


**PRODUCT / PROCESS CHANGE NOTIFICATION**

**1. PCN basic data**

<b>1.1 Company</b>		STMicroelectronics International N.V
<b>1.2 PCN No.</b>	APG/15/9167	
<b>1.3 Title of PCN</b>	VIPower M05 in PSSO-12 (Deep Down Set): Activation of Shenzhen as Additional Assembly and Testing Location	
<b>1.4 Product Category</b>	see list	
<b>1.5 Issue date</b>	2015-04-10	

**2. PCN Team**

<b>2.1 Contact supplier</b>	
<b>2.1.1 Name</b>	ROBERTSON HEATHER
<b>2.1.2 Phone</b>	+1 8475853058
<b>2.1.3 Email</b>	heather.robertson@st.com
<b>2.2 Change responsibility</b>	
<b>2.2.1 Product Manager</b>	Riccardo NICOLOSO
<b>2.1.2 Marketing Manager</b>	Nicola LIPORACE
<b>2.1.3 Quality Manager</b>	Francesco MINERVA

**3. Change**

<b>3.1 Category</b>	<b>3.2 Type of change</b>	<b>3.3 Manufacturing Location</b>
Transfer of a full process or process brick (process step, control plan, recipes) from one site to another site	Assembly site	ST Shenzhen (China)

**4. Description of change**

	<b>Old</b>	<b>New</b>
<b>4.1 Description</b>	Assembly and Testing in Bouskoura (Morocco)	Assembly and Testing in Shenzhen (China) as additional location beside Bouskoura
<b>4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?</b>	No change	

**5. Reason / motivation for change**

<b>5.1 Motivation</b>	Service Improvement
<b>5.2 Customer Benefit</b>	SERVICE IMPROVEMENT

**6. Marking of parts / traceability of change**

<b>6.1 Description</b>	Dedicated Finished Good codes
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**7. Timing / schedule**

<b>7.1 Date of qualification results</b>	2015-03-26
<b>7.2 Intended start of delivery</b>	2015-07-06
<b>7.3 Qualification sample available?</b>	Upon Request

**8. Qualification / Validation**

<b>8.1 Description</b>	Qualification.pdf		
<b>8.2 Qualification report and qualification results</b>	Available (see attachment)	<b>Issue Date</b>	2015-04-10

**9. Attachments (additional documentations)**

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
	VN5050AJTR-E	
	VN5050JTR-E	
	VN5E050AJTR-E	
	VN5E050JTR-E	
	VN5E050MJTR-E	
	VND5160AJTR-E	
	VND5E160AJTR-E	
	VND5E160JTR-E	
	VND5E160MJTR-E	

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## Public Products List

**PCN Title :** VIPower M05 in PSSO-12 (Deep Down Set): Activation of Shenzhen as Additional Assembly and Testing Location

**PCN Reference :** APG/15/9167

**PCN Created on :** 26-Mar-2015

**Subject :** Public Product List

Dear Customer,

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

VND5E160AJTR-E	VND5E160JTR-E	VND5160AJTR-E
VN5E050AJTR-E	VN5050AJTR-E	VN5E050JTR-E
VND5E160MJTR-E	VN5050JTR-E	VN5E050MJTR-E



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## VIPower M05 in PSSO-12 (Deep Down Set): Activation of Shenzhen as Additional Assembly and Testing Location

### WHAT:

Please be informed that we are going to activate ST Shenzhen (China) as additional assembly and testing location, beside ST Bouskoura (Morocco), for VIPower M05 devices housed in PowerSSO-12 package Deep Down Set version.

### Material Comparison

Item	Bouskoura	Shenzhen
Molding Compound	SUMITOMO EME7026	SUMITOMO EMEG700LS
Die Attach	Preform Pb/Ag/Sn	Preform Pb/Ag/Sn
Bonding wire	Au 1.3 , Cu 2.5 mils	Cu 1.2 ,Cu 2.5 mils
LeadFrame	Standard Matrix	Matrix High Density (256 units)
Lead-plating	Sn 100%	Sn 100%

We will introduce "strip test" in Final Test as well.

Strip test\* consists in testing the device directly on the Lead Frame form (strip) before singulating it (2nd crop). Same test coverage and quality will be applied.

\*see below details about strip test

### WHY:

Service Improvement

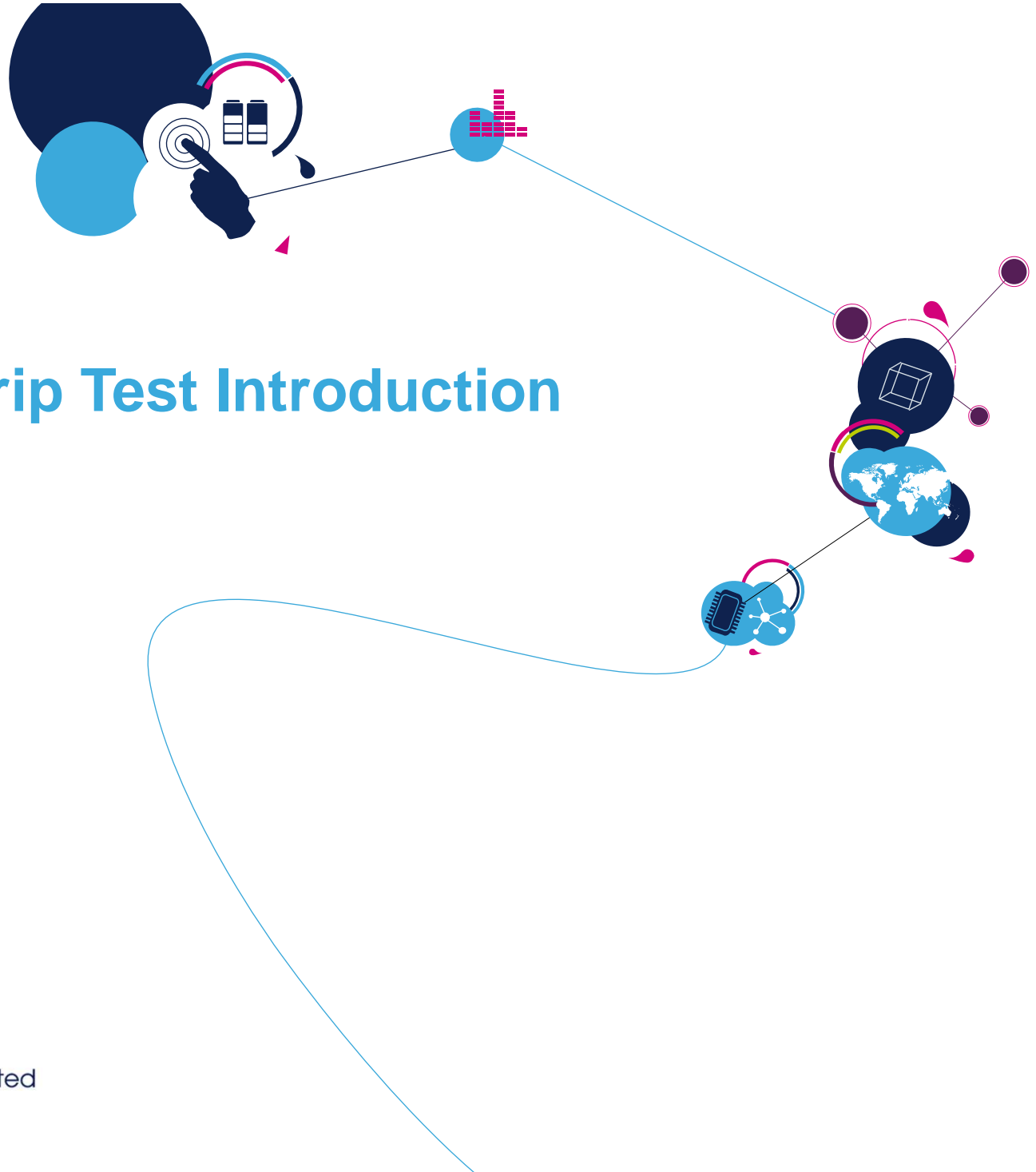
### HOW:

See qualification report RR000415CT2235 and strip test validation activity.

### WHEN:

From July 2015, but we are ready ship parts prior this date upon Customer agreement.

Sample will be available on demand .



# PSSOxx: Strip Test Introduction

Shenzhen, March 2015

# PSSO Strip Test Introduction

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- Strip test is a new testing methodology that does not impact fit, form and function nor reliability of the products.
- Materials and equipments are not changed neither at FE nor at BE level
- Strip test is performed in between 1<sup>st</sup> crop (dam-bar cut) and 2<sup>nd</sup> crop (Trim&Form and final singulation)
- Further test step at ambient temperature is inserted after vision check

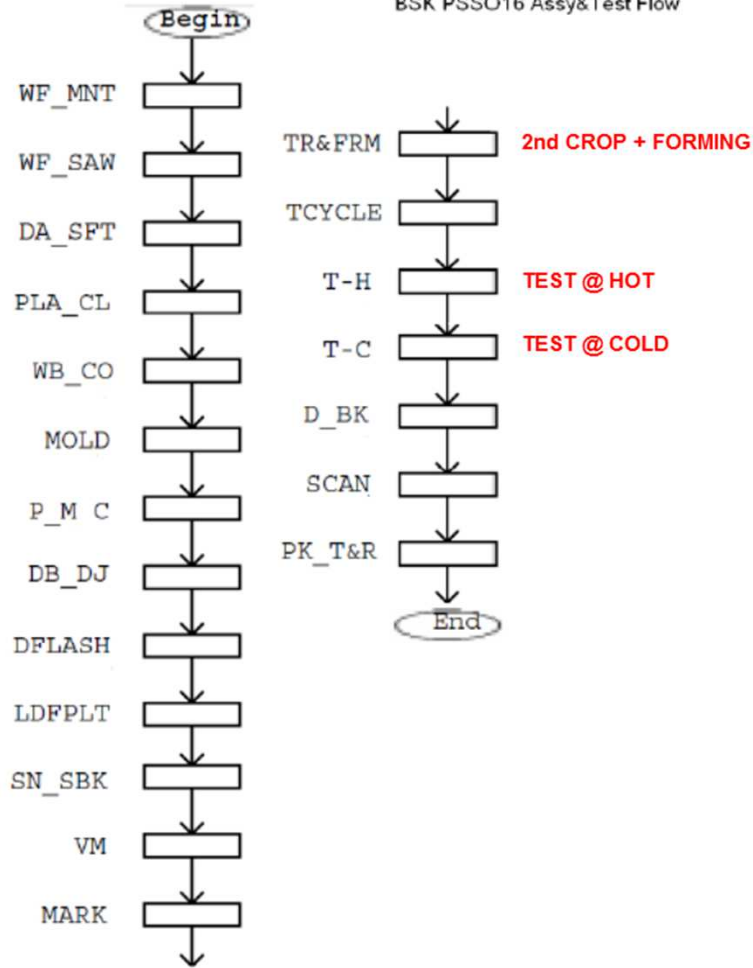
Here follows some slides to explain this new testing methodology.



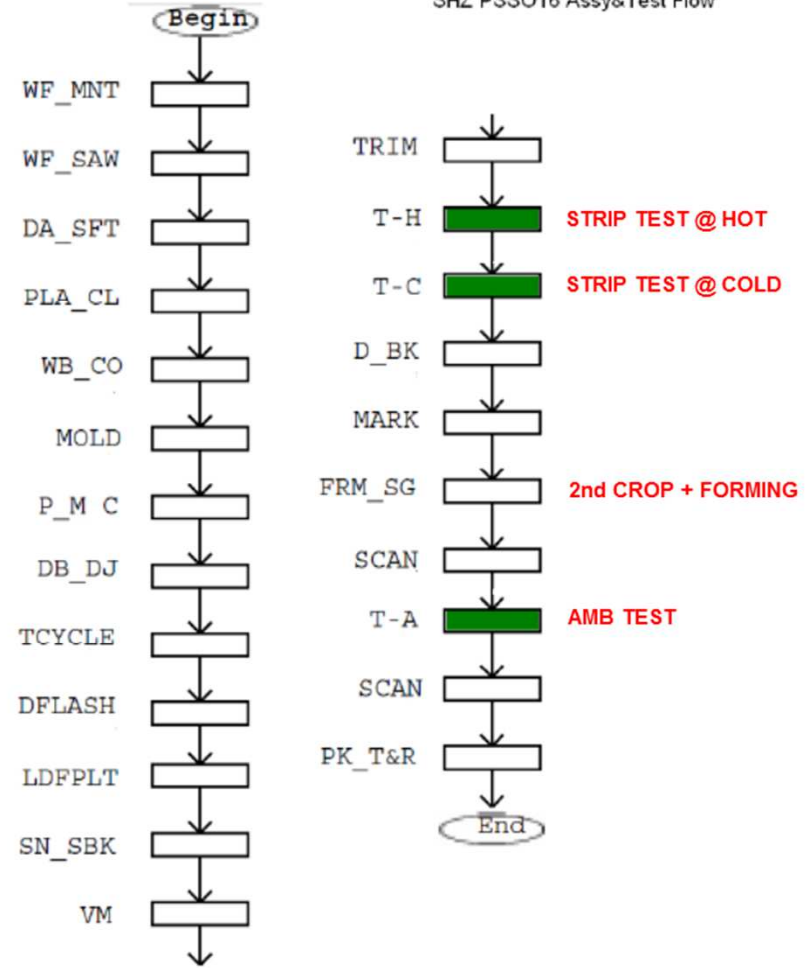


# PSSO OLD vs NEW Flow

BSK PSSO16 Assy&Test Flow



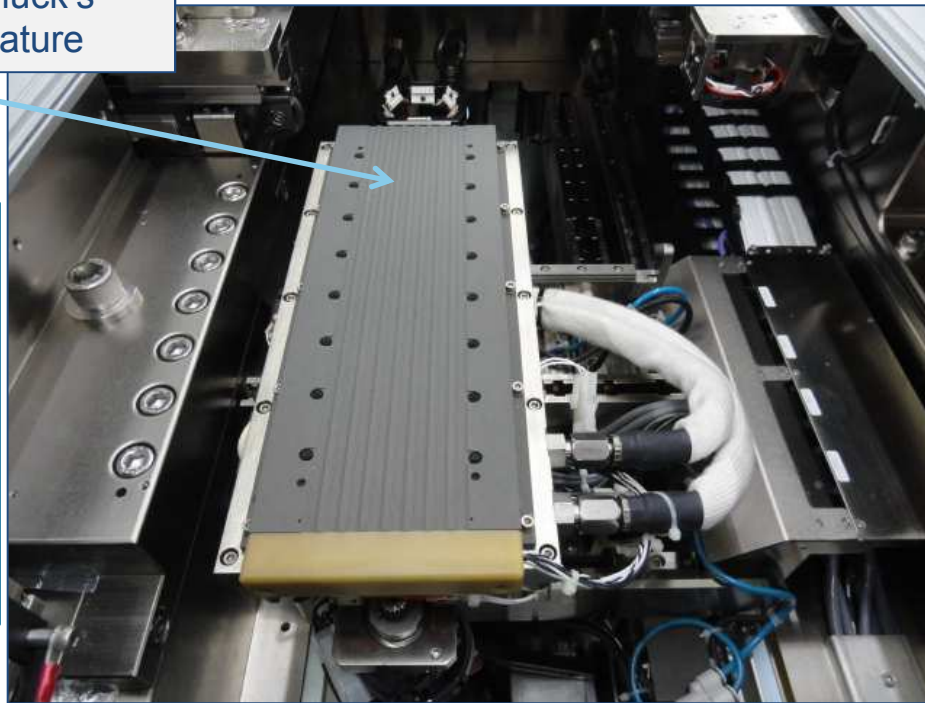
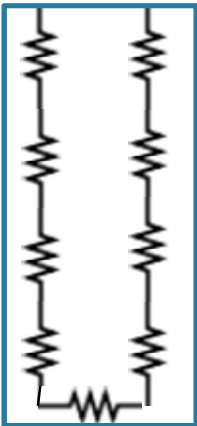
SHZ PSSO16 Assy&Test Flow



# PSSO Strip Test

How uniform temperature is ensured?

Resistance used to settle chuck's temperature



Tccf tool used to stabilize frame's temperature



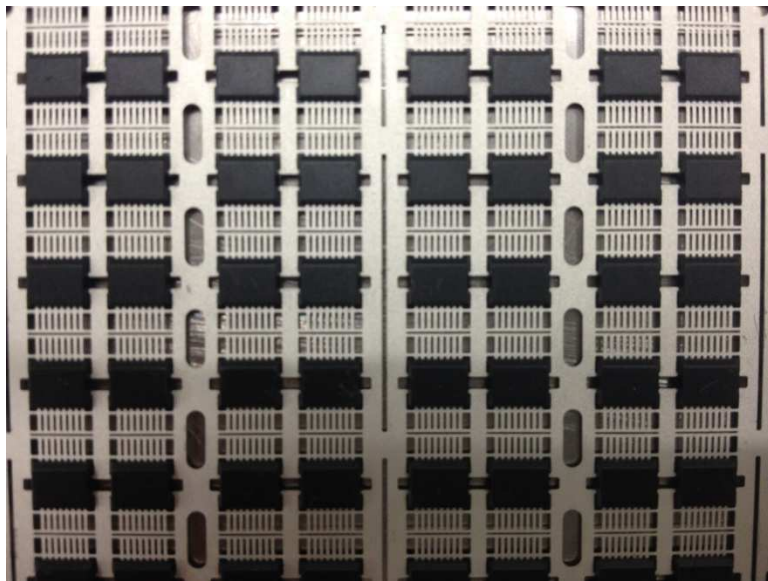
- Same concept used in EWS for the wafer.
- The frame is uniformly heated or cold down and the temperature is stable (T=130degC or T=-40degC)

# PSSO Strip Test

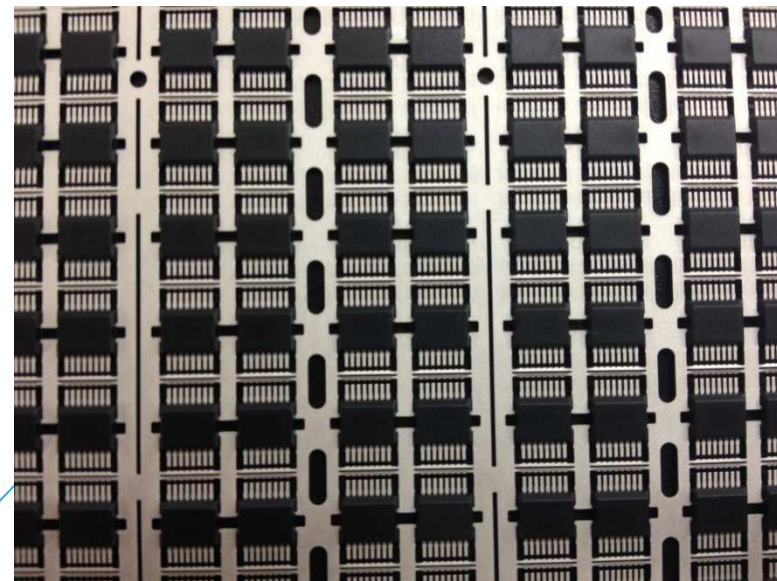
Leadframe before and after 1<sup>st</sup> crop

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BEFORE 1<sup>st</sup> CROP



AFTER 1<sup>st</sup> CROP



Dam-bar in between leads is cut during the 1<sup>st</sup> crop  
As consequence pins are singulated

# PSSO Strip Test

## Strip Jig/Contact

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Testing Jig



Contact Pogo Pin 32 sites



Test Head + Handler

- Pins are not clamped
- Contact Pogo Pins system is used