PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data	
1.1 Company	STMicroelectronics International N.V
1.2 PCN No.	ADG/17/10493
1.3 Title of PCN	PSSO-16 Deep Down Set (VIPower M0L7): Lead frame Additional Supplier (SDI) introduction for Shenzhen Assembly Plant
1.4 Product Category	see list
1.5 Issue date	2017-11-13

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	Nicola LIPORACE
2.1.2 Marketing Manager	Roberto CRISAFULLI
2.1.3 Quality Manager	Francesco MINERVA

3. Change		
3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Materials	Direct material: usage of material without any modification having same part number, and produced in a new plant of a qualified supplier	ST Shenzhen (China)

4. Description of change		
	Old	New
4.1 Description	SHM (Sumitomo)	SHM (Sumitomo) and SDI
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact	

5. Reason / motivation for change	
5.1 Motivation	Service Improvement
5.2 Customer Benefit	SERVICE IMPROVEMENT

6. Marking of parts / traceability of change	
6.1 Description	Internal traceability

7. Timing / schedule	
7.1 Date of qualification results	2017-10-05
7.2 Intended start of delivery	2017-11-30
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation			
8.1 Description	10493 PSSO-12_16 STS SDI Leadframe Validation Report.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2017-11-13

9. Attachments (additional documentations)

10493 Public product.pdf
10493 PSSO-12_16 STS SDI Leadframe Validation Report.pdf
10493 Details and qualification summary.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
	VN7020AJTR	
	VN7040AJTR	
	VN7050AJTR	
	VN7140AJTR	
	VND7040AJTR	
	VND7050AJTR	
	VND7140AJTR	

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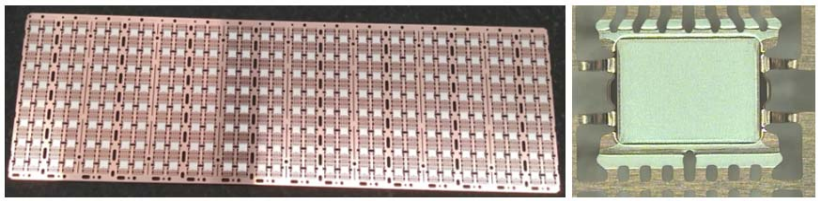
PSSO-16 Deep Down Set (VIPower M0L7): Lead frame Additional Supplier (SDI) introduction for Shenzhen Assembly Plant

WHAT:

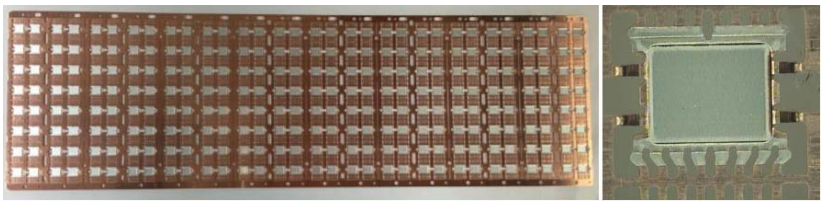
Please be informed that a second source supplier for lead frame (SDI) has been qualified for VIPower M0L7 housed in PSSO-16 Deep Down Set package version beside current SHM (Sumitomo)

Leadframe Comparison (P/N 5FT29152)

SHM Etched



SDI Stamped



WHY:

Reason for this change is:
A second source qualification to protect our Customers and business
Approach to select the second source supplier is same specifications and same materials

WHEN:

Change will be implemented upon Customer Agreement

HOW:

This change will be qualified using the standard STMicroelectronics procedures for quality and reliability Major steps of the qualification are:

- Process capability
- Workability
- Reliability
- Line stressing

IMPACTS OF THE CHANGE

Form: No change
Fit: No change
Function: No change

APPENDIX:

APPENDIX 1 Risk assessment
APPENDIX 2 Qualification results

APPENDIX 1: RISK ASSESSMENT

#	Risks identified	Potential risk resulting from	Class	Considered action
1	Workability issues on machines at different process step (Die attach, wire bonding, molding, plating, cropping)	Indexing holes with different positions Frame dimension(X, Y, thickness) different from actual ones	Low	Drawings check Samples verifications validation during workability exercise
2	Transport problems in magazines (D/Attach, wire bonding, Molding)	Frame dimension (X, Y, thickness) different from actual sizes	Low	Drawings check Samples verifications validation during workability exercise
3	D/A Quality problem	Results not in accordance with ST requirements on following: - voids - coverage - Bond line thickness	Medium	Reinforced checks to be done during execution of Quality plan and line stressing
4	Wire bonding quality problems	Results not in accordance with ST requirements on following: - Non-stick on Leads (NSOL). Poor bondability of 2nd bond - Pull test	Medium	Reinforced checks to be done during execution of Quality plan and line stressing
5	Molding quality problems	Results not in accordance with ST requirements on following: - Excessive resin flash - molding voids	Medium	Reinforced checks to be done during execution of Quality plan and line stressing
6	Deflash / Plating quality issues	Results not in accordance with ST requirements on following: - plating thickness - plating quality	Medium	Reinforced checks to be done during execution of Quality plan and line stressing
7	Cropping quality problems	Results not in accordance with ST requirements on following: - crack package - package mismatch (dimension) - Metal burrs	Medium	Reinforced checks to be done during execution of Quality plan and line stressing
8	Product Performance	Electrical performances or characteristics change due to frame new material (resistivity…)	Low	Datalog on critical parameters (test) during qualification
9	Reliability Risks	- Delamination Frame/ Die - Delamination frame / Molding compound - Plating quality - contamination	Medium	Checks to be done during qualification, reliability, line stressing
10	Manufacturing issues	Yield degradation	Low	Yield variation between the existing material and new one to monitor during ramp up phase and line stressing after change

		Productivity issue	Low	Production and down time parameters to monitor carefully during ramp up phase and line stressing after deployment
11	Supply Chain: To guarantee parts delivery to our customers and avoid business disruption	No sufficient Buffer stock	Medium	Buffer stock of existing material to be secured by SHM to cover ST needs including the qualification period
		Unscheduled problems during deployment reducing the production throughput or degrading the yield or stopping the assembly activity	Medium	- Deployment plan to be carefully prepared - All opened points highlighted during qualification must be solved before moving to production
12	Supply Chain: Quality issues (ECC)	Quality or reliability problems in the field	Low	Quality and reliability plans to be carefully verified to address potential product vulnerabilities

APPENDIX 2: Qualification execution & results

	ITEMS	PSSO-16 Deep Down Set XV17 RESULTS
1	Workability	Passed
2	Construction analysis	Passed
3	Reliability	Passed
4	Line Stressing	Passed