

PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.		ADG/18/11072
1.3 Title of PCN		Die Layout change for STD18NF03L
1.4 Product Category		Power MOSFET
1.5 Issue date		2018-09-17

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Riccardo NICOLOSO
2.2.2 Marketing Manager	Marcello SGROI
2.2.3 Quality Manager	Vincenzo MILITANO

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
General Product & Design	Die redesign: Mask or mask set change with new die design - Design changes in active elements.	AMK

4. Description of change

	Old	New
4.1 Description	STD18NF03L produced with current Die Layout	STD18NF03L produced with an Optimized Die Layout in the Gate
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact in terms of electrical, physical and functional aspects	

5. Reason / motivation for change

5.1 Motivation	Throughput increase thanks to an improved pattern recognition during wire bonding process
5.2 Customer Benefit	QUALITY IMPROVEMENT

6. Marking of parts / traceability of change

6.1 Description	by Q.A. number
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7. Timing / schedule

7.1 Date of qualification results	2018-09-05
7.2 Intended start of delivery	2019-03-03
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	
8.2 Qualification report and qualification results	In progress

9. Attachments (additional documentations)

11072 Public product.pdf
11072 PCN for new Die Layout change on STD18NF03L.doc
11072 STD18NF03L Current vs Proposed Silicon Layout.pdf
11072 PCN-FORM-Rev-3_0.xls

10. Affected parts		
10.1 Current		10.2 New (if applicable)
10.1.1 Customer Part No	10.1.2 Supplier Part No	10.1.2 Supplier Part No
	STD18NF03L	

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Automotive Discrete Group (ADG)
Power Transistor Division

Process Change Information

Die Layout change on STD18NF03L

Dear Customer,

Following the continuous improvement of our service and in order to increase productivity, we are pleased to announce that we are going to introduce a light change in Die Layout for STripFET™ 2nd generation product STD18NF03L with the target to increase the throughput.

The product with the new layout guarantees the same quality and electrical characteristics as per current production.

In the next pages, we are reporting the qualification plan to reach full maturity.

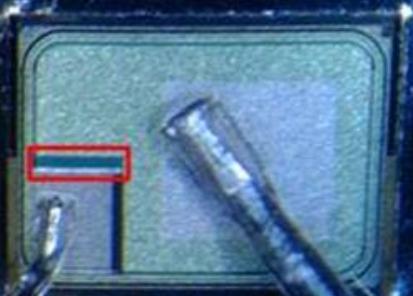
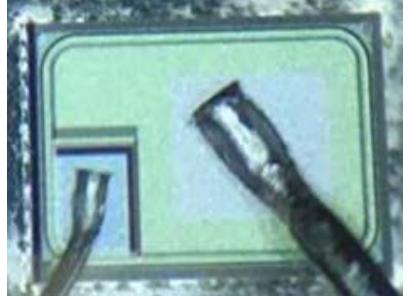
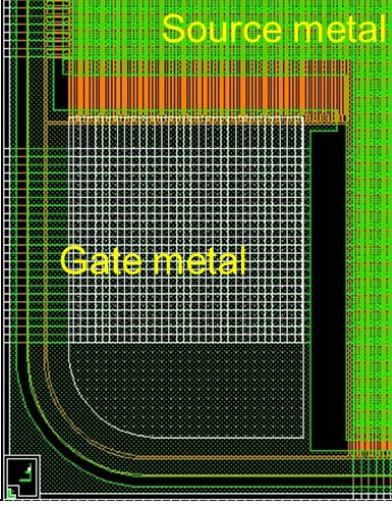
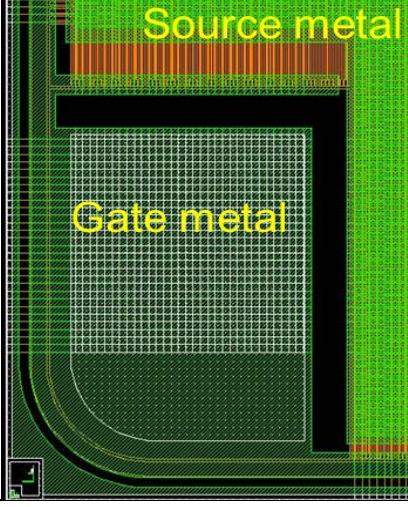
The change has been classified as **Class 1** according to the ZVEI and ST internal rules.

Assessment of impact on Supply Chain regarding following aspects		Remaining risks on Supply Chain?	
ID	Type of change	No	Yes
SEM-DE-01	Design changes in active elements. ¹⁾	P	P

The qualification of the change has been already completed.

Sincerely Yours!

Die Layout change on STD18NF03L

ST Part number:	ST PNs: STD18NF03L Package: DPAK
Reason and background of the change	Throughput increase thanks to an improved pattern recognition during wire bonding process
Detailed description of change(s), including affected type of changes	Gate Pad layout modification to improve the device workability (improve pad recognition) during bonding and, as a consequence, assembly yield improvement. Change Explanation In order to improve pattern recognition, we decided to introduce a clear distinction between black and white on gate pad area. This clear distinction has been implemented by putting the inverted “L”, used for pattern recognition, on top of the field oxide. By doing this we avoid Gate Metal to overlie with “L” on top side of Gate Pad. Here below a detailed explanation of the change:
Die Layout (Current)	
	
Die Layout (Proposal)	
	
Gate and Source Metal Details (Current)	Gate and Source Metal Details (Proposal)
	
Impact on form, fit, function, or reliability.	No Impact

Datasheet	No Impact														
Benefit of the change	Production throughput increase														
Qualification Plan and Implementation date for change	<p>The qualification has been performed according to the following plan:</p> <table border="1"> <thead> <tr> <th>Test Vehicles</th> <th>N. of Lots</th> <th>Reliability Plan</th> <th>Parametric Verification</th> <th>Forecast (wk)</th> </tr> </thead> <tbody> <tr> <td>STD18NF03L</td> <td>2</td> <td>Complete (according AEC-Q101)</td> <td>X</td> <td>Completed</td> </tr> </tbody> </table> <p>Planned Implementation Date → wk 39/2018 Planned First Shipment Date → wk 01/2019</p>					Test Vehicles	N. of Lots	Reliability Plan	Parametric Verification	Forecast (wk)	STD18NF03L	2	Complete (according AEC-Q101)	X	Completed
Test Vehicles	N. of Lots	Reliability Plan	Parametric Verification	Forecast (wk)											
STD18NF03L	2	Complete (according AEC-Q101)	X	Completed											
Traceability Information	By QA Number														
PPAP Update	By week 40/2018														