

Title of Change:	Improve FAB process variation of SuperFET3 FRFET by optimizing Mask design
Proposed First Ship date:	31 Aug 2023 or earlier if approved by customer
Contact Information:	Contact your local onsemi Sales Office or Yuna.Im@onsemi.com
PCN Samples Contact:	Contact your local onsemi Sales Office. Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
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. FPCNs are issued 90 days prior to implementation of the change. onsemi 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
Marking of Parts/ Traceability of Change:	No change on Marking and Traceability
Change Category:	Wafer Fab Change
Change Sub-Category(s):	Mask design change

Sites Affected:

onsemi Sites

onsemi Bucheon, Korea

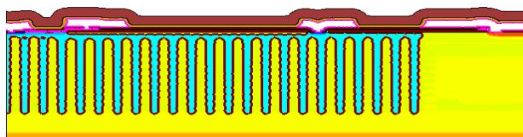
External Foundry/Subcon Sites

None

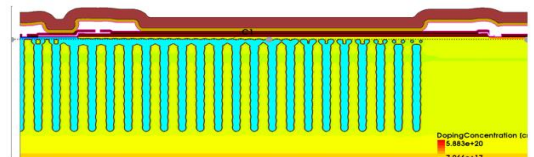
Description and Purpose:

SF3 FRFET has a variation at BV_{dss} due to unstable charge balance, 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.

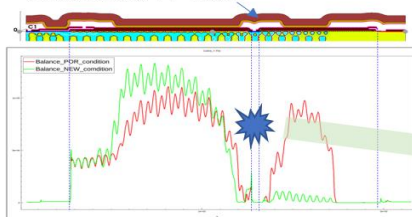
POR



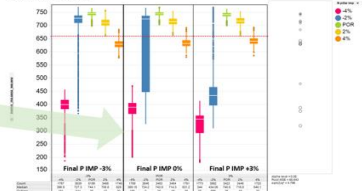
NEW



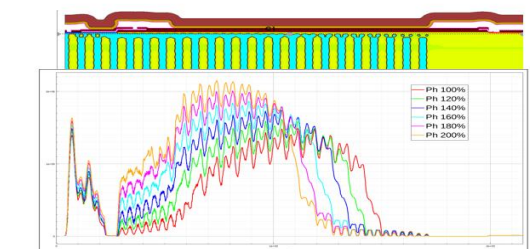
Si contacted FP metal



BV_{dss} @ 250uA



❖ BV_{dss} drop @ P-rich status



❖ E-field stable distribution w/o Si contacted FP metal

There are no product material changes as a result of this change

There is no product marking change as a result of this change



Final Product/Process Change Notification

Document #:FPCN24945XB

Issue Date:17 May 2023

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: NTH027N65S3F (QV1-2)

RMS: 85050

PACKAGE: TO247

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Tj=150°C, 100% max rated V	1008 hrs	0/79
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/80

QV DEVICE NAME: NTP082N65S3F (QV1-3)

RMS: 82206

PACKAGE: TO220

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

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**.

Part Number	Qualification Vehicle
NTP082N65S3F	NTP082N65S3F
NTP082N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTPF082N65S3F	NTPF082N65S3F
NTH027N65S3F-F155	NTH027N65S3F-F155
NTH4L027N65S3F	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL027N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL033N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTH4L040N65S3F	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL040N65S3F	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL040N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL050N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL065N65S3F	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL082N65S3F	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL095N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL110N65S3F	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL190N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTP095N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTP110N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTP150N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTP190N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTPF110N65S3HF	NTPF082N65S3F
NTPF150N65S3HF	NTPF082N65S3F
NTPF190N65S3HF	NTPF082N65S3F
NTB082N65S3F	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTB095N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTB110N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTB150N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTB190N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F



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NTCW082N65S3F	NVHL027N65S3F,NTH027N65S3F-F155,NTP082N65S3F
NTMT190N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTMT150N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTMT110N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTMT090N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F, NVB082N65S3F
NTBL082N65S3HF	NTBL082N65S3HF
NTHL065N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F
NTHL082N65S3HF	NVHL027N65S3F, NTH027N65S3F-F155, NTP082N65S3F