


PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	ADG/23/14471	
1.3 Title of PCN	Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang Mo Kio - Singapore) fab	
1.4 Product Category	RF Power	
1.5 Issue date	2023-12-13	

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	Roberto CRISAFULLI
2.1.2 Marketing Manager	Gaetano PIGNATARO
2.1.3 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.	Ang Mo Kio (Singapore)

4. Description of change

	Old	New
4.1 Description	Diffusion process and wafer testing for NTL00 and NTL20 resistor dice historically performed in ST-CT6 Catania fab	Diffusion process and wafer testing for the redesign of the new resistors to be performed in ST-SG6 Ang Mo Kio (Singapore) fab
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	form	

5. Reason / motivation for change

5.1 Motivation	To increase capacity and flexibility
5.2 Customer Benefit	CAPACITY INCREASE

6. Marking of parts / traceability of change

6.1 Description	Dedicated Finished Good (FG) code
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7. Timing / schedule

7.1 Date of qualification results	2023-12-05
7.2 Intended start of delivery	2024-03-05
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	14471 New resistors design_AMK transfer_DCRF Qualification report.pptx - Read-Only.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2023-12-13

9. Attachments (additional documentations)

14471 Public product.pdf
14471 14471.pdf
14471 New resistors design_AMK transfer_DCRF Qualification report.pptx - Read-Only.pdf

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
	SD2933W	
	SD2943W	
	SD4933	
	SD4933MR	

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Product/process change notification: Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang Mo Kio - Singapore) fab

ADG/23/14471

Product family	Technology	Package
RF DMOS	RF-RESISTOR	N/A

Description of the change

Diffusion process and wafer testing for NTL00 and NTL20 resistor dice previously performed in ST-CT6 Catania fab and now to be performed in ST-SG6 Ang Mo Kio (Singapore) fab

Reason

To increase capacity and flexibility

Date of implementation

3 months after notification date

Impact of the change

Form	X
Fit	
Function	
Reliability	

Product/process change notification:

ADG/23/14471

Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang
Mo Kio - Singapore) fab

Processability	
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Qualification of the change

See qualification report

Product/process change notification:

ADG/23/14471

Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang
Mo Kio - Singapore) fab

APPENDIX 1: RISK ASSESSMENT

#	Risks identified	Resulting potential risk	Class (low/medium/high)	Possible action
1				
2				
3				
4				
5				
...				

Product/process change notification:

ADG/23/14471

Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang
Mo Kio - Singapore) fab

APPENDIX 2: QUALIFICATION PLAN

#	Test name	Conditions	Sample size	Criteria
1				
2				
3				
4				
5				
...				

Product/process change notification:

ADG/23/14471

Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang Mo Kio - Singapore) fab

APPENDIX 3: QUALIFICATION EXECUTION AND RESULT

#	Test name	Conditions	Sample size	Criteria	When	Status	Result
1							
2							
3							
4							
5							
...							

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Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang Mo Kio - Singapore) fab

PCN # ADG/23/14471

Qualification report

December 6th , 2023

PCN # 14471

Title	Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang Mo Kio - Singapore) fab
Type of change	Die redesign: Mask or mask set change with new die design Line transfer for a full process or process brick (process step, control plan, recipes) from one site to another site: Wafer fabrication
Current Description	Diffusion process and wafer testing for NTL00 and NTL20 resistor dice historically performed in ST-CT6 Catania fab
New Description	Diffusion process and wafer testing for the redesign of the new resistors to be performed in ST-SG6 Ang Mo Kio (Singapore) fab
Impact of change	FORM
Reason of change	To increase capacity and flexibility
Customers benefit	MANUFACTURING FLEXIBILITY
Manufacturing location	Ang Mo Kio (Singapore)
Traceability	Dedicated Finished Good (FG) code
Date of samples availability	Upon request

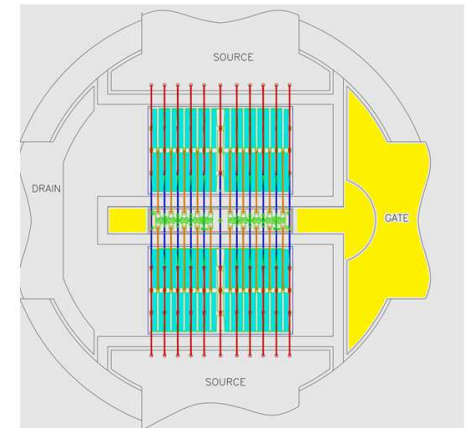
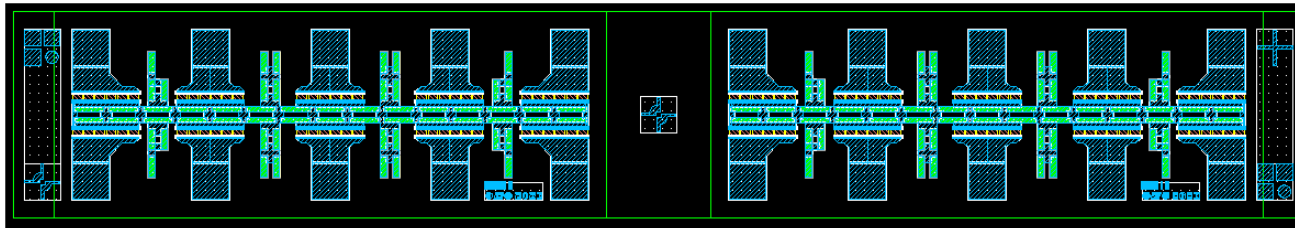
NTL00 → NTL10

CP code	FG code	NEW FG code
SD2933-02W	SD2933-02W\$K1	SD2933-02W\$K3
SD2933-03W	SD2933-03W\$K1	SD2933-03W\$K3
SD2933-04W	SD2933-04W\$K1	SD2933-04W\$K3
SD2933-05W	SD2933-05W\$K1	SD2933-05W\$K3
SD2933-06W	SD2933-06W\$K1	SD2933-06W\$K2
SD2933W	SD2933W\$K1	SD2933W\$K3
SD2943-01W	SD2943-01W\$K1	SD2943-01W\$K3
SD2943W	SD2943W\$K1	SD2943W\$K3

NTL20 → NTL21

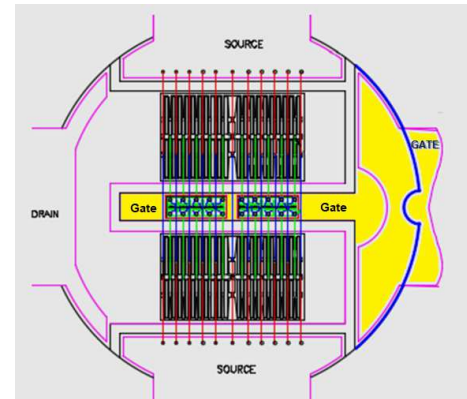
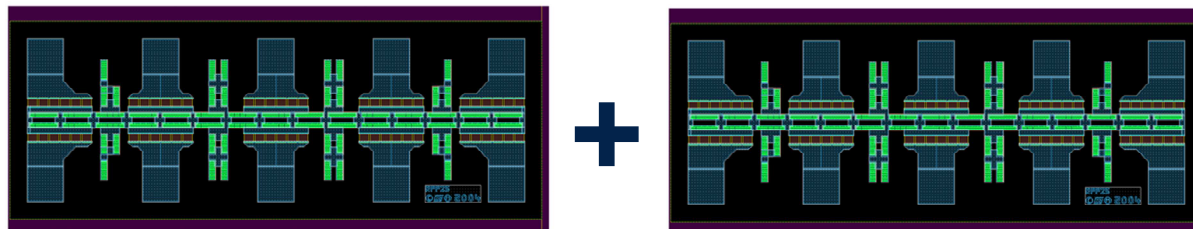
CP code	FG code	NEW FG code
SD4933	SD4933\$K	SD4933\$K1
SD4933-01	SD4933-01\$K	SD4933-01\$K1
SD4933MR	SD4933MR\$K	SD4933MR\$K1

New Resistor_Top Layout : NTL10



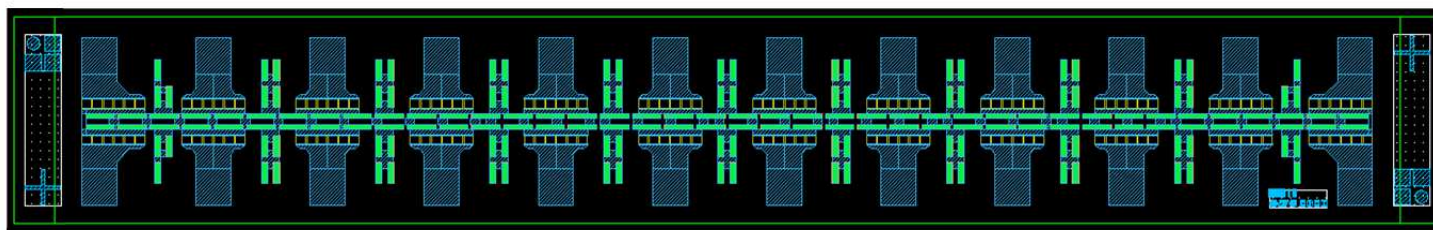
SD2933/SD2943 products family

Old Resistor_Top Layout : NTL00

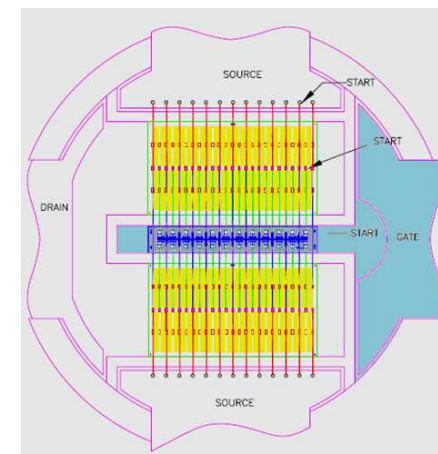
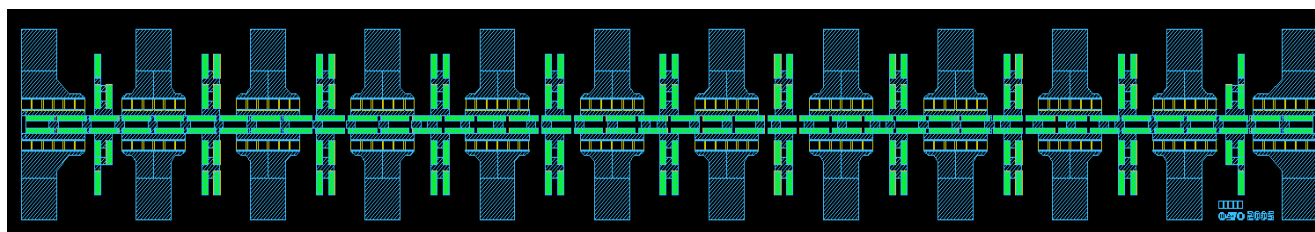


Note : the differences between new and old resistor consists in a single die , instead of 2 close together.
Furthermore, the new version contains some marks for automation assembly system.

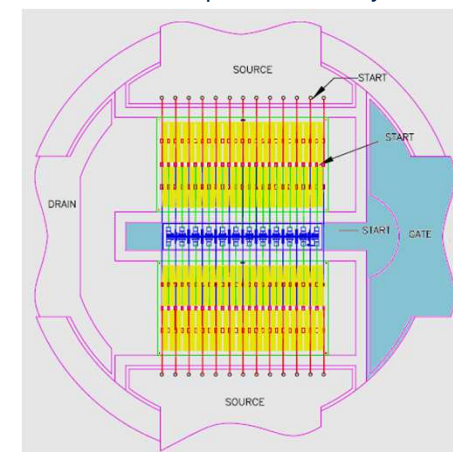
New Resistor_Top Layout : NTL21



Old Resistor_Top Layout : NTL20



SD4933 products family



Note : the only differences between new and old resistor consists in a die size increase, to allow the marks introduction for automation assembly system.



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DC characterization

Test vehicle : SD2933-04W

DC characterization AMK vs Catania resistor

FG code : SD2933-04W\$K1 – AMK die & Catania resistor

ASSY Lot #	DIE Lot #	WAFER	RESISTOR Lot #	DC IN/OUT	DC Yield %
CZ342DYQR1	V6248E37	8	860	119/119	100%

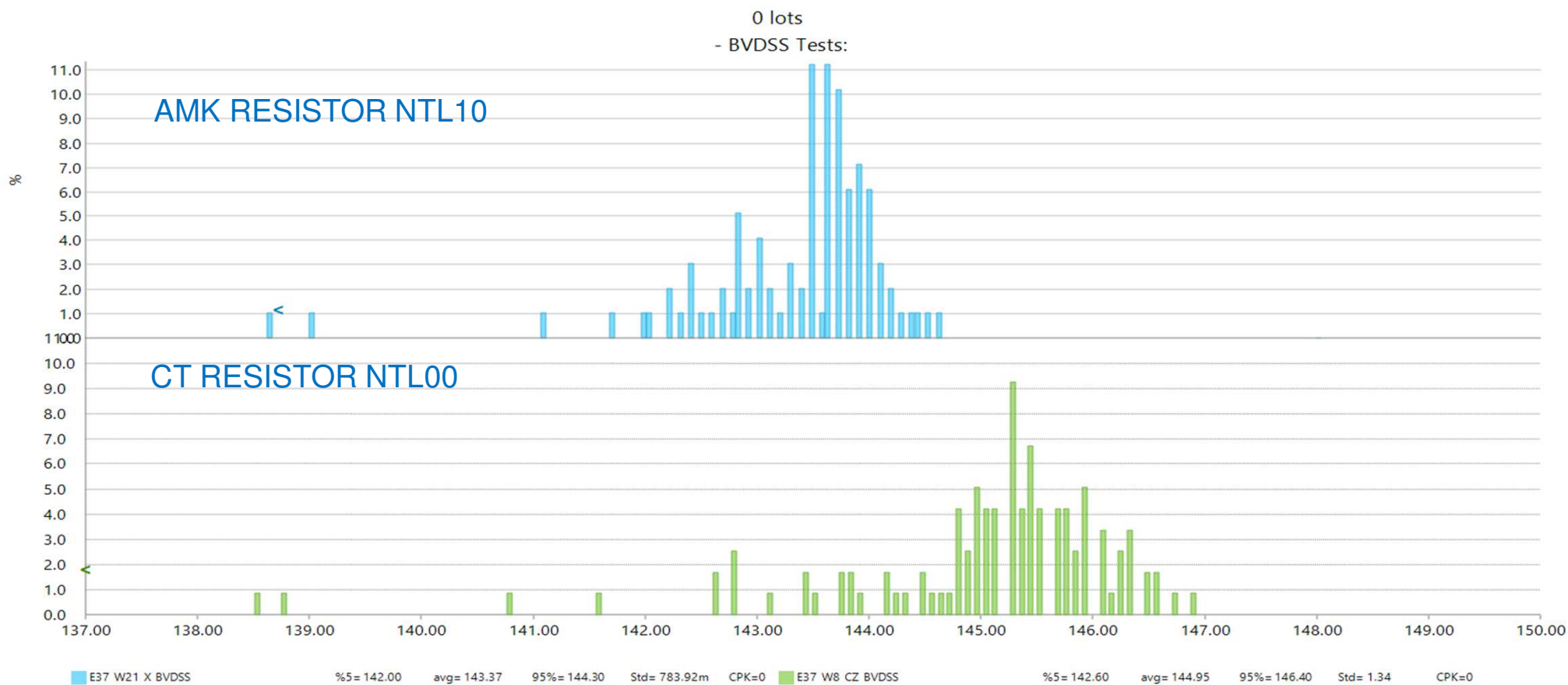
FG code : SD2933-04W\$K3 - AMK die & resistor

TRIAL N°	ASSY Lot #	DIE. Lot #	WAFER	RESISTOR Lot #	WAFER	DC IN/OUT	DC Yield %
T122339GC1559	CZ342DYQ0A	V6248E37	21	6318EYEV07	23	97/97	100%

BVDSS @ 0.2A

Spec : 130V min

nder v 5.0.1:2020-0221 User: fulvio vecchio



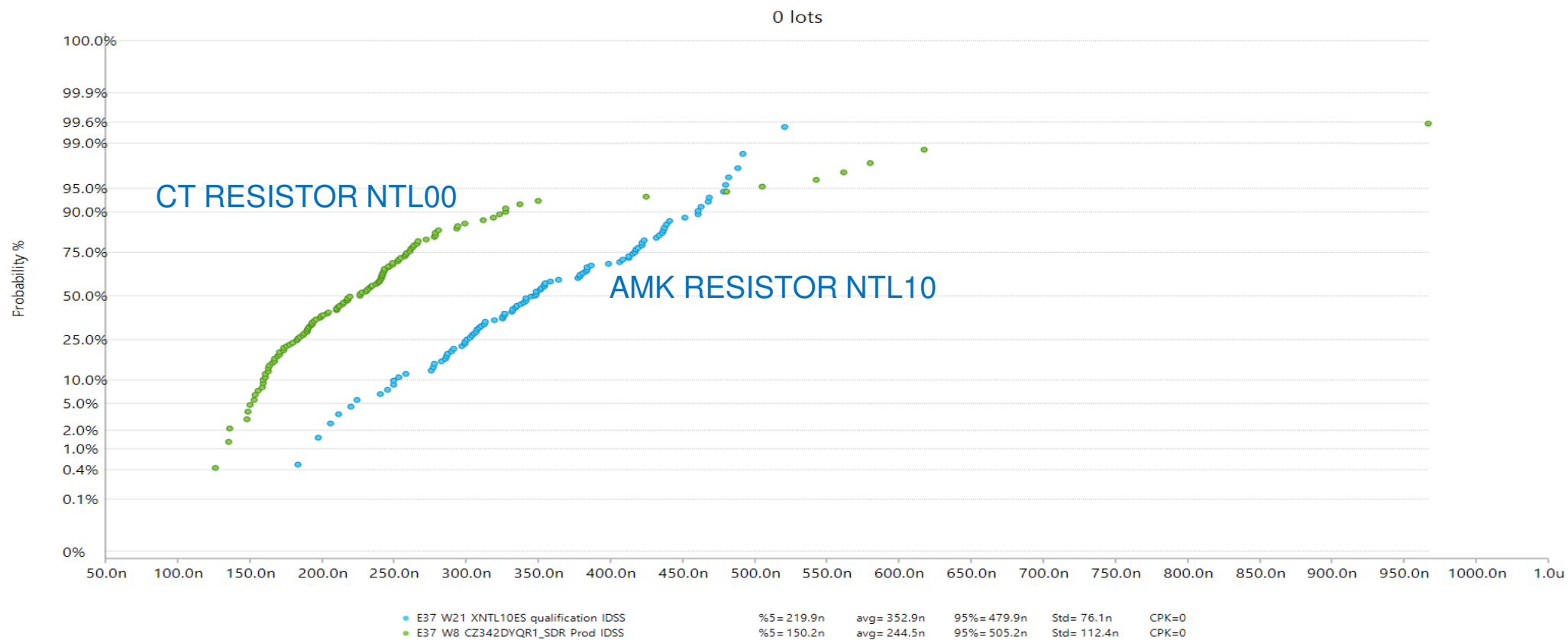
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ST Restricted

IDSS @ 50V

Spec : 30 μ A max

: fulvio vecchio

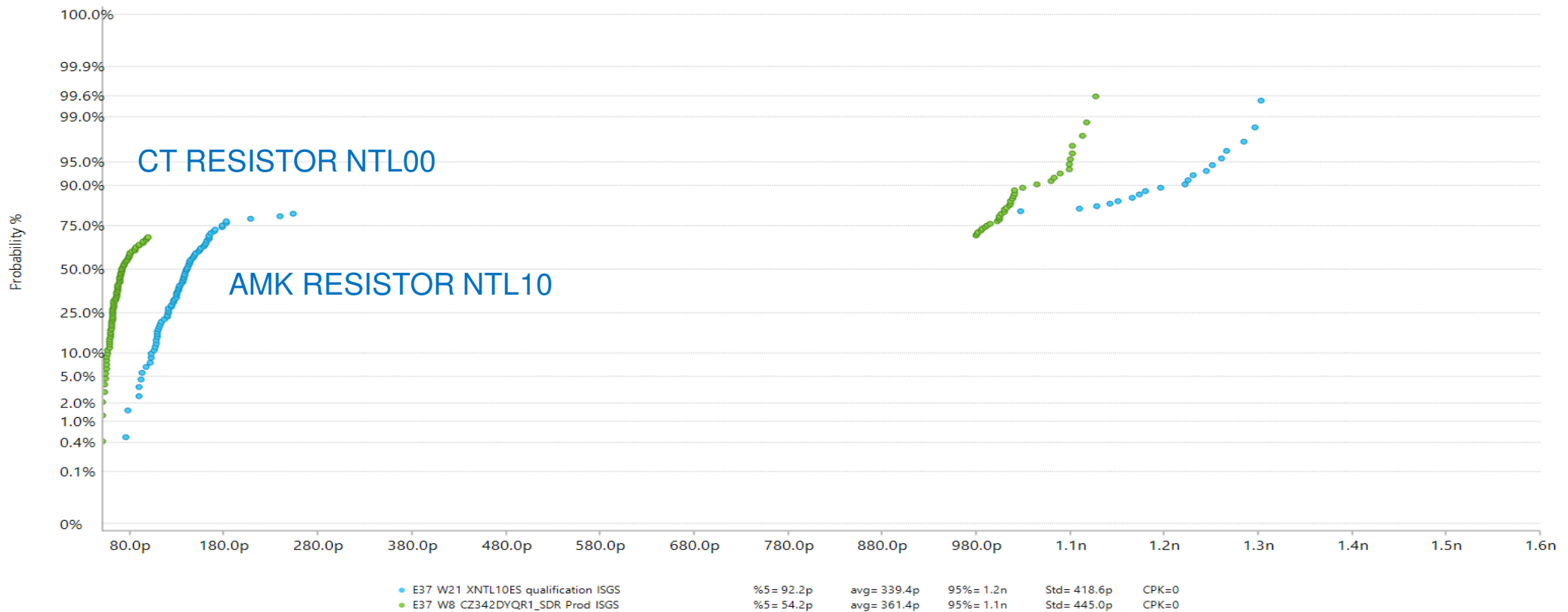


IGSS @ 20V

Spec : 300nA max

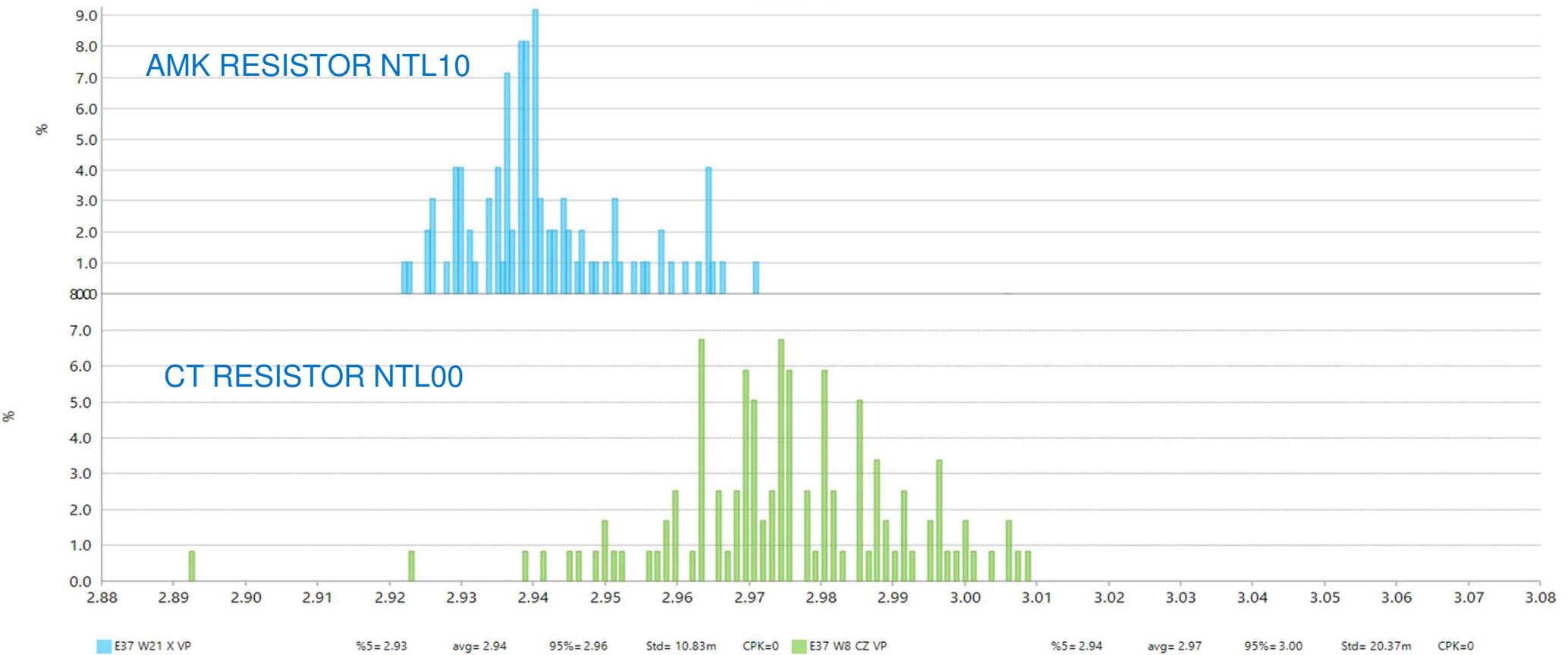
r: fulvio vecchio

0 lots



VP @ 0.25A
Spec : 1.8V min – 3.5V max

0 lots
- VP Tests:



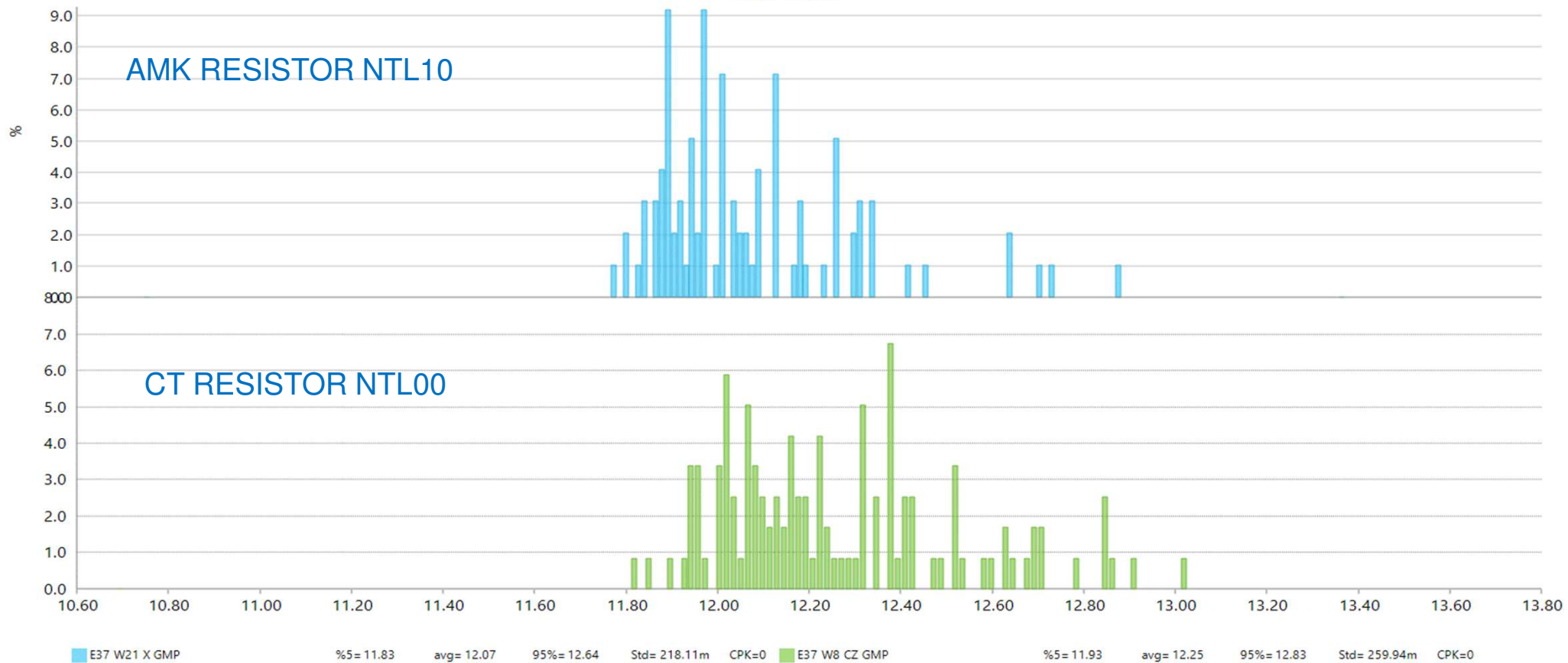
GFS @ 10A

Spec : 10S min

0 lots
- GMP Tests:

AMK RESISTOR NTL10

CT RESISTOR NTL00





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RF characterization

Test vehicle

30MHz : SD2933-02W / -03W / -05W

60MHz : SD2933-04W

RF characterization @ 30MHz AMK vs Catania resistor

FG code : SD2933-02W\$K1 / -03W\$K1 / -05W\$K1 – AMK die & Catania resistor					
ASSY Lot #	DIE Lot #	WAFER	RESISTOR Lot #	RF IN/OUT	RF Yield %
CZ342DYQR1	V6248E37	8	860	119/119	100%

FG code : SD2933-02W\$K3 / -03W\$K3 / -05W\$K3 – AMK die & resistor							
TRIAL N°	ASSY Lot #	DIE Lot #	WAFER	RESISTOR Lot #	WAFER	RF IN/OUT	RF Yield %
T122339GC1559	CZ342DYQ0A	V6248E37	21	6318EYEV07	23	97/97	100%

RF characterization @ 60MHz AMK vs Catania resistor

FG code : SD2933-04W\$K1 – AMK die & Catania resistor

ASSY Lot #	DIE Lot #	WAFER	RESISTOR Lot #	RF IN/OUT	RF Yield %	RF GAIN code
CZ342DYQR1	V6248E37	8	860	119/119	100%	73R + 45S + 1T

FG code : SD2933-04W\$K3 – AMK die & resistor

TRIAL N°	ASSY Lot #	DIE Lot #	WAFER	RESISTOR Lot #	WAFER	RF IN/OUT	RF Yield %	RF GAIN code
T122339GC1559	CZ342DYQ0A	V6248E37	21	6318EYEV07	23	97/97	100%	96R + 1S

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PCN Title : Redesign of the NTL00 and NTL20 resistor dice and transfer from CT6 (Catania) to SG6 (Ang Mo Kio - Singapore) fab

PCN Reference : ADG/23/14471

Subject : Public Products List

Dear Customer,

Please find below the Standard Public Products List impacted by the change.

SD2943W	SD2933W	SD4933
SD4933MR		

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