


PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	ADG/24/14502	
1.3 Title of PCN	VIPower® in QFN Package: New Leadframe Configuration	
1.4 Product Category	see list	
1.5 Issue date	2024-01-16	

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	Carmelo PISTRITTO
2.1.2 Marketing Manager	Rosario RUGGERI
2.1.3 Quality Manager	Daniela FAZIO

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Materials	New direct material part number r (same supplier, different supplier or new supplier),(Lead frame dimensions)	ST Calamba - Philippines

4. Description of change

	Old	New
4.1 Description	5 Maps Leadframe configuration	2 Maps Leadframe configuration
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact	

5. Reason / motivation for change

5.1 Motivation	Capacity increase
5.2 Customer Benefit	CAPACITY INCREASE

6. Marking of parts / traceability of change

6.1 Description	Dedicated Finished Good Codes
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7. Timing / schedule

7.1 Date of qualification results	2024-01-05
7.2 Intended start of delivery	2024-03-31
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	14502 details.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2024-01-16

9. Attachments (additional documentations)

14502 Public product.pdf
14502 details.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
	VN9D30Q100FTR	
	VN9D5D20FNTR	

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Product/process change notification: VIPower® in QFN Package: New Leadframe Configuration ADG/24/14502

Product family	Technology	Package
VIPower HSD	VIPower M0A9 / M0A10 (optional)	VFQFPN 6X6X1 32

Description of the change

Implementation of 2Maps leadframe configuration

See below additional details

Reason

Capacity Increase

Date of implementation

We are ready to implement upon customer agreement

Impact of the change

Form	No impact
Fit	No impact
Function	No impact
Reliability	No impact
Processibility	No impact

Qualification of the change

See below details and qualification data



life.augmented

VIPower® in QFN package - Calamba plant:

**L/F Configuration Conversion Project from
5Maps to 2Maps**

Agenda

3 Change Description

4 ZVEI Guidelines

5 Bill Of Material Comparison

6 Details of Change

7 Selected Test Vehicles

8 Impacted products list

9 Qualification Lots Reliability Program

10 Conclusions

Change description

- Aim of this document is to describe the conversion of the lead frame configuration, from 5Maps to 2Maps, used for the VIPower® products.
- The QFN package is assembled in Calamba plant.
- Detailed qualification activity has been performed in order to qualify the new 2Maps lead frame configuration.
- This report shows the positive results achieved. The new materials are ensuring the same quality and electrical characteristics as the current products assembled in 5Maps lead frame configuration.
- All reliability tests have been completed with positive results.

ZVEI Guidelines

- According to ZVEI recommendations, the notification is required.

		Assessment of impact on Supply Chain regarding following aspects - contractual agreements - technical interface of processability/manufacturability of customer - form, fit, function, quality performance, reliability	Remaining risks within Supply Chain?		Understanding of semiconductors experts	Examples to explain	A: Application level B: Board level C: Component level *: Not relevant for qualification matrix
ID		Type of change	No	Yes			
x	SEM-PA-03	Change in leadframe dimensions	P	P	Change in leadframe dimensions which has impact to the specified electrical parameter acc. data sheet or specification (e.g. heat sink, pin dimensions, die paddle size, ...) Not included: Variation within specification.	e. g. change in lead frame geometry	B

Bill Of Material Comparison (QFN package)

Actual Bill of Material	
ITEM	MATERIAL
WIRE	1.2 MILS Cu
WIRE	2.5 MILS Cu
FRAME	FRAME QFN 32L 6X6 4.2sq 5M
DIE ATTACH	GLUE ATROX 800HT2V-P1
MOLD COMPOUND	RESIN CEL 9240ZHF10W

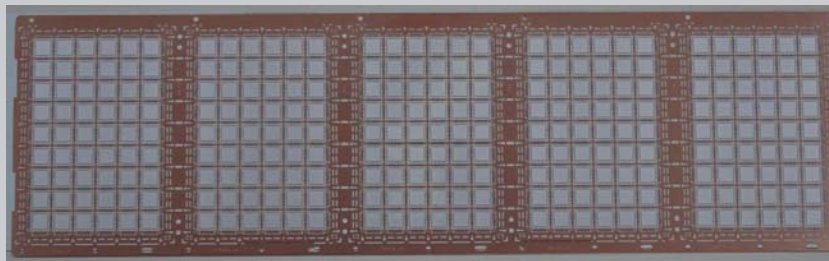


New Bill of Material	
ITEM	MATERIAL
WIRE	1.2 MILS Cu
WIRE	2.5 MILS Cu
FRAME	FRAME QFN 32L 6X6 4.2sq 2M
DIE ATTACH	GLUE ATROX 800HT2V-P1
MOLD COMPOUND	RESIN CEL 9240ZHF10W

Details of Change

Current Lead frame configuration vs new one

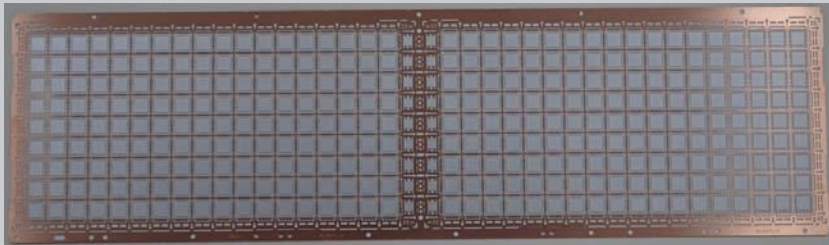
5 Maps Lead frame configuration



- Lead Frame configuration: 5Maps
- Unit density: 270 units/strip



2 Maps Lead frame configuration



- Lead Frame configuration: 2Maps
- Unit density: 324 units/strip

Selected Test Vehicle

- VIPower® in QFN package:
 - VN9D5D20FNTR (Silicon Line XV9703)

Impacted product list

Commercial products:

- VN9D5D20FTR
- VN9E30FTR
- VN9D5D20FNTR
- VN9D30Q100FTR

ST silicon line

XV6703
XV9103
XV9703
XV9903

Qualification Lots Reliability Program

Test	Reference	AEC-Q100 STM Test Conditions	XV97 1 st Q. Lot 78238GWE01	XV97 2 nd Q. Lot 783138WK02	XV97 3 rd Q. Lot 783138WKZZ	XV97 Ref. Lot 78238GJKZW	Results
MSL3		<ul style="list-style-type: none"> Pre-Conditioning Jedec Level 3 Bake (125°C / 24 hours) Soak (30 / 60%RH / 192 hours) 3x Convection Reflow at 260°C 	DONE	DONE	DONE	DONE	PASSED
T.C.	JESD22A-104	-55°C/+150°C Duration = 1000TC	0/77	0/77	0/77	0/77	PASSED
E.S.	JESD22A-102	AC (Ta = 121°C, Pa = 2 atm for 96 hours)	0/77	0/77	0/77	0/77	PASSED

Conclusions

- Detailed qualification activity has been performed in order to qualify the new 2Maps lead frame configuration for the VIPower® products.
- All reliability tests (AEC-Q100 requirement) have been completed with positive results.
- Neither functional nor parametric rejects were detected at final electrical test.
- This report shows the positive results achieved. The new materials are ensuring the same quality and electrical characteristics as the current products assembled in 5Maps lead frame configuration.



Public Products List

Public Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

PCN Title : VIPower® in QFN Package: New Leadframe Configuration

PCN Reference : ADG/24/14502

Subject : Public Products List

Dear Customer,

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

VN9E30FTR	VN9D5D20FNTR	VN9D5D20FTR
VN9D30Q100FTR		

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