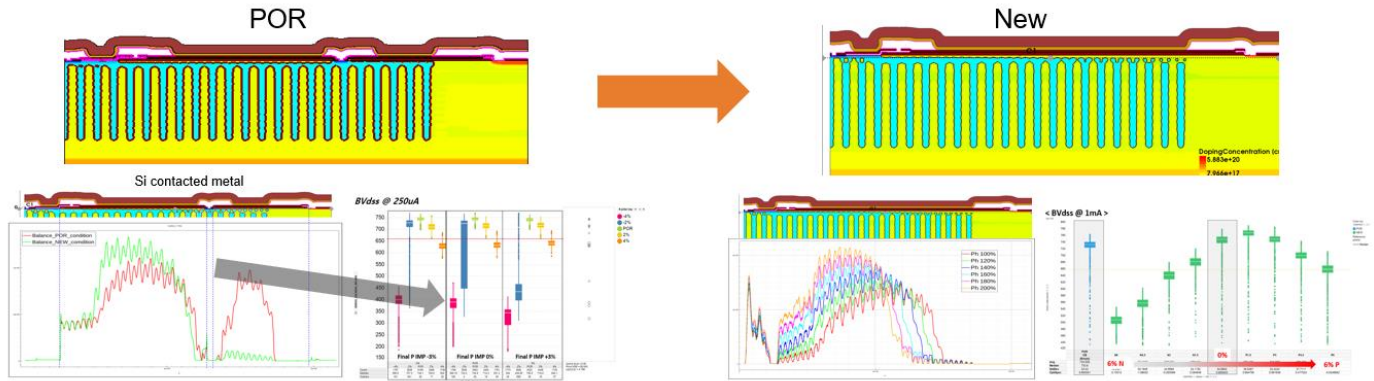


Title of Change:	Improve FAB process variation of SuperFET3 FRFET by optimizing Mask design.
Proposed Changed Material First Ship Date:	26 Oct 2023 or earlier if approved by customer
Current Material Last Order Date:	N/A <i>Orders received after the Current Material Last Order Date expiration are to 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 kyuwon.sim@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:	31 May 2023
PPAP Availability Date:	31 May 2023
Additional Reliability Data:	Contact your local onsemi Sales Office or songyong.sim@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
Design	Design Change in Active Elements

Description and Purpose:

In order to achieve SF3 FRFET BVdss charge balance improvement, onsemi optimized PIL cell pitch and removed Si CNT ring in order to make stable charge balance margin and higher BV typical value.
Please refer below illustration.

1. Ring design change: Si contact removed (No Si CNT ring)
2. MOCVD applied
3. Pillar Cell Size Reducing from 0.06 to 0.02 (PIL2 0.02 step)



	POR	NEW
1. Pillar2 circular step	0.06step POR (0.06um) : Ring diameter decreases 0.06um per 2 circular rings. 2.54um, 2.60um, 2.66um, 1.9um	0.02step NEW (0.02um) : Ring diameter decreases 0.02um per 2 circular rings. 2.18um, 2.20um, 2.22um, 1.9um
2. Ring design	Si Contacted	No Si Contacted
3. Barrier metal	Ti 200A + TiN 1600A	IMP Ti 300A / MOCVD 200A + PVD TiN 1200A

Reason / Motivation for Change:

Quality 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.



Final Product/Process Change Notification

Document #:FPCN24945ZA

Issue Date:26 Apr 2023

Sites Affected:				
onsemi Sites		External Foundry/Subcon Sites		
onsemi Bucheon, Korea		None		
Marking of Parts/ Traceability of Change:		Changed material can be identified by lot code		
Reliability Data Summary:				
QV DEVICE NAME: NVHL027N65S3F (QV1-1)				
RMS: 81119				
PACKAGE: TO247				
Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj=150°C, 100% max rated V	1008 hrs	0/80
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/80
QV DEVICE NAME: NVB082N65S3F (QV2)				
RMS: 82687				
PACKAGE: D2PAK				
Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj=150°C, 100% max rated V	1008 hrs	0/80
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/77
NOTE: AEC-1pager is attached.				
<i>To view attachments:</i>				
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/s				
Electrical Characteristics Summary:				
Electrical characteristics are not impacted.				



Final Product/Process Change Notification

Document #:FPCN24945ZA

Issue Date:26 Apr 2023

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
NVB082N65S3F	NA	NVB082N65S3F
NVB095N65S3F	NA	NVHL027N65S3F,NVB082N65S3F
NVB110N65S3F	NA	NVHL027N65S3F,NVB082N65S3F
NVB150N65S3F	NA	NVHL027N65S3F,NVB082N65S3F
NVB190N65S3F	NA	NVHL027N65S3F,NVB082N65S3F
NVBG089N65S3F	NA	NVHL027N65S3F,NVB082N65S3F
NVBG110N65S3F	NA	NVHL027N65S3F,NVB082N65S3F
NVH050N65S3F	NA	NVHL027N65S3F
NVH082N65S3F	NA	NVHL027N65S3F
NVHL027N65S3F	NA	NVHL027N65S3F
NVHL040N65S3F	NA	NVHL027N65S3F
NVHL040N65S3HF	NA	NVHL027N65S3F
NVHL050N65S3HF	NA	NVHL027N65S3F
NVHL065N65S3F	NA	NVHL027N65S3F
NVHL082N65S3F	NA	NVHL027N65S3F
NVHL082N65S3HF	NA	NVHL027N65S3F
NVHL110N65S3HF	NA	NVHL027N65S3F
NVHL110N65S3F	NA	NVHL027N65S3F
NVHL095N65S3HF	NA	NVHL027N65S3F
NVBG190N65S3F	NA	NVHL027N65S3F,NVB082N65S3F
NVBG150N65S3F	NA	NVHL027N65S3F,NVB082N65S3F