

PRODUCT / PROCESS CHANGE NOTIFICATION	
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1. PCN basic data	
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1.1 Company		STMicroelectronics International N.V
1.2 PCN No.		ADG/21/12896
1.3 Title of PCN		Transfer of Assembly and Test manufacturing activity for Rectifiers housed in PowerFlat 3.3 x 3.3 package at subcontractor in China
1.4 Product Category		Power Schottky in PowerFlat 3.3 x 3.3 package
1.5 Issue date		2021-07-10

2. PCN Team	
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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	Stephane CHAMARD
2.1.2 Marketing Manager	Philippe LEGER
2.1.3 Quality Manager	Jean-Paul REBRASSE

3. Change		
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3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Transfer	Product transfer from one site to another site, even if test or process line is qualified	Subcontractor in Philippines and subcontractor in China

4. Description of change		
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	Old	New
4.1 Description	Assembly and Test at Subcontractor in Philippines	Assembly and Test at Subcontractor in China
4.2 Anticipated Impact on form, fit, function, quality, reliability or processability?	No	

5. Reason / motivation for change	
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5.1 Motivation	In the frame of the activity closure at one subcontractor in Philippines, ST has initiated a transfer of Rectifiers in PowerFlat 3.3 x 3.3 package to a subcontractor in China. Subcontractor in China is already a major production site for ST products in various packages, including all diodes technologies (Power Schottky, Ultrafast, Bipolar, AFER). Ribbon bonding is replaced by Clip bonding to use standard and qualified process at subcontractor in China. Former subcontractor line closure in Philippines is scheduled in 30-September-2021.
5.2 Customer Benefit	SERVICE CONTINUITY

6. Marking of parts / traceability of change	
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6.1 Description	Finished Good, device top marking and trace code
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7. Timing / schedule	
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7.1 Date of qualification results	2021-08-16
7.2 Intended start of delivery	2021-10-21
7.3 Qualification sample available?	Not Applicable

8. Qualification / Validation		
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8.1 Description		
8.2 Qualification report and qualification results	In progress	Issue Date

9. Attachments (additional documentations)

12896 Public product.pdf
12896 PCN transfer PowerFlat 3.3x3.3.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
	STPS1045DEE-TR	
	STPS6M100DEE-TR	
	STPS8170DEE-TR	
	STPS8H100DEE-TR	
	STPS8L30DEE-TR	

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PCN

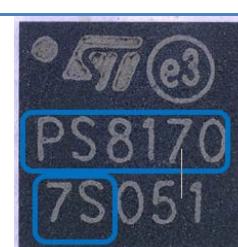
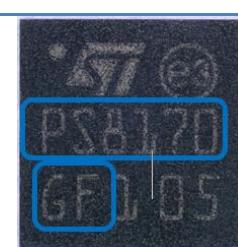
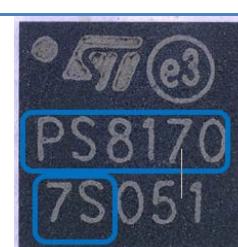
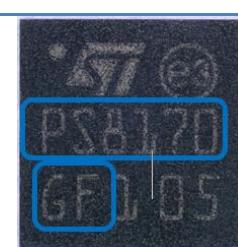
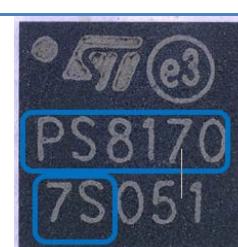
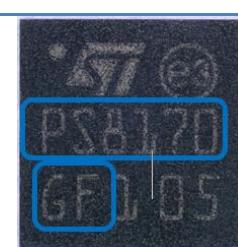
Product/Process Change Notification

Transfer of Assembly and Test manufacturing activity

for Rectifiers housed in PowerFlat 3.3 x 3.3 package at subcontractor in China

Notification number:	ADG/21/12896	Issue Date	09-Jul-2021		
Issued by	Isabelle Ballon				
Product series affected by the change	STPS1045DEE-TR STPS6M100DEE-TR STPS8H100DEE-TR STPS8L30DEE-TR STPS8170DEE-TR Specific devices not expressly listed above are included in this change.				
Type of change	Back-End realization				
Description of the change	Transfer to subcontractor in China.				
Reason for change	<p>In the frame of the activity closure at one subcontractor in Philippines, ST has initiated a transfer of Rectifiers in PowerFlat 3.3 x 3.3 package to a subcontractor in China.</p> <p>Subcontractor in China is already a major production site for ST products in various packages, including all diodes technologies (Power Schottky, Ultrafast, Bipolar, AFER).</p> <p>Ribbon bonding is replaced by Clip bonding to use standard and qualified process at subcontractor in China.</p> <p>Former subcontractor line closure in Philippines is scheduled in 30-September-2021.</p>				
Former versus changed product:	<p>The changed products do not present modified electrical or thermal parameters, leaving unchanged the current information published in the product datasheet.</p> <p>Slight modification of dimensions for exposed pad, leads, tie-bar and package height. For details, please refer to qualification report enclosed at the end of document.</p> <p>The footprint recommended by ST remains the same.</p> <p>The Moisture Sensitivity Level of the part (according to the IPC/JEDEC JSTD-020D standard) remains unchanged.</p> <p>There is no change in the packing modes and the standard</p>				

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	<p>delivery quantities either.</p> <p>The products remain in full compliance with the ST ECOPACK®2 grade ("halogen-free").</p>				
Disposition of former products					
Units manufactured at subcontractor in Philippines will be delivered till stock depletion.					
Marking and traceability					
<p>Traceability of the Back End plant will be ensured by an internal codification (Finished Good) and by the trace code (printed on device top side and on the carton box label).</p> <p>The two first digits of the trace code indicate the back-end plant origin.</p>					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4682B4; color: white; padding: 5px;">Current Finished Good/Type (Subcontractor in Philippines)</th> <th style="background-color: #4682B4; color: white; padding: 5px;">New Finished Good/Type (Subcontractor in China)</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Ending by S</td> <td style="padding: 5px;">Ending by B</td> </tr> </tbody> </table>	Current Finished Good/Type (Subcontractor in Philippines)	New Finished Good/Type (Subcontractor in China)	Ending by S	Ending by B	
Current Finished Good/Type (Subcontractor in Philippines)	New Finished Good/Type (Subcontractor in China)				
Ending by S	Ending by B				
Refer to examples here below:					
<p>Labels example for STPS6M100DEE-TR</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4682B4; color: white; padding: 5px;">Subcontractor in Philippines</th> <th style="background-color: #4682B4; color: white; padding: 5px;">Subcontractor in China</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> <p>Current Finished Good/Type: STPS6M100DEETR%S</p> <p>Trace code: 2 first digits: 7S</p> <p>Current Label</p>  </td> <td style="padding: 5px;"> <p>New Finished Good/Type: PS6M100DEETR%B</p> <p>Trace code : 2 first digits: GF</p> <p>New Label</p>  </td> </tr> </tbody> </table>		Subcontractor in Philippines	Subcontractor in China	<p>Current Finished Good/Type: STPS6M100DEETR%S</p> <p>Trace code: 2 first digits: 7S</p> <p>Current Label</p> 	<p>New Finished Good/Type: PS6M100DEETR%B</p> <p>Trace code : 2 first digits: GF</p> <p>New Label</p> 
Subcontractor in Philippines	Subcontractor in China				
<p>Current Finished Good/Type: STPS6M100DEETR%S</p> <p>Trace code: 2 first digits: 7S</p> <p>Current Label</p> 	<p>New Finished Good/Type: PS6M100DEETR%B</p> <p>Trace code : 2 first digits: GF</p> <p>New Label</p> 				
<p>Device Top marking (example for STPS STPS8170DEE-TR)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4682B4; color: white; padding: 5px;">Subcontractor in Philippines</th> <th style="background-color: #4682B4; color: white; padding: 5px;">Subcontractor in China</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">  <p>7S for subcontractor in Philippines</p> </td> <td style="padding: 5px;">  <p>GF for subcontractor in China</p> </td> </tr> </tbody> </table>		Subcontractor in Philippines	Subcontractor in China	 <p>7S for subcontractor in Philippines</p>	 <p>GF for subcontractor in China</p>
Subcontractor in Philippines	Subcontractor in China				
 <p>7S for subcontractor in Philippines</p>	 <p>GF for subcontractor in China</p>				
Qualification complete date	Week 33-2021				

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Forecasted sample availability

Product family	Sub-family	Commercial part Number	Availability date
Rectifiers	Power Schottky	STPS1045DEE-TR	Week 29-2021
Rectifiers	Power Schottky	STPS6M100DEE-TR	Week 29-2021
Rectifiers	Power Schottky	STPS8H100DEE-TR	Week 29-2021
Rectifiers	Power Schottky	STPS8L30DEE-TR	Week 29-2021
Rectifiers	Power Schottky	STPS8170DEE-TR	Week 29-2021

Specific devices not expressly listed above are included in sampling plan with same availability date.

Change implementation schedule

Sales-types	Estimated production start	Estimated first shipments
All	Week 36-2021	Week 42-2021

Comments:

Customer's feedback

Please contact your local ST sales representative or quality contact for requests concerning this change notification.

Absence of acknowledgement of this PCN within 30 days of receipt will constitute acceptance of the change
 Absence of additional response within 90 days of receipt of this PCN will constitute acceptance of the change

Qualification program and results	Preliminary results: 21018QRP attached Final version availability: week 34-2021
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Qualification Report

*Transfer of Assembly & Test manufacturing plant
for Power Schottky diodes housed in PowerFLAT
(3.3 x 3.3) package*

General Information		Locations	
Product Line	Rectifiers	Wafer fab	ST SINGAPORE
Product Description	Power Schottky rectifiers	Assembly plants	Subcontractor 998G – CHINA,
Product perimeter	STPS6M100DEE-TR, STPS8170DEE-TR, STPS8L30DEE-TR, STPS8H100DEE-TR, STPS1045DEE-TR	Reliability Lab	ST TOURS - FRANCE
Product Group	ADG	Reliability assessment	In progress
Product division	Discrete & Filter		
Package	PowerFLAT (3.3 x 3.3)		
Maturity level step	Under qualification		

DOCUMENT INFORMATION

Version	Date	Pages	Prepared by	Approved by	Comments
1.0	09-July-2021	13	Christophe GOIN	Julien MICHELON	Initial release Reliability assessment in progress

Note: This report is a summary of the reliability trials performed in good faith by STMicroelectronics in order to evaluate the potential reliability risks during the product life using a set of defined test methods.

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1 APPLICABLE AND REFERENCE DOCUMENTS

Document reference	Short description
JESD 47	Stress-Test-Driven Qualification of Integrated Circuits
JESD 94	Application specific qualification using knowledge based test methodology
JESD 22	Reliability test methods for packaged devices
MIL-STD-750C	Test method for semiconductor devices
AEC-Q005	Pb-Free Test Requirements

2 GLOSSARY

SS	Sample Size
PC	Pre-Conditioning
HTRB	High Temperature Reverse Bias
TC	Temperature Cycling
H3TRB	High Humidity High Temperature Reverse Bias
IOLT	Intermittent Operating Life Test
UHAST	Unbiased Highly Accelerated Stress Test
DPA	Destructive Physical Analysis (after TC and THB)
GD	Generic Data
SD	Solderability test
RSH	Resistance to Soldering Heat

3 RELIABILITY EVALUATION OVERVIEW

3.1 Objectives

The objective of this report is to qualify Power Schottky diodes housed in PowerFLAT (3.3x3.3) package, in ST Subcontractor in China.

The involved products are listed in the table here below:

Products	Product Family	Package	Assembly Locations
STPS6M100DEE-TR	POWER SCHOTTKY	PowerFLAT (3.3x3.3)	Subcontractor – CHINA (998G)
STPS8170DEE-TR			
STPS8L30DEE-TR			
STPS8H100DEE-TR			
STPS1045DEE-TR			

The reliability test methodology used follows the JESD47: « Stress Test riven Qualification Methodology ».

The following reliability tests ensuing are:

- TC and IOLT to ensure the mechanical robustness of the products.
- HTRB to evaluate the risk of contamination from the resin and the assembly process versus the die layout sensitivity.
- H3TRB, UHAST to check the robustness to corrosion and the good package hermeticity.
- RSH and Solderability to check compatibility of package with customer assembly.

For some tests, similarity methodology is used. See 5.1 “comments” for more details about similarities.

3.2 Conclusion

Qualification Plan in progress.

4 DEVICE CHARACTERISTICS

4.1 Device description

Refer to products datasheets. Example here below for STPS6M100DEE product:

STPS6M100DEE

High voltage power Schottky rectifier

Datasheet – production data

Features

- Negligible switching losses
- Extremely fast switching
- Low thermal resistance
- High junction temperature capability
- ECOPACK®2 compliant component

Description

This Schottky rectifier is designed for switch mode power supply and high frequency DC to DC converters.

Packaged in PowerFLAT™, this device is intended for use in low voltage, high frequency, inverters, free-wheeling, by-pass diode and polarity protection applications. Its low profile was especially designed to be used in applications with space-saving constraints.

**PowerFLAT (3.3 x 3.3)
STPS6M100DEE-TR**

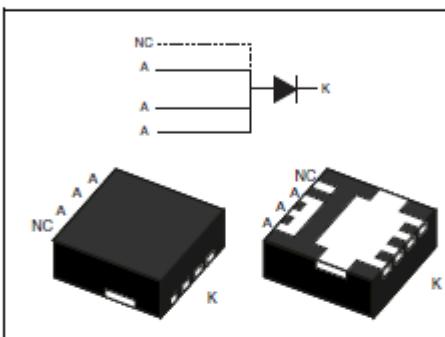


Table 1. Device summary

Symbol	Value
$I_{F(AV)}$	6 A
V_{RRM}	100 V
T_j (max)	150 °C
V_F (typ)	0.64 V

4.2 Construction Note

STPS6M100DEE-TR / STPS8170DEE-TR / STPS8L30DEE-TR / STPS8H100DEE-TR / STPS1045DEE-TR	
Wafer/Die fab. information	
Wafer fab manufacturing location	ST SINGAPORE
Technology / Process family	Power Schottky Rectifier
Wafer Testing (EWS) information	
Electrical testing manufacturing location	ST SINGAPORE
Assembly information	
Assembly sites	Subcontractor 998G – CHINA
Package description	PowerFLAT (3.3x3.3)
Molding compound	ECOPACK®2 (“Halogen-free”)
Lead finishing material	Lead free (pure Tin)
Final testing information	
Testing location	Subcontractor 998G – CHINA

5 TESTS PLAN AND RESULTS SUMMARY

5.1 Test vehicles

Lot #	Part Number	Package	Comments
L1	STPS6M100DEE-TR	PowerFLAT (3.3x3.3)	Qualification 1
L2	STPS8L30DEE-TR	PowerFLAT (3.3x3.3)	Qualification 2
L3	STPS8170DEE-TR	PowerFLAT (3.3x3.3)	Qualification 3
L4	STPS6M100DEE-TR	PowerFLAT (3.3x3.3)	Qualification 4

Detailed results in below chapter will refer to these references.

5.2 Test plan

Stress	Abrv	Reference	Lot	SS	Comments	Test plan
Pre and Post-Stress Electrical Test	TEST	User specification or supplier's standard Specification	All qualification parts tested per the requirements of the appropriate device specification.			x
Pre-conditioning	PC	JESD22A-113	All qualification parts tested per the requirements of the appropriate device specification.		As per targeted MSL	x
MSL research	MSL	J-STD-020	L3	30		x
External Visual	EV	JESD22B-101	All qualification parts tested per the requirements of the appropriate device specification.		Done during Assembly → Test & Finish inspection	x
Parametric Verification	PV	User specification	All qualification parts tested per the requirements of the appropriate device specification.			x
High Temperature Storage Life	HTSL	JESD22B-101			Covered by HTRB	
Temperature Humidity Storage	THS	JESD22 A-118			Covered by H3TRB	
High Temperature Gate Bias	HTGB	JESD22A-108			Required for PowerMOSFET – IGBT only.	
High Temperature Reverse Bias	HTRB	JESD22A-108	L1, L3, L4	77, 77, 77		x
High Temperature Forward Bias	HTFB	JESD22A-108			Not required, applicable only to LEDs	
High Temperature Operating Life Test	HTOL	JESD22A-108			Covered by HTRB.	
Steady State Operational	SSOP	MIL-STD-750-1 M1038 Test condition B			Required for Voltage Regulator (Zener) only.	
AC blocking voltage	ACBV	MIL-STD-750-1 M1040 Test condition A			Required for Thyristor only.	
Temperature Cycling	TC	JESD22A-104	L1, L2, L3	77, 77, 77		x
Temperature Cycling Hot Test	TCHT	JESD22A-104			Required for PowerMOSFET – IGBT only.	
Temperature Cycling Delamination Test	TCDT	JESD22A-104 J-STD-035			Required for PowerMOSFET – IGBT only.	
Wire Bond Integrity	WBI	MIL-STD-750 Method 2037			For dissimilar metal bonding systems only	
Unbiased Highly Accelerated Stress Test	UHAST	JESD22A-118	L1, L2, L3	77, 77, 77		x
Autoclave	AC	JESD22A-102			Not recommended	
Highly Accelerated Stress Test	HAST	JESD22A-110			Covered by H3TRB	

High Humidity High Temperature Reverse Bias	H3TRB	JESD22A-101	L3	77		X
Intermittent Operational Life / Thermal Fatigue	IOL / TF	MIL-STD-750 Method 1037	L3	77	For power devices.	X
Power and Temperature Cycle	PTC	JED22A-105			Covered by IOL	
Physical Dimension	PD	JESD22B-100		30		X
Terminal Strength	TS	MIL-STD-750 Method 2036			Required for leaded parts only	
Resistance to Solvents	RTS	JESD22B-107			Not applicable for Laser Marking	
Constant Acceleration	CA	MIL-STD-750 Method 2006			Required for hermetic packaged parts only.	
Vibration Variable Frequency	VVF	JESD22B-103			Required for hermetic packaged parts only.	
Mechanical Shock	MS	JESD22 B-104			Required for hermetic packaged parts only.	
Hermeticity	HER	JESD22A-109			Required for hermetic packaged parts only.	
Resistance to Solder Heat	RSH	JESD22 A-111 (SMD) B-106 (PTH)			Not applicable for SMD pitch < 0.5mm, package size > 5.5*12.5mm and die paddle > 2.5*3.5mm	
Solderability	SD	J-STD-002 JESD22B102	L1, L2, L3	116		X
Thermal Resistance	TR	JESD24-3, 24-4, 24-6 as appropriate			Required in case of process change.	
Wire Bond Strength	WBS	MIL-STD-750 Method 2037			Not applicable	
Bond Shear	BS	AEC-Q101-003			Not applicable	
Die Shear	DS	MIL-STD-750 Method 2017			Not Applicable to parts with solder paste die attach	
Whisker Growth Evaluation	WG	AEC-Q005 JESD201			Not applicable for QFN, BGA, Flip Chip	
Early Life Failure Rate	ELFR	JESD74			Recommended for new techno development in case of identified failure mechanism	

5.3 Test results summary

Test	PC	Std ref.	Conditions	Total	Steps	Results/Lot Fail/S.S.				
						L1	L2	L3	L4	
Pre and Post Electrical Test			I_R , V_F parameters following product datasheet	877	-	W29-2021				
External Visual Inspection		JESD22 B-101	-	1694	-	All qualification parts submitted for testing passed External & Visual inspection during manufacturing process				
Parametric Verifications		ST datasheet	Over part temperature range	90	-	Refer to 6.1 in Annexes				
Physical dimensions		JESD22B-100		30	-	Refer to 6.3 in Annexes				
MSL1 research	N	JESD22 A-113	MSL=1 Reflow=3 Temperature=85°C Humidity (HR)=85%	30	-			0/30		
HTRB	N	JESD22-A108/MIL-STD-750-1 M1038 Method A	Junction Temperature*=80°C Voltage=100V	154	168h	0/77			0/77	
				154	500h	0/77			0/77	
				154	1000h	W29-2021				W29-2021
HTRB	N	JESD22-A108/MIL-STD-750-1 M1038 Method A	Junction Temperature*=95°C Voltage=170V	77	168h			0/77		
				77	500h			0/77		
				77	1000h			0/77		
TC	Y	JESD22-A104	Frequency (cy/h)=2cy/h Temperature (high)=150°C Temperature (low)=-65°C	231	500cy	0/77	0/77	0/77		
H3TRB	Y	JESD22-A101	Humidity (HR)=85% Temperature=85°C Voltage=100V	77	1000h			0/77		
uHAST	Y	JESD22A-118	Humidity (HR)=85% Pressure=2.3bar Temperature=130°C	231	96h	0/77	0/77	0/77		
IOLT	Y	MIL-STD 750 Method 1037	Delta T_j =100°C Current (If)=1.8A Time (off)=120s Time (on)=120s	77	500h			0/77		
				77	1000h				W28-2021	
SD	Y	J-STD-002 JESD22 B-102	Wet ageing SnPb bath 220°C	29	-	0/29				
			Dry ageing SnPb bath 220°C	29	-	0/29				
			Wet ageing SnAgCu bath 245°C	29	-	0/29				
			Dry ageing SnAgCu bath 245°C	29	-	0/29				

* Maximum Junction temperature before thermal runaway

6 ANNEXES

6.1 Parametric Verifications and comparison

Measurements on 3 lots of STPS6M100DEE product from new subcontractor in China:

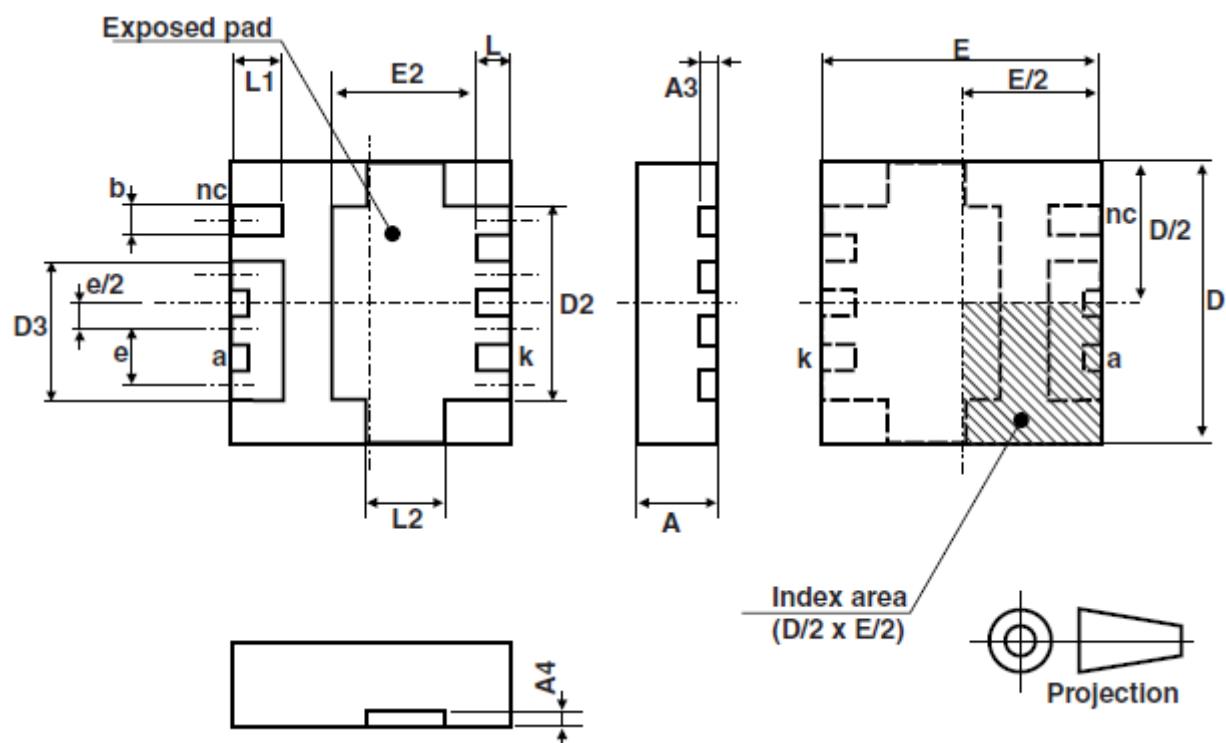
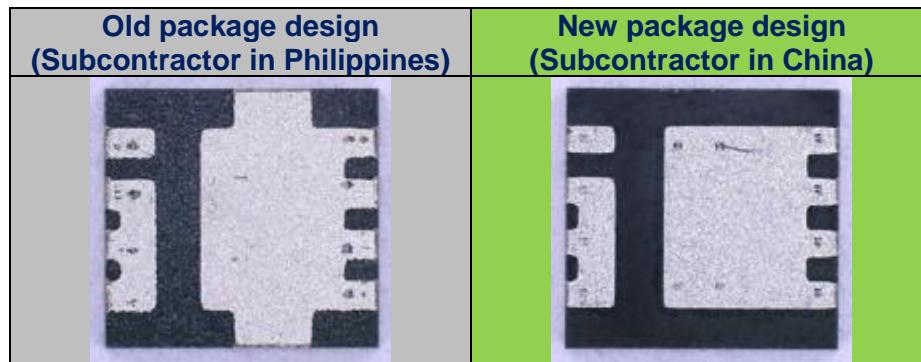
TEST	VBR	IR	VF	IR	VF	RTH(J-C)
EQUIPMENT	TESEC_881TT_TEST292					MESU1150
Condition 1	25°C	25°C	25°C	125°C	125°C	
Condition 2		VR=100V	IF=6A	VR=100V	IF=6A	
Min. Datasheet	100V					
Typ. Datasheet				5mA	0.58V	
Max. Datasheet		30uA	0.78V	15mA	0.64V	4°C/W
UNIT	V	uA	V	mA	V	°C/W
N	90	90	90	90	90	15
Min	120.400	6.291	0.681	5.507	0.554	1.821
Max	127.000	10.500	0.709	8.341	0.565	2.058
Avg	124.882	8.742	0.698	6.870	0.561	1.948

Measurements on 1 lot of STPS6M100DEE product from old subcontractor in Philippines:

TEST	VBR	IR	VF	IR	VF	RTH(J-C)
EQUIPMENT	TESEC_881TT_TEST292					MESU1150
Condition 1	25°C	25°C	25°C	125°C	125°C	
Condition 2		VR=100V	IF=6A	VR=100V	IF=6A	
Min. Datasheet	100V					
Typ. Datasheet				5mA	0.58V	
Max. Datasheet		30uA	0.78V	15mA	0.64V	4°C/W
UNIT	V	uA	V	mA	V	°C/W
N	30	30	30	30	30	5
Min	121.900	0.817	0.692	1.355	0.559	1.825
Max	127.500	14.710	0.712	8.950	0.569	2.100
Avg	124.430	10.271	0.698	7.581	0.564	2.000

6.2 Package outline comparison

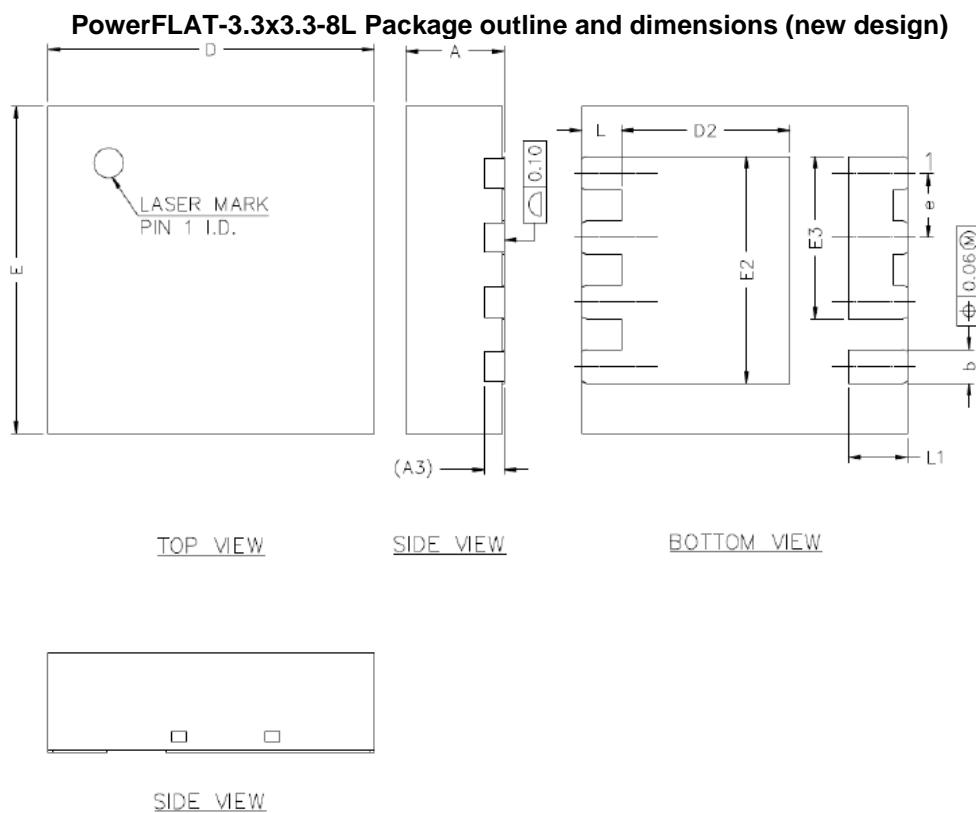
Comparative package outline and dimensions between old and new package design:



	Old dimensions			New dimensions			Change
	Min	Typ	Max	Min	Typ	Max	
A	0.95	1	1.05	0.9		1.1	Minor change
A3	-	0.2	-	-	0.2	-	No change
A4	-	0.2	-	NA			No longer applicable
b	0.30	0.37	0.44	0.29		0.44	Minor change
D	3.20	3.30	3.40	3.20		3.40	No change
E	3.20	3.30	3.40	3.20		3.40	No change
E2 (old) / D2 (new)	1.68	1.75	1.82	1.61		1.82	Minor change
D2 (old) / E2 (new)	2.24	2.31	2.38	2.19		2.39	Minor change
D3 (old) / E3 (new)	1.60	1.67	1.74	1.54		1.74	Minor change
e		0.65		0.55		0.75	No change
L	0.31	0.38	0.45	0.30		0.50	Minor change
L1	0.55	0.62	0.69	0.50		0.70	Minor change
L2	0.86	0.93	1.00	NA			No longer applicable

New design and dimensions remain fully compatible with recommended ST footprint.

6.3 Physical Dimensions



REF.	MIN.	TYP.	MAX.	NOTES
A	0.9		1.10	
A3		0.20		
b	0.29		0.44	
D	3.20		3.40	
D2	1.61		1.82	
E	3.20		3.40	
E2	2.19		2.39	
E3	1.54		1.74	
e	0.55		0.75	
L	0.30		0.50	
L1	0.50		0.70	

Measurements on 30 units (values in mm):

(mm)	A	A3	b	D	E	D2	E2	E3	L	L1	e
LSL	0.9		0.29	3.2	3.2	1.61	2.19	1.54	0.3	0.5	0.55
TYP		0.2									
USL	1.1		0.44	3.4	3.4	1.82	2.39	1.74	0.5	0.7	0.75
MIN	0.97	0.22	0.33	3.27	3.27	1.71	2.29	1.62	0.37	0.56	0.63
MAX	1.03	0.26	0.36	3.3	3.3	1.73	2.32	1.66	0.39	0.59	0.66
AVERAGE	1.01	0.24	0.35	3.28	3.28	1.72	2.30	1.65	0.38	0.58	0.64

6.4 Tests description

Test name	Description	Purpose
Die Oriented		
HTRB High Temperature Reverse	The diode is biased in static reverse mode at targeted junction temperature.	To determine the effects of bias conditions and temperature on solid state devices over time. It simulates the devices operating condition in an accelerated way. To maximize the electrical field across either reverse-biased junctions or dielectric layers, in order to investigate the failure modes linked to mobile contamination, oxide ageing, layout sensitivity to surface effects.
Package Oriented		
H3TRB Temperature Humidity Bias	The device is biased in static configuration minimizing its internal power dissipation, and stored at controlled conditions of ambient temperature and relative humidity.	To evaluate the package moisture resistance with electrical field applied, both electrolytic and galvanic corrosion are put in evidence.
TC Temperature Cycling	The device is submitted to cycled temperature excursions, between a hot and a cold chamber in air atmosphere.	To investigate failure modes related to the thermo-mechanical stress induced by the different thermal expansion of the materials interacting in the die-package system. Typical failure modes are linked to metal displacement, dielectric cracking, molding compound delamination, wire-bonds failure, die-attach layer degradation.
IOLT Intermittent Operating Life Test	All test samples shall be subjected to the specified number of cycles. When stabilized after initial warm-up cycles, a cycle shall consist of an "on" period, when power is applied suddenly to the device for the time necessary to achieve a delta case temperature (delta is the high minus the low mounting surface temperatures) of +85°C (+60°C for thyristors) +15°C, -5°C, followed by an off period, when the power is suddenly removed, for cooling the case through a similar delta temperature.	The purpose of this test is to determine compliance with the specified numbers of cycles for devices subjected to the specified conditions. It accelerates the stresses on all bonds and interfaces between the chip and mounting face of devices subjected to repeated turn on and off of equipment and is therefore most appropriate for case mount style (e.g., stud, flange, and disc) devices.
UHAST Unbiased Highly Accelerated Stress Test	The device is stored in saturated steam, at fixed and controlled conditions of pressure and temperature.	To investigate corrosion phenomena affecting die or package materials, related to chemical contamination and package hermeticity.
RSH Resistance to Solder Heat	Package is dipped by the leads in a solder bath after initial wet ageing (for SMDs only). Assessment by electrical test + no external crack	To simulate wave soldering process and verify that package will not be thermally damaged during this step.
SD Solderability	The purpose of this test method is to provide a referee condition for the evaluation of the solderability of terminations (including leads up to 0.125 inch in diameter) that will be assembled using tin lead eutectic solder.	This evaluation is made on the basis of the ability of these terminations to be wetted and to produce a suitable fillet when coated by tin lead eutectic solder. These procedures will test whether the packaging materials and processes used during the manufacturing operations process produce a component that can be successfully soldered to the next level assembly using tin lead eutectic solder. A preconditioning test is included in this test method, which degrades the termination finish to provide a guard band against marginal finish.



Public Products List

Public Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

PCN Title : Transfer of Assembly and Test manufacturing activity for Rectifiers housed in PowerFlat 3.3 x 3.3 package at subcontractor in China

PCN Reference : ADG/21/12896

Subject : Public Products List

Dear Customer,

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

STPS6M100DEE-TR	STPS1045DEE-TR	STPS8170DEE-TR
STPS8H100DEE-TR	STPS8L30DEE-TR	

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