

PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	POWER AND DISCRETES/26/16474	
1.3 Title of PCN	IGBT Industrial (TO247-LL): Capacity expansion in STS China.	
1.4 Product Category	Pls refer to impacted IGBT- Industrial products list in TO247-LL	
1.5 Issue date	2026-06-29	

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	KRISZTINA NEMETH
2.1.2 Phone	+49 8946006
2.1.3 Email	krisztina.nemeth@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Angelo RAO
2.1.2 Marketing Manager	Francesco TOSCANO
2.1.3 Quality Manager	Massimiliano CUOZZO

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Transfer	Line transfer for a full process or process brick (process step, control plan, recipes) from one site to another site: Assembly site (SOP 2617)	TFME (China) and SHENZHEN (China) as Assy Plants

4. Description of change

	Old	New
4.1 Description	TFME (China) as Assy Plant	TFME (China) and SHENZHEN (China) as Assy Plants
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	Processability	

5. Reason / motivation for change

5.1 Motivation	capacity increase
5.2 Customer Benefit	SERVICE CONTINUITY

6. Marking of parts / traceability of change

6.1 Description	By internal traceability code
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7. Timing / schedule

7.1 Date of qualification results	2026-06-23
7.2 Intended start of delivery	2026-10-10
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	16474 RERPTD26054_2.0_STGWA100H65DFB2_JWF701_IGBT Trench Gate Field Stop HB 650V Technology_TO247-LL_STS.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2026-06-29

9. Attachments (additional documentations)

16474 Public product.pdf
 16474 RERPTD26054_2.0_STGWA100H65DFB2_JWF701_IGBT Trench Gate Field Stop HB 650V Technology_TO247-LL_STS.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
	STGWA100H65DFB2	
	STGWA20H65DFB2	
	STGWA20HP65FB2	
	STGWA30H65DFB2	
	STGWA30HP65FB2	
	STGWA40H65DFB2	
	STGWA40HP65FB2	
	STGWA50HP65FB2	
	STGWA75H65DFB2	

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PCN Title : IGBT Industrial (TO247-LL): Capacity expansion in STS China.

PCN Reference : POWER AND DISCRETES/26/16474

Subject : Public Products List

Dear Customer,

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

STGWA40HP65FB2	STGWA50H65DFB2	STGWA20H65DFB2
STGWA30HP65FB2	STGWA100H65DFB2	STGWA75H65DFB2
STGWA50HP65FB2	STGWA20HP65FB2	GWA75H65DRFB2
STGWA40H65DFB2	STGWA30H65DFB2	

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Reliability Report RERPTD26054

New TO247-LL package activation to STS assembly plant - IGBT Trench Gate Field Stop HB 650V Technology

General Information	
Commercial Product	STGWA100H65DFB2
Product Line	JWF7
Product Description	IGBT
Silicon Technology	IGBT Trench Gate Field Stop HB 650V
Package	TO247-LL

Traceability	
Wafer Fab	ST Ang Mo Kio SG8 (Singapore)
Assembly Plant	ST Shenzhen (China)

Release	Date	Author	Function
1.0	June 17th , 2026	M.Panzarella L.Pradotti	APMS – Q&R – Catania
2.0	June 23 rd , 2026		

DOCUMENT ACTORS:

Name	Funcion	Location	Date
C.Cappello	Division Reliability Manager	ST Catania (Italy)	June 23 rd , 2026

This report is a summary of the reliability trials performed in good faith by STMicroelectronics. This report does not imply for STMicroelectronics expressly or implicitly any contractual obligations other than as set forth in STMicroelectronics General Terms and Conditions of Sale.

RELIABILITY EVALUATION OVERVIEW

• OBJECTIVE

Aim of this report is to present the results of the reliability evaluations performed on **STGWA100H65DFB2** (JWF701 + FHH6 as ST internal silicon lines) chosen as test vehicles to release the products designed in IGBT Trench Gate EI Field Stop HB 650V Technology, diffused in ST Ang Mo Kio (Singapore) 8" wafer fab and assembled in package TO247-LL in ST Shenzhen assembly plant, to commercial maturity for industrial domain.

Involved product:

Commercial product	Silicon line	Diffusion fab	Strategy
STGWA100H65DFB2	JWF701 + FHH6	ST SG8	MASTER as bigger die size
STGWA20H65DFB2	JWF301 + FIH2	ST SG8	DERIVATIVE
STGWA20HP65FB2	JWF301 + FIHO	ST SG8	DERIVATIVE
STGWA30H65DFB2	JWF401 + FIH2	ST SG8	DERIVATIVE
STGWA30HP65FB2	JWF401+ FIHO	ST SG8	DERIVATIVE
STGWA50H65DFB2	JWF501+ FIH3	ST SG8	DERIVATIVE
STGWA50HP65FB2	JWF501+ FIHO	ST SG8	DERIVATIVE
STGWA75H65DFB2	JWF601 + FHH6	ST SG8	DERIVATIVE
GWA75H65DRFB2	JWF601 + MOW4	ST SG8	DERIVATIVE
STGWA40H65DFB2	JWFE01+ FIH3	ST SG8	DERIVATIVE
STGWA40HP65FB2	JWFE01+ FIHO	ST SG8	DERIVATIVE

• CONCLUSION

All reliability tests have been completed with positive results. Neither functional nor parametric rejects were detected at final electrical testing.

Based on the overall results obtained the products designed in IGBT Trench Gate EI Field Stop HB 650V Technology, diffused in ST Ang Mo Kio (Singapore) 8" wafer fab and assembled in package TO247-LL in ST Shenzhen assembly plant, have positively passed reliability evaluation performed in agreement with ST 0061692 specification.

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1. RELIABILITY STRATEGY

1.1. Reliability strategy

To Activate the production of the package TO247-LL in ST Shenzhen assembly plant for the products designed in IGBT Trench Gate EI Field Stop HB 650V technology and diffused in ST Ang Mo Kio (Singapore) 8" wafer fab, was performed a Full reliability Matrix on one lot of **STGWA100H65DFB2** product and package oriented test on one lot of GWA40MS120DF4AG (KDJR + U24W silicon line) and on one lot of STGWA80H65DFB (EWFR + FHH6 silicon line) focused on H3TRB, TC, IOL and AC tests according to the ST internal specification #0061692.

For details on test conditions, generic data used and specifications references, refer to test results summary in section 3.

1.2. Test Plan

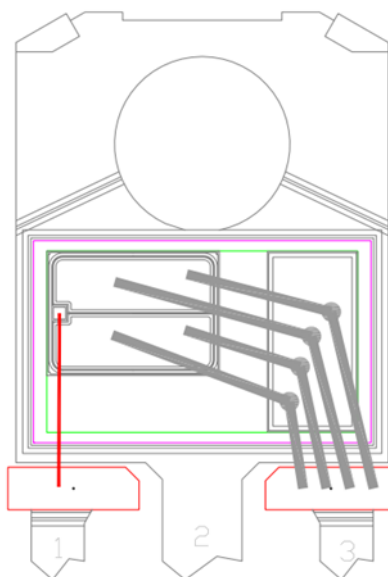
Table 1 – AEC-Q101 TEST PLAN

TEST GROUP	TEST NAME	DESCRIPTION / COMMENTS	TEST FLAG
A Accelerated Environment Stress Tests	PC	Preconditioning	Not Applicable
	H³TRB	High Humidity High Temp. Reverse Bias	Yes
	AC	Autoclave	Yes
	TC	Temperature Cycling	Yes
	IOL	Intermittent Operational Life	Yes
B Accelerated Lifetime Simulation Tests	HTRB	High Temperature Reverse Bias	Yes
	HTGB	High Temperature Gate Bias	Yes
	PD	Physical Dimension	Yes
	WBP	Wire Bond Pull Strength	Yes
	WBS	Wire Bond Shear Strength	Yes
	RSH	Resistance to Solder Heat	Yes
	SD	Solderability	Yes
D Die Fabrication Reliability Tests	DI	Dielectric Integrity	No
E Electrical Verification Tests	EV	External Visual	Yes
	TEST	Pre- and Post-Stress Electrical Test	Yes
	ESDH (HBM)	ESD HBM Characterization	No
	ESDC (CDM)	ESD CDM Characterization	No
	UIS	Unclamped Inductive Switching	No

2. PRODUCT OR TEST VEHICLE CHARACTERISTICS

2.1. Generalities

2.2. Pin connection / Bonding diagram



2.3. Traceability

2.3.1. Wafer Fab information

Wafer fab information	
Wafer Fab name / location	ST Ang Mo Kio SG8 (Singapore)
Wafer diameter (inches)	8"
Wafer thickness (µm)	70 µm
Silicon process technology	IGBT Trench Gate Field Stop HB 650V
Die finishing front side materials/thicknesses	SiN (nitride)
Die finishing back side materials/thicknesses	Ti-NiV-Ag
Die size	6500 x 4700 µm
Metal levels/Materials/Thicknesses	1 level AlCu/W 4.5 µm

2.3.2. Assembly Plant information

Assembly Information	
Assembly Plant name / location	ST Shenzhen (China)
Package	TO247-LL
Lead frame	FRAME TO247 3LA (IL Ni) BCu LF Ni-Ni/P
Die attach	PREFORM Sn/Ag/Sb 65/25/10 D.76mm
Wire bonding	Al 15 mils Source – Al-Mg 5 mils Gate
Molding compound	RESIN HYSOL GR30 D20mm
Package Moisture Sensitivity Level (J-STD020D)	NO (through-hole package)

2.3.3. Reliability testing information.

Reliability Testing Information	
Reliability laboratory location	ST CATANIA

Note: ST is ISO 9001 certified. This induces certification of all internal and subcontractor labs.
 ST certification document can be downloaded under the following link:
http://www.st.com/content/st_com/en/support/quality-and-reliability/certifications.html

3. TEST SUMMARY RESULT

3.1. Lot Information

Lot #	Commercial Product	Product line	Diffusion Lot	Assy lot	comment
1	STGWA100H65DFB2	JWF701 + FHH6	VC50729K	GK603355	
2	GWA40MS120DF4AG	KDJRA1 + U24W	V55055W4	GK521PEY01	Not for commercial usage
3	STGWA80H65DFB	EWFR01 + FHH6	VC448686	GK513CD4	Not for commercial usage

3.2. Tests summary

TEST GROUP A – ACCELERATED ENVIRONMENT STRESS TESTS

Test	#	Reference	AEC-Q101 (Group A) STM Test Conditions	Lots	S.S.	Total	Results FAIL/SS/ Lots	Comments
PC	A1	JEDEC/IPC J-STD-020 JESD22-A-113	MSL1 (168h@85C/85%RH) 3x Reflow simulation Peak Reflow Temp= 260°C	-	-	-		Not applicable
H ³ TRB	A2 alt	JESD22A-101	1000h Ta=85°C, RH=85% Vds= 100V	1 2	77 25	77 50	0/77/1 0/25/2	Performed on Lot 1 Performed on lot 2 and 3
AC	A3 alt	JESD22 A-102	96h @ T=121°C, 2atm, 100%RH	1 2	77 25	77 50	0/77/1 0/25/2	Performed on Lot 1 Performed on lot 2 and 3
TC	A4	JESD22A-104 Appendix 6 J-STD-035	Ta=-55°C /+150°C, 1000cy	1 2	77 25	77 50	0/77/1 0/25/2	Performed on Lot 1 Performed on lot 2 and 3
IOL	A5	MIL-STD-750 Method 1037	15Kcy / ΔTj ≥ 100°C	1 2	77 25	77 50	0/77/1 0/25/2	Performed on Lot 1 Performed on lot 2 and 3

TEST GROUP B – ACCELERATED LIFETIME SIMULATION TESTS

Test	#	Reference	AEC-Q101 (Group B) STM Test Conditions	Lots	S.S.	Total	Results FAIL/SS/ Lots	Comments
HTRB	B1	MIL-STD-750-1 M1038 Method A	1000h Tj=175°C, Vds= 80V	1	77	77	0/77/1	Performed on Lot 1
HTGB	B2	JESD22 A-108	1000h Tj=175°C, Vgs= 20V	1	77	77	0/77/1	Performed on Lot 1
HTGB	B2	JESD22 A-108	1000h Tj=175°C, Vgs= -20V	1	77	77	0/77/1	Performed on Lot 1

TEST GROUP C – PACKAGE ASSEMBLY INTEGRITY TESTS

Test	#	Reference	AEC-Q101 (Group C) STM Test Conditions	Lots	S.S.	Total	Results FAIL/SS/Lots	Comments
PD	C2	JEDEC JESD22-B-100	-	1	30	30	Passed	From assembly data
WBP	C3	MIL-STD-750-2 Method 2037	-	10 bonds from min of 5 parts			Passed	From assembly data
WBS	C4	AEC Q101-003 JESD22 B116	-	10 bonds from min of 5 parts			Passed	From assembly data
RSH	C8	JESD22-A-111	-	1	30	30	Passed	From assembly data
SD	C10	JEDEC J-STD-002	-	1	10	10	Passed	From assembly data

TEST GROUP D – DIE FABRICATION RELIABILITY TESTS

Test	#	Reference	AEC-Q101 (Group D) STM Test Conditions	Lots	S.S.	Total	Results FAIL/SS/Lots	Comments
DI	D1	AEC Q101-004 Section 3	-	-	-	-	-	

TEST GROUP E – ELECTRICAL VERIFICATION

Test	#	Reference	AEC-Q101 (Group E) STM Test Conditions	Lots	S.S.	Total	Results FAIL/SS/Lots	Comments
EV	E0	JEDEC JESD22-B101	All qualification parts submitted for testing	All qualification parts submitted for testing			Done	
TEST	E1		User specification or supplier's standard specification	All qualification parts			Done	
ESDH	E3	AEC-Q101-001	ESD HBM Characterization	-	-	-	-	
ESDM	E3	AEC-Q101-001	ESD CDM Characterization	-	-	-	-	
UIS	E5	AEC-Q101-004 Section 2		-	-	-	-	

4. REVISION HISTORY

Release	Date	Description
1.0	June 17 th , 2026	First Release
2.0	June 23 rd , 2026	To update the strategy and report format

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