



Public Products List

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PCN Title : PPAK (VIPower): Matrix Leafframe Introduction

PCN Reference : ADG/22/13787

Subject : Public Products List

Dear Customer,

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

VN820PTTR-E	VN750PTTR-E	
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PPAK Single Raw Lead Frame migration to Matrix Lead Frame Qualification

Agenda

3 Change Description

4 ZVEI Guidelines

5 Bill Of Material Comparison

6 Raw Material Change

7 Selected Test Vehicles

8 Impacted Products List

9/10 Qualification Lots Reliability Program

11 Conclusions

Change description

- Aim of this document is to describe the qualification activity performed to convert the single row 5 leads PPAK lead frame to the matrix 5 leads PPAK lead frame.
- The PPAK package is assembled in Shenzhen Plant.
- Detailed qualification activity has been performed in order to qualify the new matrix 5 leads PPAK lead frame.
- This report shows the positive results achieved. The new material is ensuring the same quality and electrical characteristics as the current products.
- 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: Boardlevel C: Component level *: Not relevant for qualification matrix
ID	Type of change	No	Yes				
x SEM-EQ-02	Production from a new equipment/tool which uses the same basic technology (replacement equipment or extension of existing equipment pool) without change of process.	--	P	PCN required for dedicated equipment for sensitive component production. (-): If change does not influence the integrity of the final product. (P): If impact on product integrity is anticipated.	(-): e.g. extension of existing equipment pool (P): e.g. extension of dedicated equipment in case basic technology still need to be proven	C	

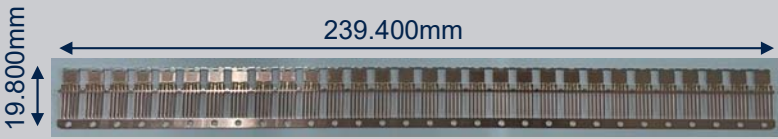
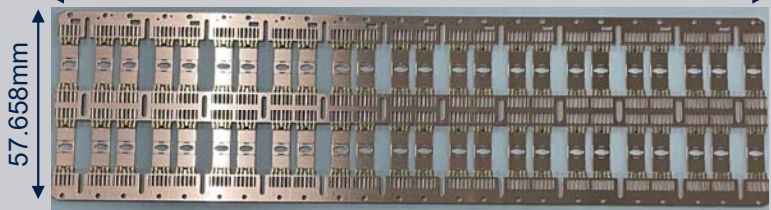
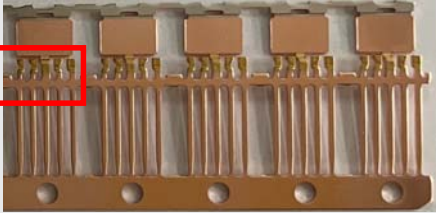

Bill Of Material Comparison

Actual Bill of Material	
ITEM	MATERIAL
WIRE	2.0 MILS Au
FRAME	FRAME PPAK 5L Single row
DIE ATTACH	PREFORM Pb/Ag/Sn 95.5/2.5/2
MOLD COMPOUND	RESIN SUMITOMO EME7026



New Bill of Material	
ITEM	MATERIAL
WIRE	2.0 MILS Au
FRAME	FRAME PPAK 5L Matrix
DIE ATTACH	PREFORM Pb/Ag/Sn 95.5/2.5/2
MOLD COMPOUND	RESIN SUMITOMO EME7026

Current Lead Frame vs new one

SDI Single Row (CURRENT)	SDI Matrix (NEW)
 <p>19.800mm</p> <p>239.400mm</p>	 <p>239.400mm</p> <p>57.658mm</p>
<p>Leads detail</p>  <p>Ni+Au</p> <p>Single row lead frame 1 row x 30 columns 30units</p>	<p>Leads detail</p>  <p>Ni+Au</p> <p>Matrix lead frame 4 rows x 24 columns 96 units</p>

Selected Test Vehicles

- VN750PTTR-E (Silicon Line VN7501)
- VN820PTTR-E (Silicon Line VN8201)

Impacted product list

Commercial products:

- VN750PTTR-E
- VN820PTTR-E

ST silicon line

- (Silicon Line VN7501)
- (Silicon Line VN8201)

VN750PTTR-E - Qualification Lots Reliability Program

Test	Reference	AEC-Q101 STM Test Conditions	VN75 1 st Q. Lot GK2255PYRP	VN75 2 nd Q. Lot GK2255PYRQ	VN75 3 rd Q. Lot GK2255PYRR	VN75 Ref. Lot GK2255PY02	Results
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
HTS		1000h @ 150°C	0/77	0/77	0/77	0/77	PASSED

VN820PTTR-E - Qualification Lots Reliability Program

Test	Reference	AEC-Q101 STM Test Conditions	VN82 1 st Q. Lot GK229EDBRP	VN82 2 nd Q. Lot GK229EDBRQ	VN82 3 rd Q. Lot GK229EDBRR	VN82 Ref. Lot GK229EDB02	Results
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
HTS		1000h @ 150°C	0/77	0/77	0/77	0/77	PASSED

Conclusions

- Detailed qualification activity has been performed in order to qualify the matrix 5 leads PPAK lead frame.
- 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 material is ensuring the same quality and electrical characteristics as the current products assembled in the single row 5 leads PPAK lead frame.

PRODUCT/PROCESS CHANGE NOTIFICATION

TITLE	PPAK (VIPower): Matrix Leadframe Introduction
IMPACTED PRODUCTS	<p>VIPower Products housed in PPAK</p> <ul style="list-style-type: none"> - VN820PTTR-E - VN750PTTR-E
MANUFACT. STEP	Assembly
INVOLVED PLANT	ST Shenzhen Plant (China)
CHANGE REASON	Standard Line Leadframe Closure
CHANGE DESCRIPTION	<p>Matrix leadframe (same Supplier) will be introduced on PPAK package No change in BOM (Bill Of Material)</p> <p>Additional details on Validation report included to this communication</p>
TRACEABILITY	Dedicated Finished Good Codes (internal part number)
VALIDATION	<p>Enclosed to this communication</p> <p>13787 Validation.pdf</p>