


**PRODUCT / PROCESS CHANGE NOTIFICATION**

**1. PCN basic data**

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	ADG/18/10614	
1.3 Title of PCN	SO-20 Products (U726,UH01,UH21,UH44,UR35): Migration to SO20 IDF (Inter Digit Frame) line with new BOM and matte Tin plating process	
1.4 Product Category	see list	
1.5 Issue date	2018-01-29	

**2. PCN Team**

<b>2.1 Contact supplier</b>	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
<b>2.2 Change responsibility</b>	
2.2.1 Product Manager	Vito GRAZIANO
2.1.2 Marketing Manager	Giovanni Luca TORRISI
2.1.3 Quality Manager	Francesco MINERVA

**3. Change**

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Materials	New direct material part number (same supplier, different supplier or new supplier), Lead frame base material	ST Muar (Malaysia)

**4. Description of change**

	Old	New
4.1 Description	Current Bill Of Material (see enclosed details)	New Bill Of Material (see enclosed details)
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No Impact	

**5. Reason / motivation for change**

5.1 Motivation	Company Road Map
5.2 Customer Benefit	SERVICE CONTINUITY

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

6.1 Description	Dedicated Finished Good Codes
-----------------	-------------------------------

**7. Timing / schedule**

7.1 Date of qualification results	2017-12-06
7.2 Intended start of delivery	2018-06-15
7.3 Qualification sample available?	Upon Request

**8. Qualification / Validation**

8.1 Description	10614 Validation S020IDF.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2018-01-29

**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
	L4979MD	
	L4993MDTR	
	L9997ND	

## **IMPORTANT NOTICE – PLEASE READ CAREFULLY**

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2016 STMicroelectronics – All rights reserved



## SO-20 Products (U726,UH01,UH21,UH44,UR35): Migration to SO20 IDF (Inter Digit Frame)

### line with new BOM and matte Tin plating process

#### What:

Please be informed that we are going to migrate SO-20 Products (U726,UH01,UH21,UH44,UR35 silicon lines) to IDF (Inter Digit Frame) line with new Bill of Materials (BOM). Together with new BOM introduction, we are going to move from Non-Plating Process (PPF Leadframe) to a matte Tin Plating Process

#### Why:

Company Road Map

#### Who:

Silicon line	Finished Good	Product
U726	L9997ND-JLF/	L9997ND
UH01	L4979MDTR-L-LF/	L4979MD013TR
UH01	L4979MD-S-LF/	L4979MD
UH01	L4979MD-S-LF/	L4979MD013TR
UH21	L4989MDTR-S-JLF	L4989MD013TR
UH44	L4993MDTR-S-LF	L4993MDTR
UR35	L4969URD-LF/	L4969URD-E

#### When:

Validation Report included in this communication.

Change will be implemented upon Customer agreement

Current Finished Good codes (Current BOM) will be Terminated according to this schedule:

Last Order Entry : June 2018

Last Order Delivery: December 2018

#### Where:

ST Muar (Malaysia)



# SO20 IDF project

- Migration to IDF line and new BOM introduction
- From Pre-Plated Frame (PPF) to Matte Tin Plating Process

October, 2017

# Change description

Migration from SO20 Matrix to High Density Line IDF (Inter Digit Frame)

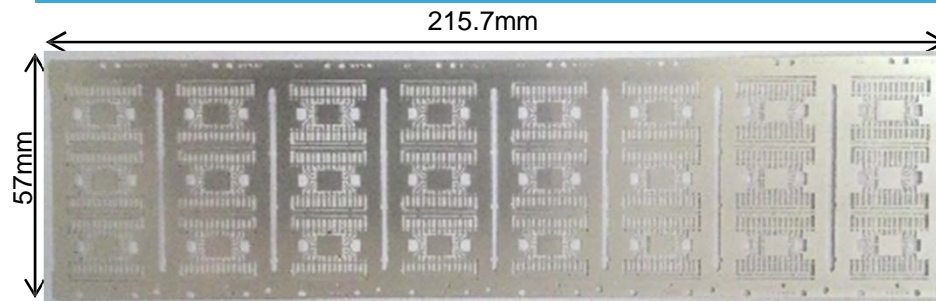
## New Bill of Material (BOM)

- Copper frame (SpAg/RgAg/SelAg) with ME2 treatment for rough surface
- Copper wire bonding
- Resin Sumitomo EME-G633CA
- Glue Loctite Ablestik ABP8302

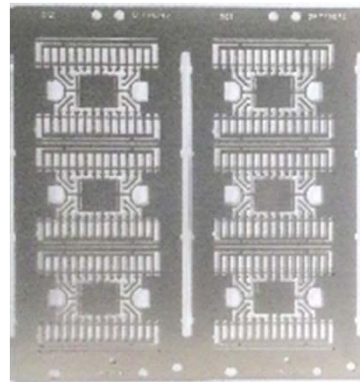
Matte Tin plating process introduction

# SO20 IDF Line

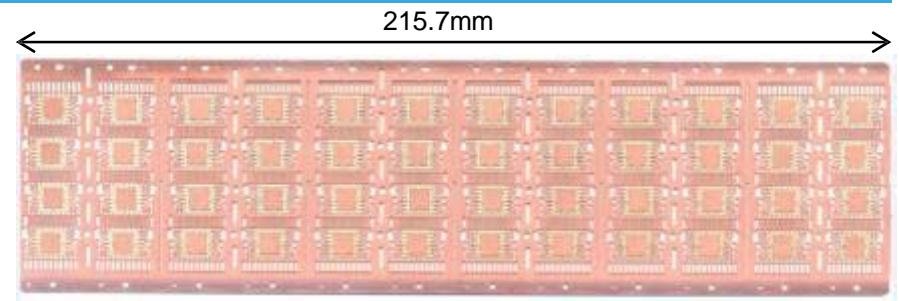
**SO20 Matrix**



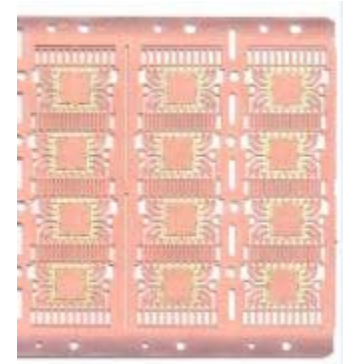
Matrix Leadframe  
3row x 8columns  
**24units**



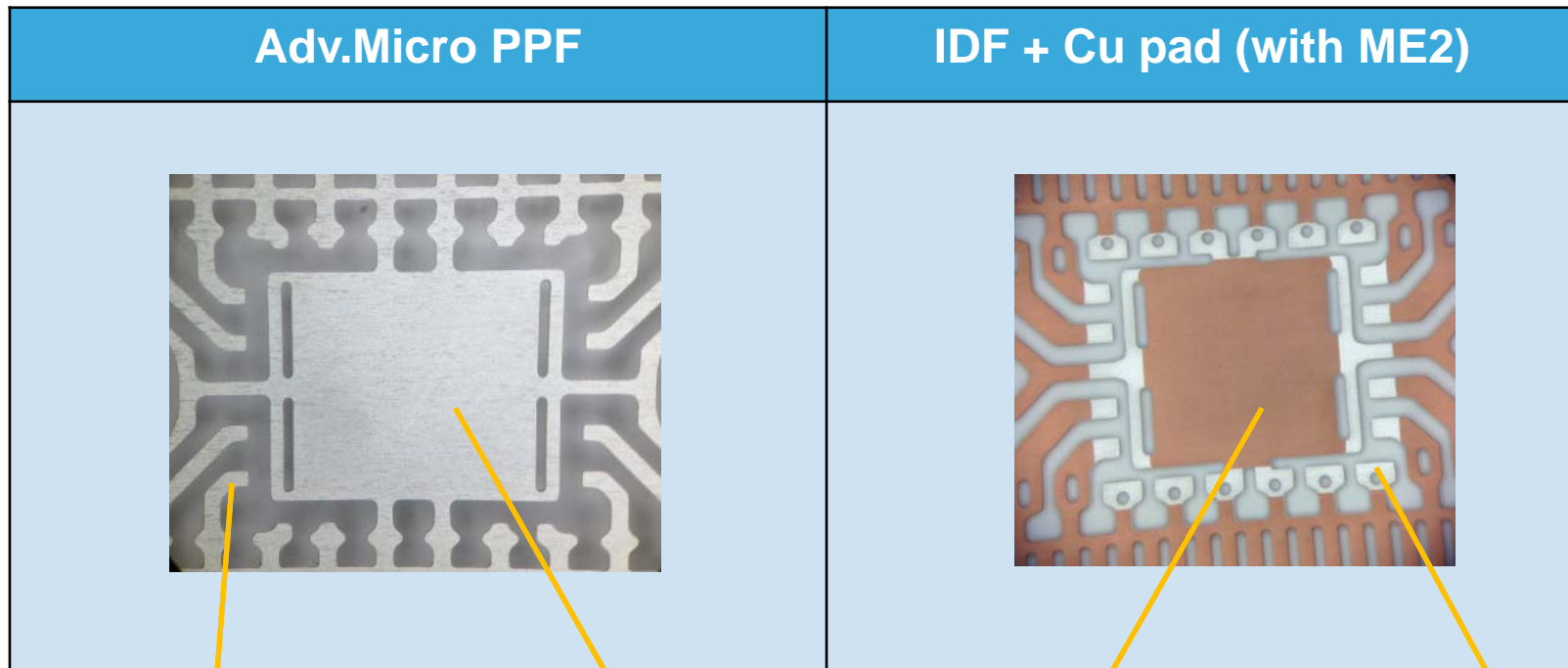
**SO20 Inter Digit Frame (IDF)**



IDF Leadframe  
4row x 12columns  
**48units**



# Existing frame vs ME2

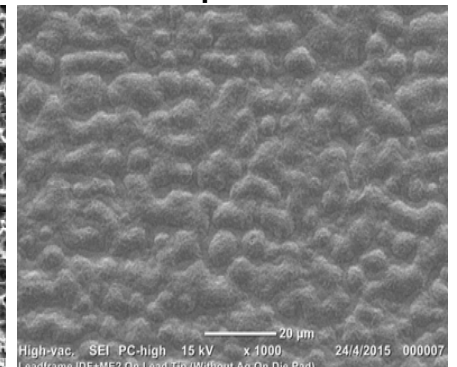
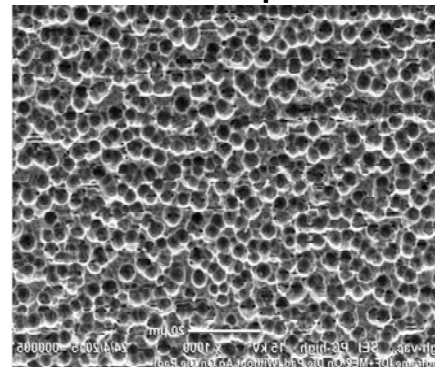
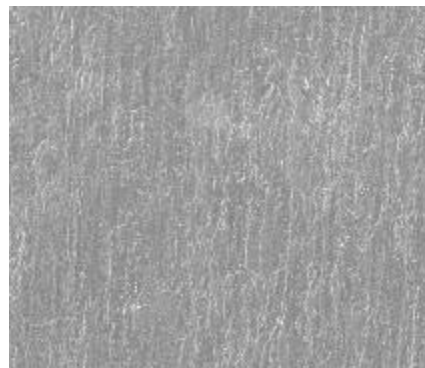


Lead tip

On die pad

On die pad

Lead tip



**SEM images**

[ Note: SEM Mag 1000X]



# BOM comparison

## Product Line: U726

Current Bill of Material	
ITEM	MATERIAL
WIRE	GOLD D2 MIL
RESIN	SUMITOMO EME7026
GLUE	HITACHI EN4900
FRAME	FRAME SO 20L 157x160 Btw12+4+4 uAdvPPF



New Bill of Material	
ITEM	MATERIAL
WIRE	COPPER D2.0 MIL
RESIN	SUMITOMO EME-G633CA
GLUE	LOCTITE ABLESTIK ABP8302
FRAME	FRAME SO 20L 140x165 Btw OpE V2 RgAg+ME2

## Product Lines: UH44

Current Bill of Material	
ITEM	MATERIAL
WIRE	GOLD D1.3 MIL
RESIN	SUMITOMO EME7026
GLUE	HITACHI EN4900
FRAME	FRAME SO 20L 157x160 Btw12+4+4 NiPdAu



New Bill of Material	
ITEM	MATERIAL
WIRE	COPPER D1.2 MIL
RESIN	SUMITOMO EME-G633CA
GLUE	LOCTITE ABLESTIK ABP8302
FRAME	SO 20L 140x165 Flo OpC V2 RgAg+ME2

# BOM comparison

## Product Line: UH0%#I < &%

Current Bill of Material	
ITEM	MATERIAL
WIRE	GOLD 1.3 MIL
RESIN	SUMITOMO EME7026
GLUE	HITACHI EN4900
FRAME	FRAME SO 20L 157x160 Btw16+2+2 NiPdAu



New Bill of Material	
ITEM	MATERIAL
WIRE	COPPER D1.2 MIL
RESIN	SUMITOMO EME-G633CA
GLUE	LOCTITE ABLESTIK ABP8302
FRAME	FRAME SO 20L 100x125 Btw OpB V2 RgAg+ME2

## Product Lines: UR35

Current Bill of Material	
ITEM	MATERIAL
WIRE	WIRE Au D1.5
RESIN	SUMITOMO EME7026
GLUE	HITACHI EN4900
FRAME	FRAME SO 20L 195x250 Btw16+2+2 OpBNiPdAu



New Bill of Material	
ITEM	MATERIAL
WIRE	COPPER D2 MIL
RESIN	SUMITOMO EME-G633CA
GLUE	LOCTITE ABLESTIK ABP8302
FRAME	FRAME SO 20L 200x230 Btw OpG V1 SpAg+ME2

# Leadframe Comparison

ITEM	EXISTING	NEW
Frame size	(215.7 x 57 mm)	(215.7 x 57 mm)
Units/Strip	24	48
Pad size	see below table	see(below table
Surface treatment	No	ME2
Inner Lead Plating	Adv $\mu$ PPF (NiPdAuAg)	Spot Ag <sup>..</sup> Ring Ag <sup>..</sup>
Frame base material	C194	C194
Frame process	Etched	Stamped
Plating	Adv $\mu$ PPF (NiPdAuAg)	Sn
Leadframe Supplier	DCI	ASM

Á  
Á



**ME2: Micro Etching Version 2**