q101 | Ta=+25°C, deltaTj=100°C max, Ton=Toff= 5 min (PKG dependent) | 6kcyc cyc | 0/240 |
| CDPA TCDT | AEC Q101, rev D, test 7A (alt) | Custom Destructive Physical Analysis - TC Delamination Test, Post 1000 cyc TC | | 0/66 |
| CDPA SAT | AEC-006 | Post HTRB,HTGB | | 0/132 |
| DPA | AEC-Q101-004 Section 4 | Destructive Physical Analysis (Post TC, H3TRB, HTRB, HTGB) | | 0/24 |
| CDPA WP BS | MIL 883E, AEC -006 | Custom Destructive Physical Analysis - Wire Pull, Ball Shear (Post TC, HTRB, HTGB) | | 0/54 |
| CDPA X Section | AEC -006 | Post TC, HTRB, HTGB | | 0/18 |

NOTE: AEC 1 Pager is attached.

To view attachments:

1. Download pdf copy of the PCN to your computer
2. Open the downloaded pdf copy of the PCN
3. Click on the paper clip icon available on the menu provided in the left/bottom portion of the screen to reveal the Attachment field
4. Then click on the attached file.

Electrical Characteristics Summary:

Electrical characteristics are not impacted.



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List of Affected Parts:

Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the **PCN Customized Portal**.

| Current Part Number | New Part Number | Qualification Vehicle |
|---------------------|-----------------|-----------------------|
| FGH75T65UPD-F085 | NA | FGH75T65UPD-F085 |

Appendix A: Changed Products

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DIKG: DIGI-KEY

| Product | Customer Part Number | Qualification Vehicle | New Part Number | Replacement Supplier |
|------------------|----------------------|-----------------------|-----------------|----------------------|
| FGH75T65UPD-F085 | | FGH75T65UPD-F085 | NA | |