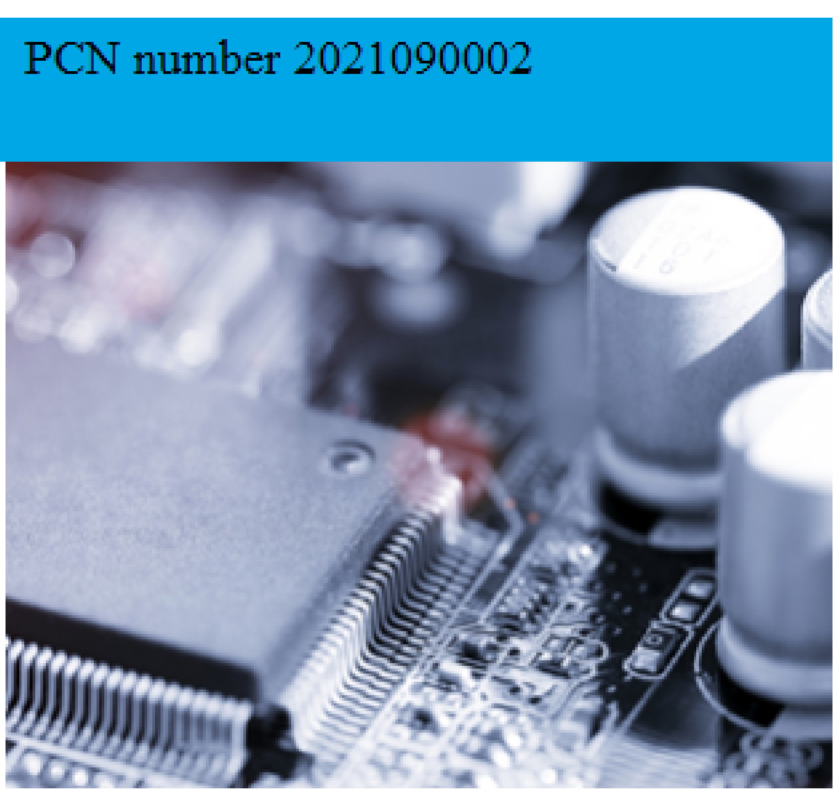
Final Product Change Notification PCN number 2021090002

Issue Date:2021-09-23
Effective Date:2022-01-07



Dear *Customer*,
Here's your quality information concerning products our customers and partners purchased from WeEn.

Management Summary
This notification is to release one more alternative EPI material vendor for SiC wafer.

Release One more EPI Vendor for SiC Wafer

Information Notification

Release one more alternative EPI material vendor for SiC wafer. For the details,please refer to the attached qualification report.

Why do we issue this Information Notification
It is to make sure the supply of materials, and comply with business contingency management.

Identification of Affected Products
Please refer to the product list attached.

Impact

Data Sheet Revision
No change.

Disposition of Old Products
Add one more alternative material vendor. The product performance is kept no change.

Production
The SiC wafers with these qualified EPIs are existed simultaneously.

Additional information

Affected products and sales history information: see attached file of Product List.
See attached file of Self-qualification Report.

Remarks

Should you not be able to obtain these documents, please contact your WeEn sales representative or the e-mail address mentioned below under Contact and Support.

Contact and Support

For all Quality Notification content inquiries, please contact your local WeEn Sales Support team.

For specific questions on this notice or the products affected please contact our specialist directly.

Name: Shawn Lin
Position: Quality Manager
e-mail address: Shawn.xf.lin@ween-semi.com

At WeEn Semiconductors we are constantly striving to improve our product and processes to ensure they reach the highest possible Quality Standards.

You have received this email because you are a designated contact or subscribed to WeEn Quallity Notifications. WeEn shall not be held liable if this Notification is not correctly distributed within your organization.

This message has been automatically distributed. Please do not reply.

WeEn Semiconductors
www.ween-semi.com

Qualification Report

Alternative EPI Material Vendor of SIC

Table of Contents

1. Introduction

The qualification report is to introduce and qualify one alternative EPI layer Vendor X-Fab in wafer fab factory, which is an existed supplier with IATF 16949 certified.

2. Affected types

Please refer to the product list attached.

3. Target Specification

Keep the same electrical performance and reliability as existed SIC product.

4. Purposed Technology or Material

Technology: 6inch 650V/1200V SiC Schottky Diodes

4.1 Wafer Fab Process
Keep same wafer technology 6inch wafer, introduce an alternative EPI material vendor.

4.2 Assembly Process
No change

5. Current Technology, Platform

The difference between current wafer and new wafer:

	Before	After
SiC platform	6inch	6inch (no change)
Substrate material	SiC	SiC (no change)
EPI layer material	SIC	SIC （X-FAB）

6. Test vehicles

The following product go through the qualification test.

Test ID	1	2	3
Product name	UJ3D1220KSD	UF3C065040K4S	UF3C120080K35
Package name	TO247-3L	TO247-4L	TO247-3L

7. Electrical Test Yield

7.1 Wafer Test Yield

Item	Yield(evaluation lot)	Yield (control lot)	comment
Crystal	95.15%	94.99%	wafer test
finished goods	93.81%	93.38%	final test

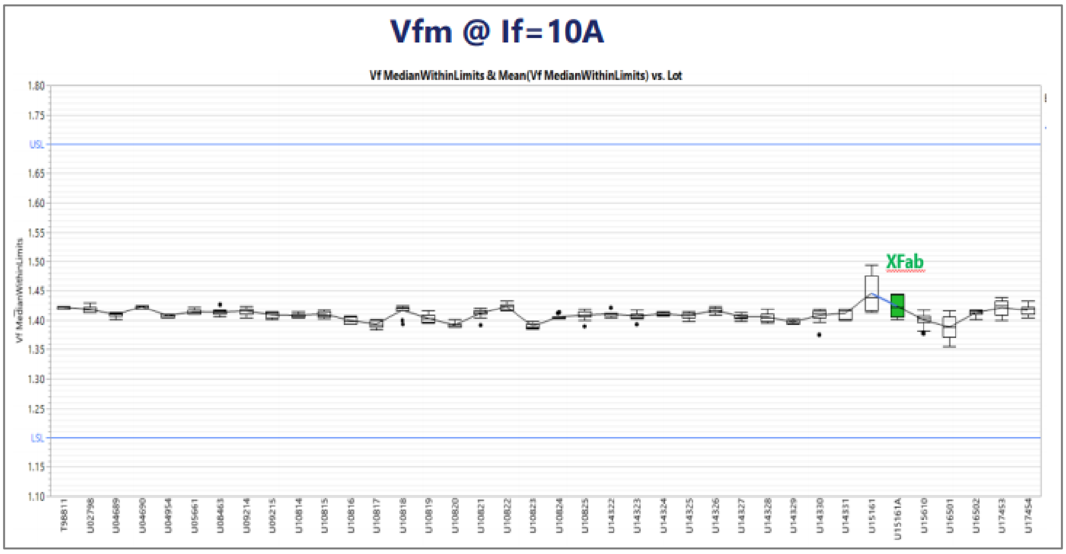
The yields of evaluation lot and control are comparative.

7.2 Datalog / Characterization

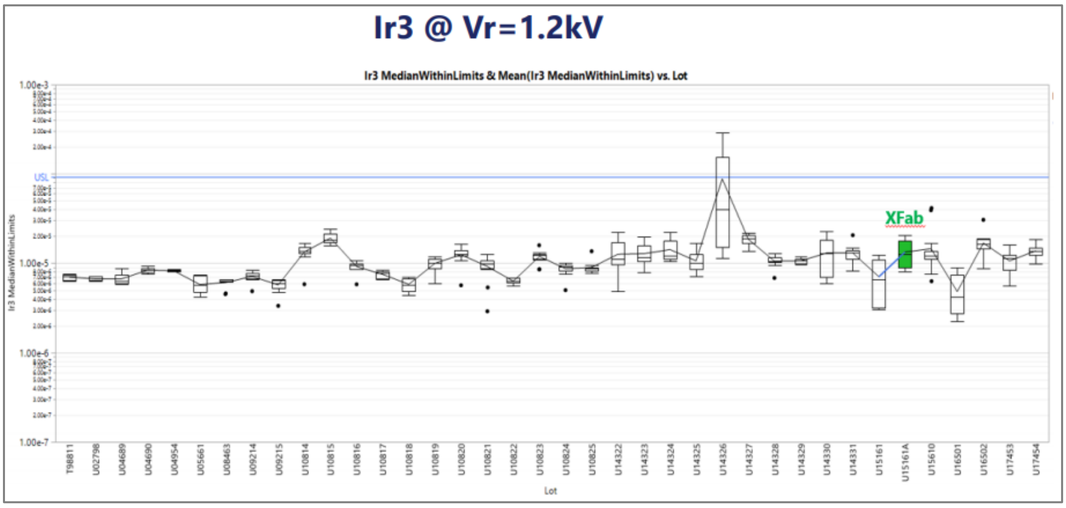
Datalog of static parameter are as following, which are statistically kept no change.

UJ3D1210 /UJ3D1220KSD

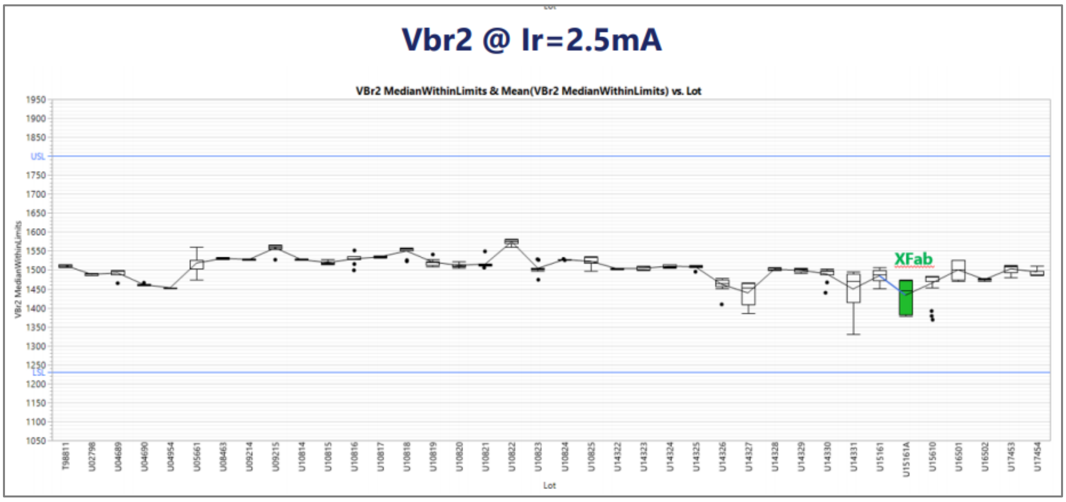
- **VF Data**



- **IR Data**

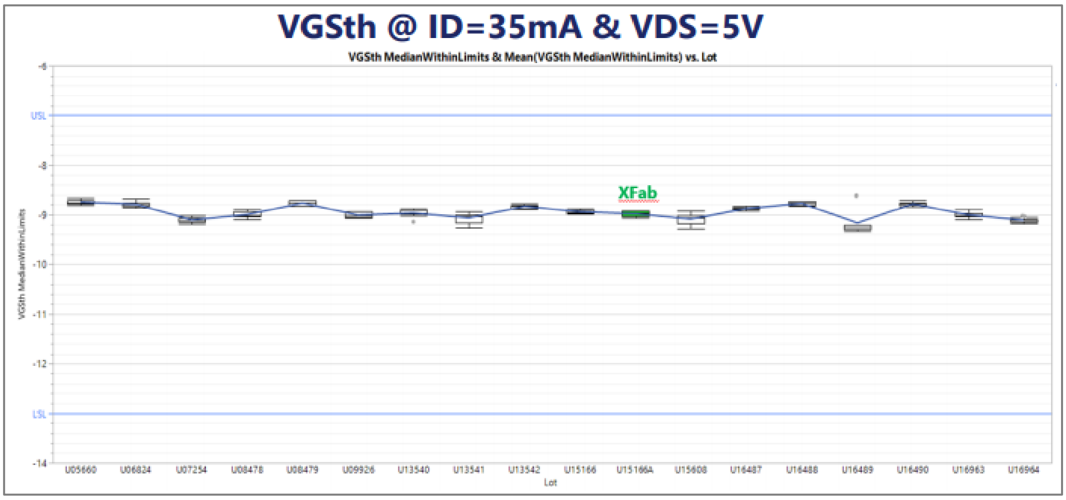


- **VBR Data**

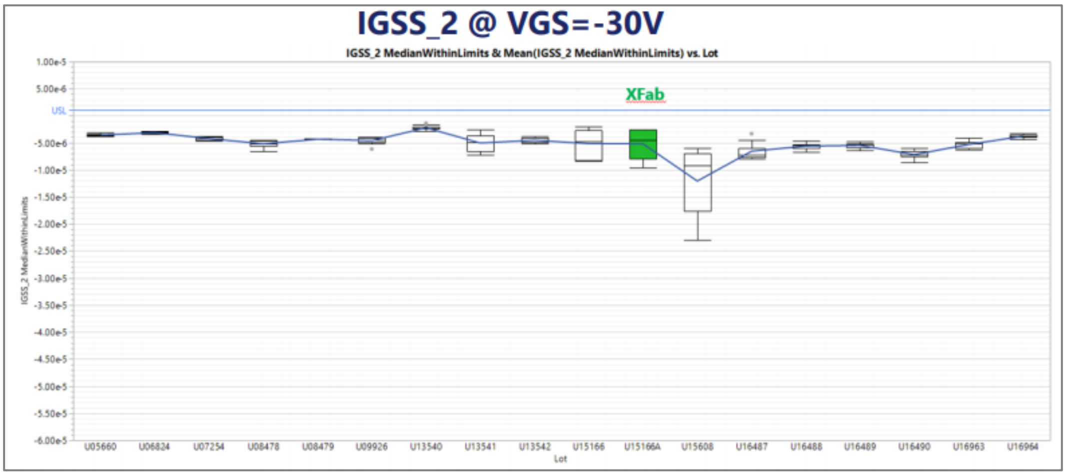


UF3N065035 / UF3C065040K4S

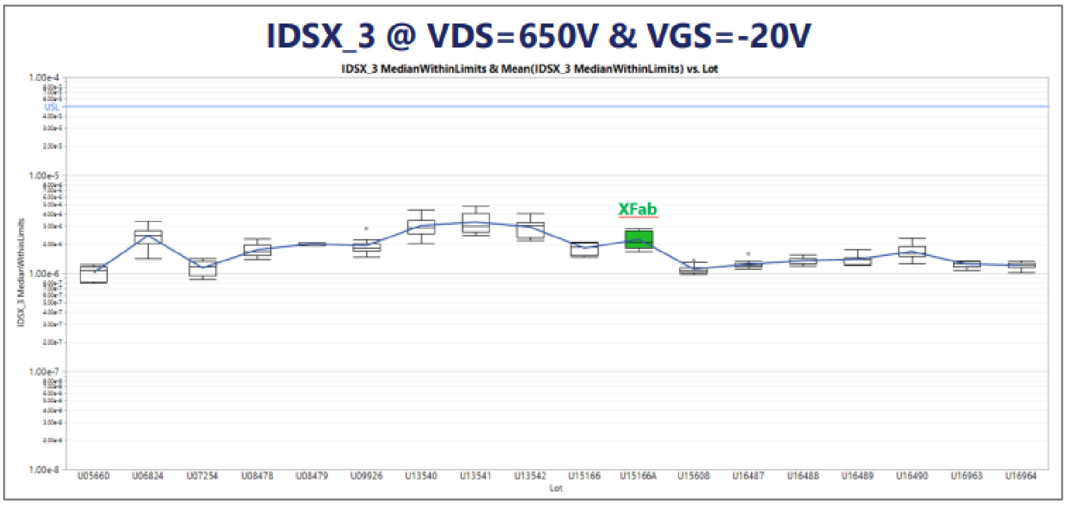
- **VGS Data**



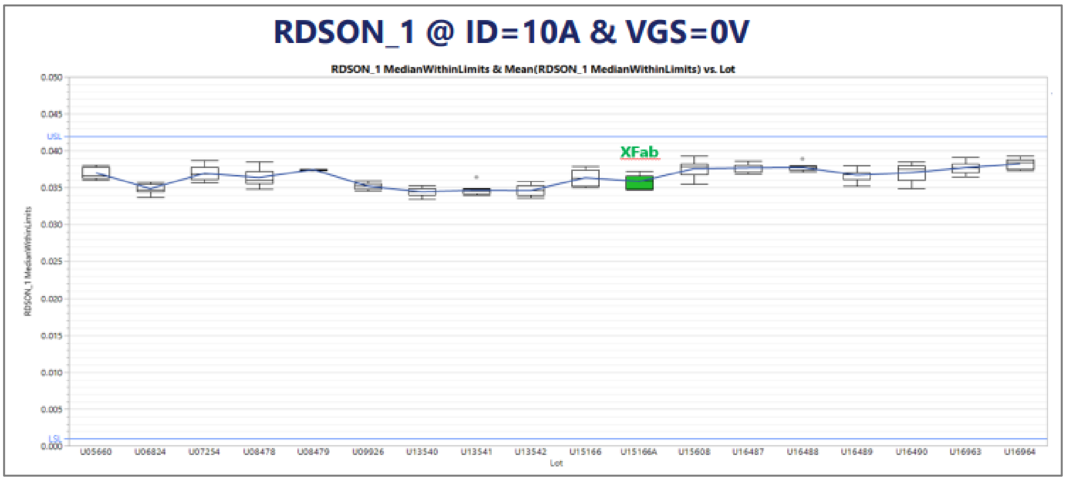
- **IGSS Data**



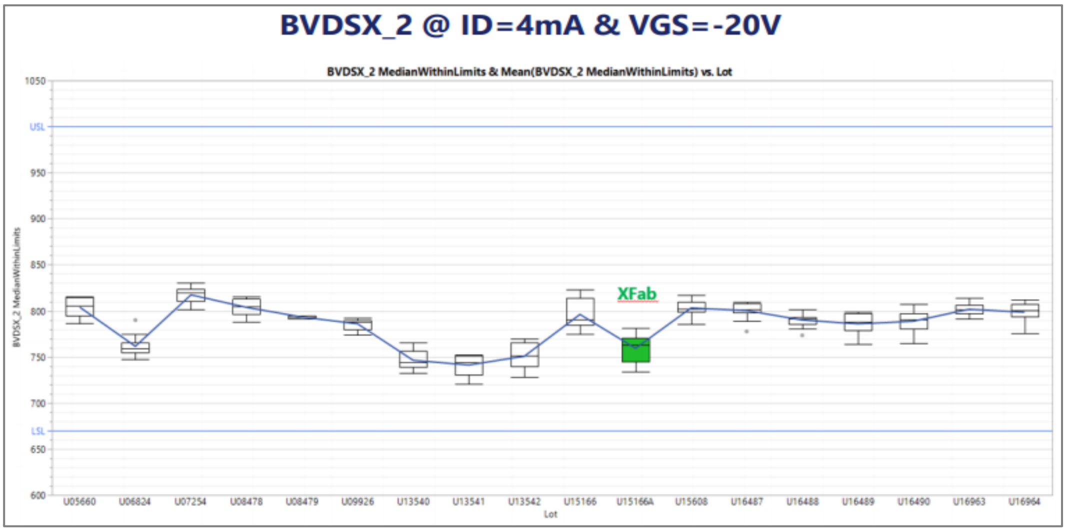
- **IDSX Data**



- **RDSON**

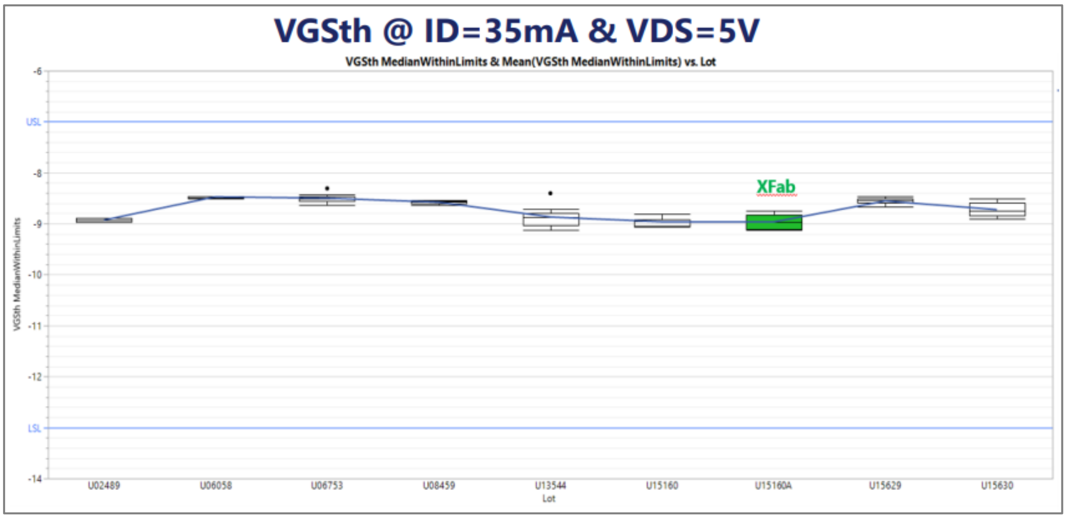


- **BVDSX Data**

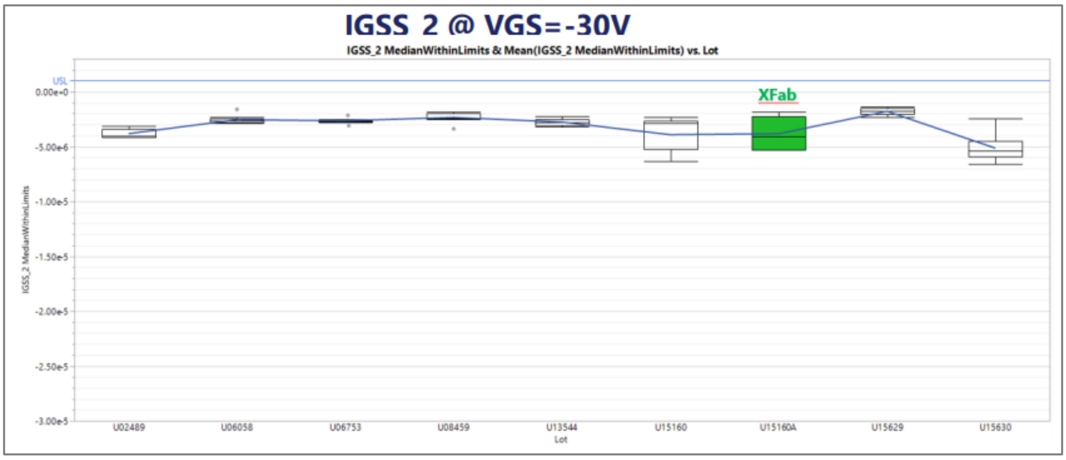


UF3N120070 / UF3C120080K3S

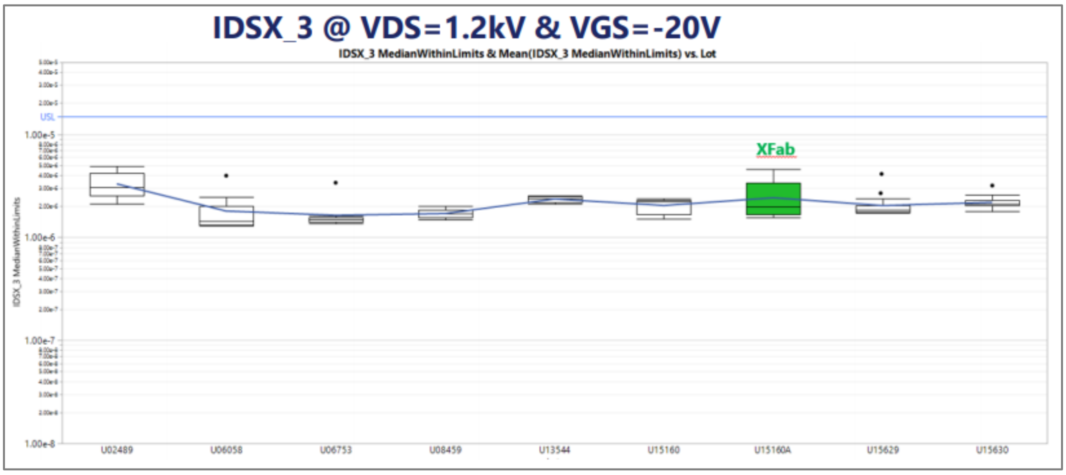
- **VGS Data**



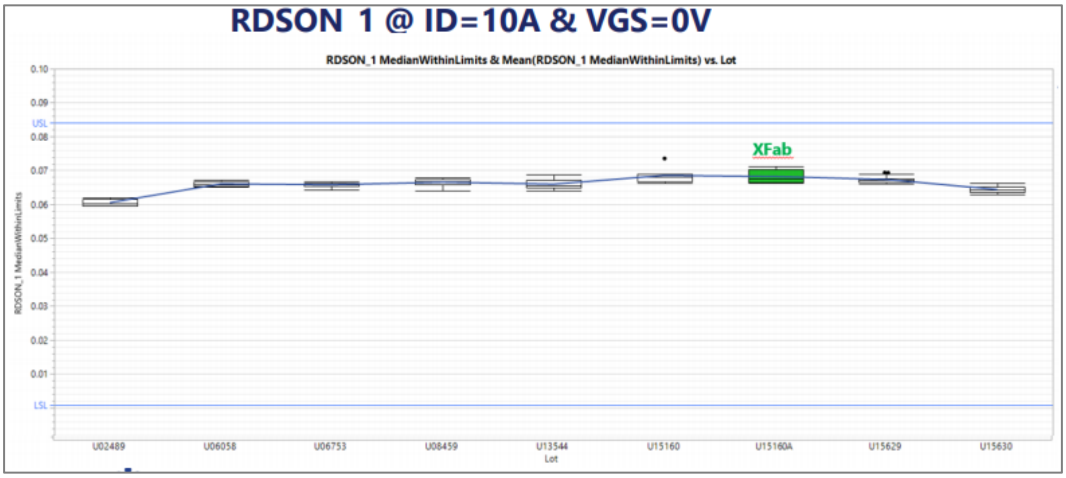
- **IGSS Data**



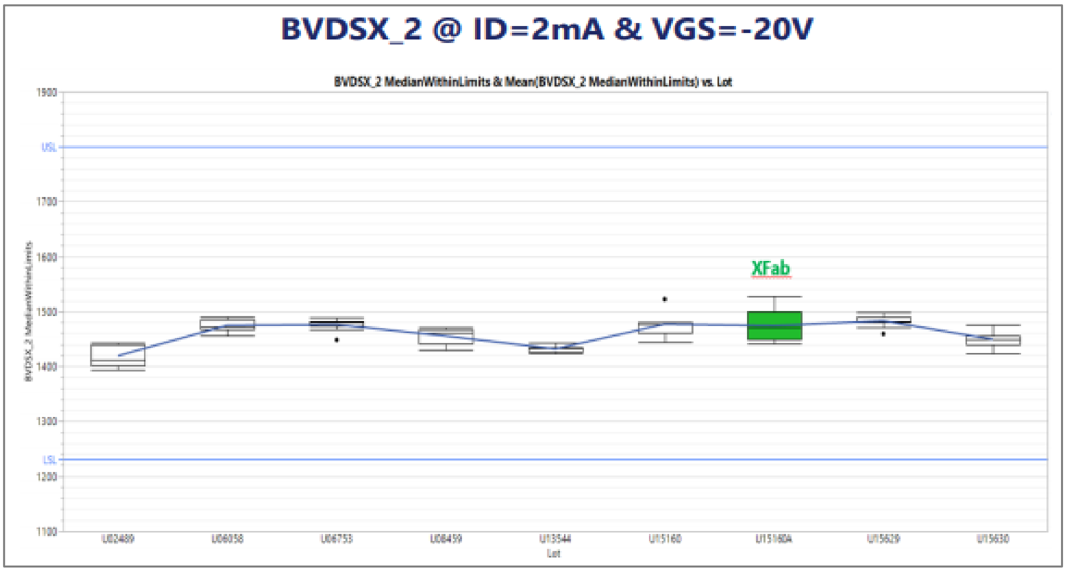
- **IDSX Data**



- **RDSON**



- **BVDSX Data**



8. Reliability Tests

The Reliability test result:

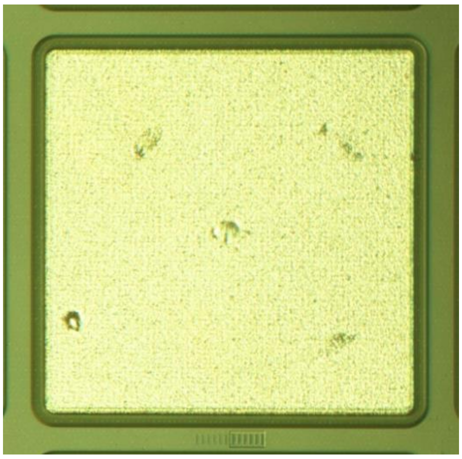
Part Number	S/S	HTRB	H3TRB	HAST	TFAT
UJ3D1220KSD	77pcs	0/77	-	0/77	0/77
UF3F065040K4S	77pcs	0/77	0/77	-	0/77
UF3C120080K35	77pcs	0/77	0/77	-	0/77

Reliability test conditions:

Test Name	Description	Conditions	Enduration
HTRB	High temperature reverse bias	Tj =175°C, Vds = 80% Vmax	1000h
H3TRB	Humidity with bias	T = 85°C, R.H.=85%, 80% Rated voltage	1000h
HAST	Unbiased highly accelerated stress	T = 130°C, R.H. = 85%, Vds=42V	96h
TFAT	Thermal Fatigue	DTj ≥ 125ºC	3Kcycs

9. Construction Analysis Tests

Chip graphs:no change



10. Identification of the Product Change

No change.

11. Conclusions

Base on the electrical performance & qualification data above, SIC wafer with new EPI material vendor X-FAB can meet the same requirements of current wafer in device specification, electrical performance, quality, and reliability.

Changed Orderable Part#	Changed Part 12NC	Changed Part Number
WNSC04650T6J	934072157118	WNSC04650T
WNSC06650T6J	934072158118	WNSC06650T
WNSC08650T6J	934072159118	WNSC08650T
WNSC10650T6J	934072160118	WNSC10650T
WNSC12650T6J	934072781118	WNSC12650T
NXPSC126506Q	934071115127	NXPSC12650
NXPSC166506Q	934071116127	NXPSC16650
NXPSC046506Q	934072071127	NXPSC04650
NXPSC066506Q	934072072127	NXPSC06650
NXPSC086506Q	934072073127	NXPSC08650
NXPLQSC106506Q	934072074127	NXPLQSC10650
NXPSC106506Q	934072075127	NXPSC10650
NXPSC206506Q	934072076127	NXPSC20650
WNSC021200Q	934072096127	WNSC021200
WNSC051200Q	934072097127	WNSC051200
WNSC101200Q	934072098127	WNSC101200
WNSC208006Q	934072789127	WNSC20800
NXPSC04650X6Q	934072079127	NXPSC04650X
NXPSC06650X6Q	934072082127	NXPSC06650X
NXPSC08650X6Q	934072085127	NXPSC08650X
NXPSC10650X6Q	934072089127	NXPSC10650X
NXPLQSC20650W6Q	934072086127	NXPLQSC20650W
NXPSC20650W6Q	934072090127	NXPSC20650W
NXPSC20650W-AQ	934072129127	NXPSC20650W-A
NXPLQSC30650W6Q	934072091127	NXPLQSC30650W
WNSC101200CWQ	934072101127	WNSC101200CW
WNSC201200CWQ	934072102127	WNSC201200CW
WNSC401200CWQ	934072161127	WNSC401200CW
WNSC16650CWQ	934072248127	WNSC16650CW
WNSC101200WQ	934072099127	WNSC101200W
WNSC201200WQ	934072100127	WNSC201200W
WNSC10650WQ	934072246127	WNSC10650W
WNSC12650WQ	934072247127	WNSC12650W
NXPSC04650D6J	934072078118	NXPSC04650D
NXPSC06650D6J	934072081118	NXPSC06650D
NXPSC08650D6J	934072084118	NXPSC08650D
NXPSC10650D6J	934072088118	NXPSC10650D
NXPSC12650B6J	934072063118	NXPSC12650B
NXPSC16650B6J	934072064118	NXPSC16650B
NXPSC04650B6J	934072077118	NXPSC04650B
NXPSC06650B6J	934072080118	NXPSC06650B
NXPSC08650B6J	934072083118	NXPSC08650B
NXPSC10650B6J	934072087118	NXPSC10650B