



Public Products List

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PCN Title : SO-16 Narrow (VIPower): Package Bill of Material Upgrade (All Ctms)

PCN Reference : ADG/22/13643

Subject : Public Products List

Dear Customer,

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

VNH7070ASTR	VNH7100BASTR	VNH7070BASTR
VN01TTTR	VNH5200ASTR-E	



IMPORTANT NOTICE – PLEASE READ CAREFULLY

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PRODUCT/PROCESS CHANGE NOTIFICATION

TITLE	SO-16 Narrow (VIPower): Package Bill of Material Upgrade (All Ctms)
IMPACTED PRODUCTS	See list
MANUFACT. STEP	Assembly
INVOLVED PLANT	Subcontractor UTAC - Thailand
CHANGE REASON	Capacity Increase
CHANGE DESCRIPTION	<p>On VIPower products housed in SO-16 Narrow in UTAC assembly plant will be implemented the below change of Bill of material:</p> <p>Current Standard Leadframe Molding Compound SUMITOMO G605-L</p> <p>New Ultra High Density (UHD) Leaframe Molding Compound SUMITOMO G633CB</p> <p>See below additional details</p>
TRACEABILITY	Dedicated Finished Good Codes
VALIDATION	Enclosed to this communication
REPORTS	13643 Validation.zip
IMPLEMENTATION	Upon Customer Agreement



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New BOM (Ultra High-Density Lead Frame and new Molding Compound) qualification for SOIC 16 Leads Narrow package in UTAC Thailand plant

Agenda

3 Change Description

4 ZVEI Guidelines

5 Bill Of Material Comparison

6/9 Lead frame comparison

10 Mold compound comparison

11 Selected Test Vehicles & Impacted products list

12 Conclusions

Change description

- Aim of this document is to describe the activity performed to qualify the new bill of material in UNITED TESTING AND ASSEMBLY CENTER (namely UTAC).
- The SOIC Narrow 16 Leads package is assembled in UTAC Thailand plant.
- Full qualification activity has been performed in order to qualify the new UTAC bill of material (ULTRA HIGH-DENSITY Lead frame for SOIC Narrow 16 Leads package with Lead frame size 100 x 300 mm with 360 Unit/strip and new SUMITOMO G633CB Molding Compound).
- The new materials are ensuring the same quality and electrical characteristics as the current products assembled using the current bill of material (Lead frame size 43 x 215 mm with 64 Unit/strip and the current SUMITOMO G605-L Molding Compound).

ZVEI Guidelines

- According to ZVEI recommendations, the notification is required.

For integrated circuits or discrete semiconductors select below:		AEC-Q100 Revision H								Evaluation level A / B / C		
		Hide Text										
		Values: Hide Rows		Values: Hide Columns								
		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								
Mark change <input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> SEM-PA-11	Change of mold compound / encapsulation material	P	P	Change of mold compound / encapsulation material.		e.g. change to green mold compound e.g. change of filler particles		C		
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> 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

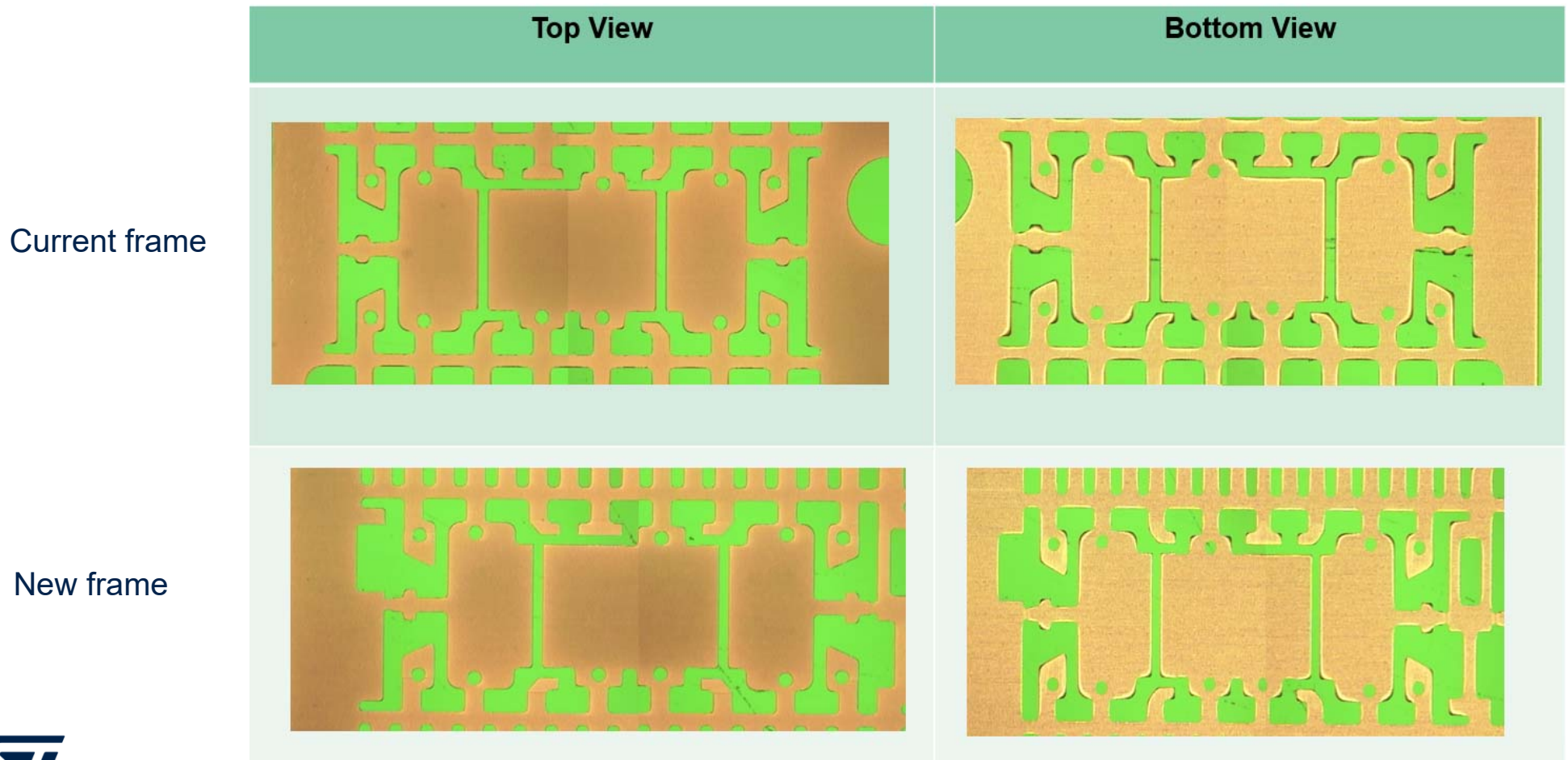
ITEM	MATERIAL
FRAME	SO16 Narrow
WIRE	1 MIL CU / 2 MILS CU / 2.5 MILS CU
DIE ATTACH	GLUE HENKEL QMI529HT-2A1
MOLD COMPOUND	RESIN SUMITOMO G605-L



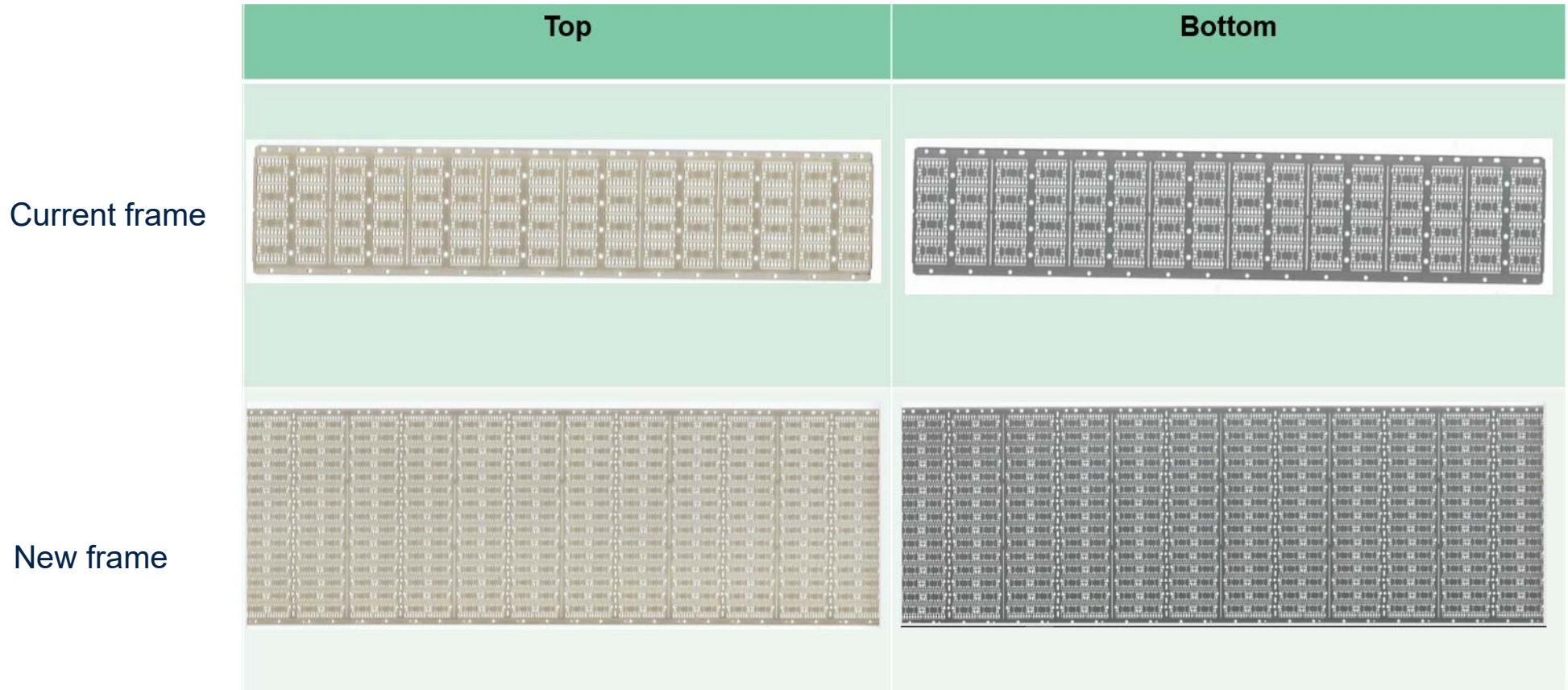
New Bill of Material

ITEM	MATERIAL
FRAME	SO16 Narrow UHD
WIRE	1 MIL CU / 2 MILS CU / 2.5 MILS CU
DIE ATTACH	GLUE HENKEL QMI529HT-2A1
MOLD COMPOUND	RESIN SUMITOMO G633CB

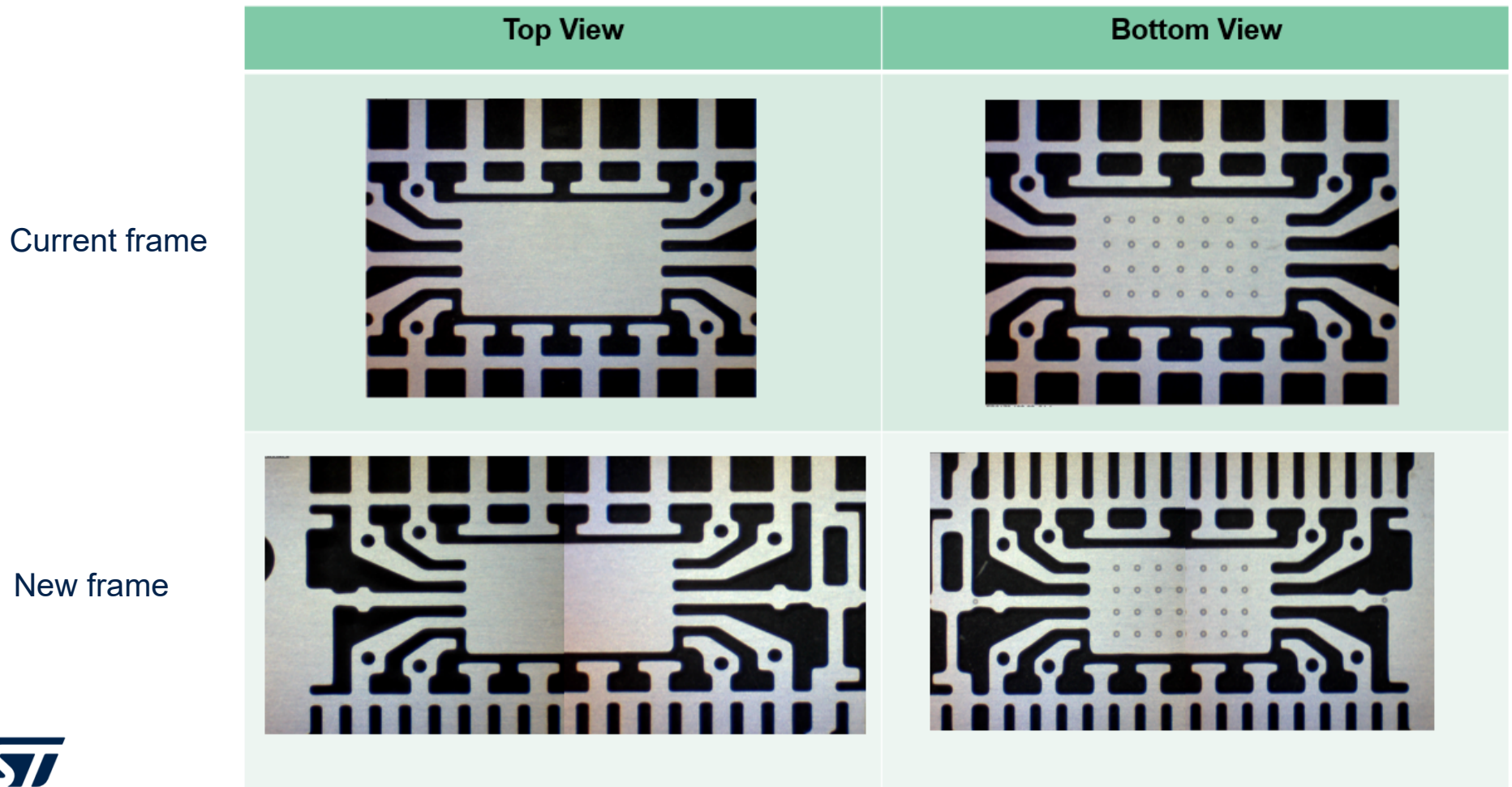
Lead frame comparison (VH46, VH70, VH71, VH73)



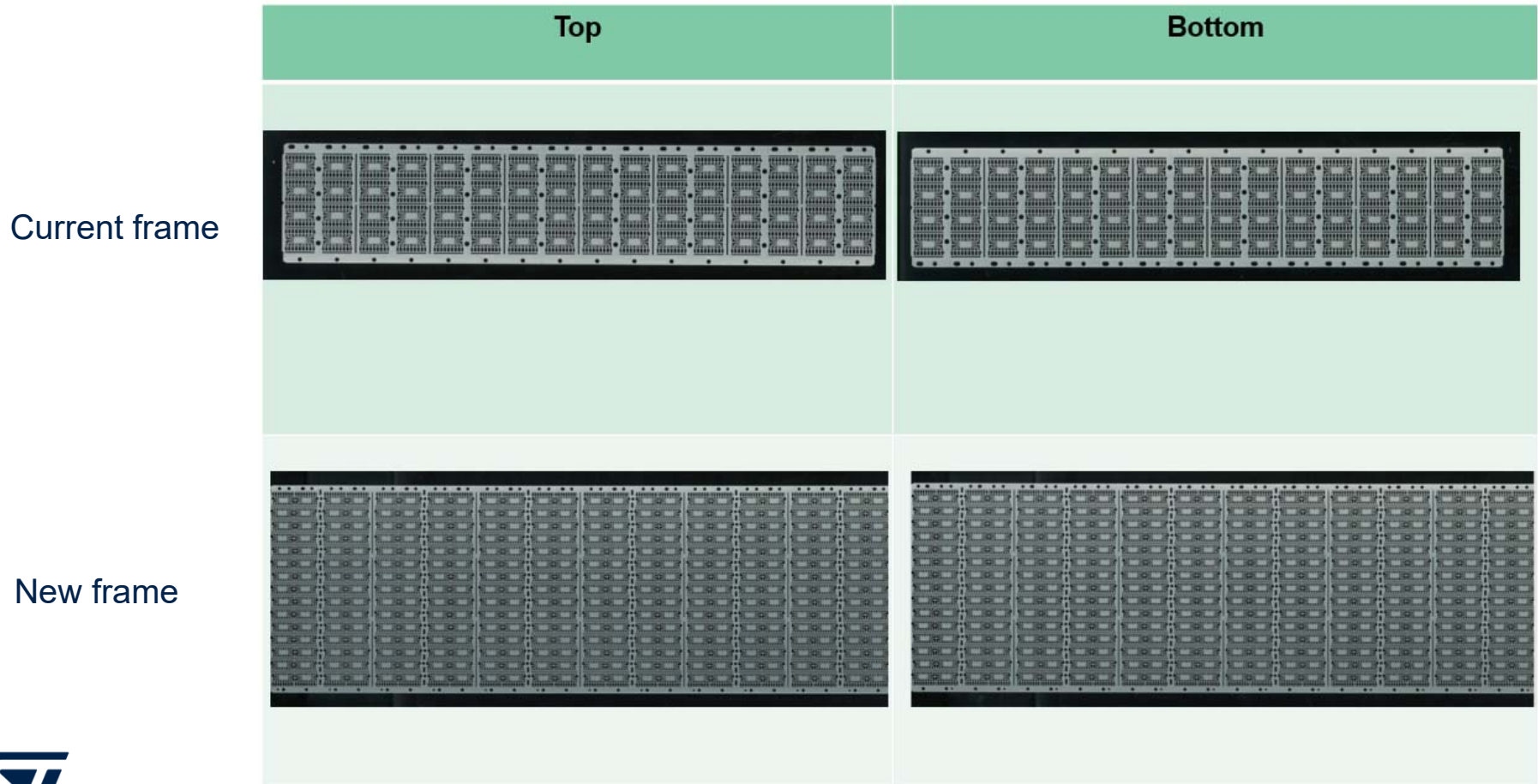
Lead frame comparison (VH46, VH70, VH71, VH73)



Lead frame comparison (VNE4)



Lead frame comparison (VNE4)



Mold compound comparison

Supplier		Sumitomo	Sumitomo
Commercial Part		G600	G633CB
Application		Non-QFN Pkg	Non-QFN Pkg
Strip size		Matrix LF	UHD LF
Commercial / Development		Commercial	Commercial
Formulation :			
Filler Type		Silica	Silica
Filler Content (%)		~86.5	~87.0
	Spherical / Flake (% / %)	100% Spherical	100% Spherical
Filler Sieved Size	Max (um)/ (%)	75 (sieved)	75 (sieved)
Typical Properties :			
Spiral flow (cm)		85	110
Gel time (sec)		25	30
Specific gravity		1.99	1.99
Tg (degC)		130	135
Thermal expansion -1 (ppm/degC)		10	9
Thermal expansion -2 (ppm/degC)		40	38
Flammability UL-94		V-0	V-0
Flexural strength	@ RT (N/mm ²)	185	160
	@ 260°C (N/mm ²)	21	13
Flexural modulus	@ RT (N/mm ²)	24000	25000
	@ 260°C (N/mm ²)	720	600

Selected Test Vehicles & Impacted products list

Test Vehicles:

- VNH5200ASTR-E
- VNH7100BASTR
- VND810PTR-E

ST silicon line

- VH4603
- VH7603
- VNE401

Impacted products:

- VNH5200ASTR-E
- VNH7070ASTR
- VNH7070BASTR
- VN01TTTR
- VNH7100BASTR
- VNH7110ASTR
- VND810PTR-E

ST silicon line

- VH4603
- VH7003
- VH7303
- VH7603
- VH7603
- VH7603
- VNE401

Conclusions

- Full qualification activity has been performed in STM in order to qualify the new bill of material for SOIC 16 Leads Narrow package in UTAC (Thailand).
- The new materials are ensuring the same quality and electrical characteristics as the current products assembled in SOIC 16 Leads Narrow.
- Electrical drift analysis and reliability report attached.