



PRODUCT/PROCESS CHANGE NOTIFICATION

TITLE	STL50N6F7 (OD62): Activation of TFME TongFu (former Nantong Fujitsu) as Second Source of Assembly and Final Testing
IMPACTED PRODUCTS	STL50N6F7
MANUFACT. STEP	Assembly and Final Testing
INVOLVED PLANT	Subcontractor TFME TongFu – China 广东通富微电子股份有限公司
CHANGE REASON	Capacity Increase and Service Improvement
CHANGE DESCRIPTION	Subcontractor TFME TongFu (China) will be activated as additional Assembly and Final Testing location beside current ST Shenzhen
VALIDATION	Qualification will be completed within August 2022 See below additional details
TRACEABILITY	Dedicated Finished Good Code
IMPLEMENTATION	Upon Customer Agreement



life.augmented

Pflat 5x6 - STL50N6F7

Activation of TFME (TongFu former Nantong Fujitsu) as second source of Assembly and Final Testing

Agenda

3 Change Description

4 POA comparison

6 Bill Of Material Comparison

7 ZVEI Guidelines

8 Test Vehicles and Product lines impacted

9 Recommended footprint

10 Conclusions

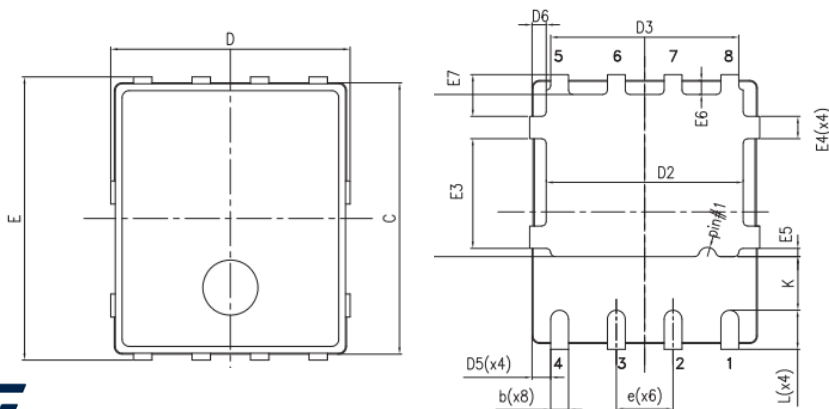
Change description

- The product STL50N6F7 is currently manufactured as below:
 - Silicon Line OD6201 produced at Catania 8”
 - Package PowerFLAT 5x6 produced at ST Shenzhen
- A second source has been activated for PowerFLAT 5x6 at Nantong Fujitsu (TFME), where other STM products are already in mass production

STL50N6F7

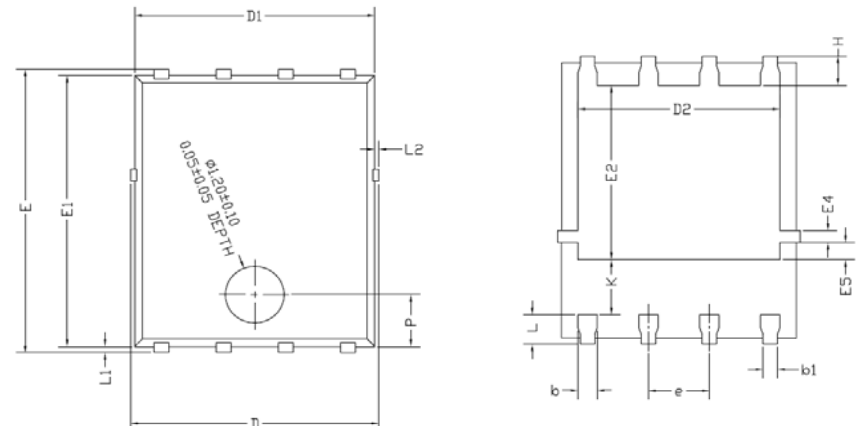
OD62 assembled at Shenzhen (Current)

- 1) Commercial Product: STL50N6F7
- 2) STS Bill of Material (see slide)
- 3) POA PowerFLAT 5x6, see below
- 4) Thermal Cycles included in production flow



OD62 assembled at TFME (New)

- 1) Commercial Product: STL50N6F7
- 2) TFME Bill of Material (see slide)
- 3) POA PowerFLAT 5x6 TFME, see below
- 4) Thermal Cycles not included in production flow



STS POA vs TFME POA

PowerFLAT 5x6 Shenzhen

Table 8: PowerFLAT™ 5x6 type C package mechanical data

Dim.	mm		
	Min.	Typ.	Max.
A	0.80		1.00
A1	0.02		0.05
A2		0.25	
b	0.30		0.50
C	5.80	6.00	6.20
D	5.00	5.20	5.40
D2	4.15		4.45
D3	4.05	4.20	4.35
D4	4.80	5.00	5.20
D5	0.25	0.40	0.55
D6	0.15	0.30	0.45
e		1.27	
E	5.95	6.15	6.35
E2	3.50		3.70
E3	2.35		2.55
E4	0.40		0.60
E5	0.08		0.28
E6	0.20	0.325	0.45
E7	0.75	0.90	1.05
K	1.05		1.35
L	0.725		1.025
L1	0.05	0.15	0.25
θ	0°		12°

PowerFLAT 5x6 TFME

Table 7: PowerFLAT 5x6 type C SUBCON package mechanical data

Dim.	mm		
	Min.	Typ.	Max.
A	0.90	0.95	1.00
A1		0.02	
b	0.35	0.40	0.45
b1		0.30	
c	0.21	0.25	0.34
D			5.10
D1	4.80	4.90	5.00
D2	4.01	4.21	4.31
e	1.17	1.27	1.37
E	5.90	6.00	6.10
E1	5.70	5.75	5.80
E2	3.54	3.64	3.74
E4	0.15	0.25	0.35
E5	0.26	0.36	0.46
H	0.51	0.61	0.71
K	0.95		
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
L2			0.10
P	1.00	1.10	1.20
θ	8°	10°	12°

Bill Of Material Comparison (PFlat)

Actual Bill of Material in STS	
ITEM	MATERIAL
Wire	2 MILS Cu
Ribbon	Al 20 x 4 mils
Frame	FRAME PFLAT 8L 5x6 Opt AW
Die attach	Soft solder PREFORM Pb/Ag/Sn 95.5/2.5/2
Mold Compound	EME G770HCD



New Bill of Material in TFME	
ITEM	MATERIAL
Wire	2 MILS Cu
Ribbon	Al 20 x 4 mils
Frame	FRAME PFLAT 8L 5x6 Opt PDFN8R 157x173
Die attach	Soft solder Pb/Ag/Sn 95.5/2.5/2
Mold compound	CEL9220HF10

ZVEI Guidelines

- According to ZVEI recommendations, the notification is required.

ID	Type of change	Remaining risks within Supply Chain?		Understanding of semiconductors experts	Examples to explain
		No	Yes		
	Assessment of impact on Supply Chain regarding following aspects - contractual agreements - technical interface of processability/manufacturability of customer - form, fit, function, quality performance, reliability				
	ANY				
	DATA SHEET				
	DESIGN				
	PROCESS - WAFER PRODUCTION				
	BARE DIE				
	PROCESS - ASSEMBLY				
x 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
x SEM-PA-18	Move all or parts of production to a different assembly site.	P	P	Assembly transfer or relocation. Includes transfer as well as additional site.	e.g. dual source / fab strategy
	PACKING/SHIPPING				
	EQUIPMENT				
	TEST FLOW				
x SEM-TF-01	Move of all or part of electrical wafer test and/or final test to a different test site.	P	P	Tester transfer or relocation. Check impact on SEM-AN-01 Includes transfer as well as additional site.	Dual source strategy
	Q-GATE				

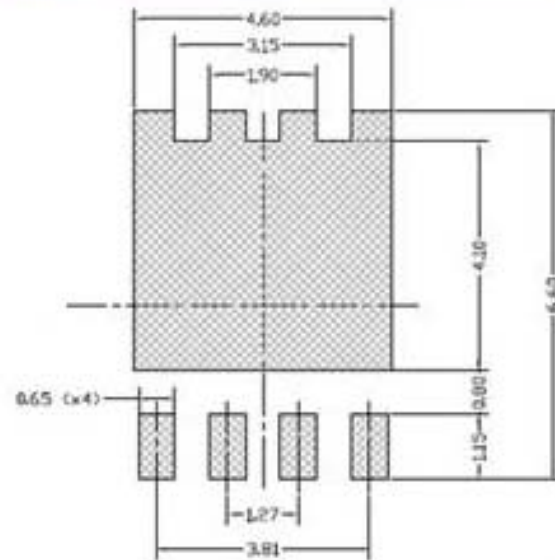
Test Vehicles and Product lines impacted

- Products line:
 - STL50N6F7 (Silicon Line OD6201)

Recommended footprint (PFlat)

TFME and Shenzhen PowerFLAT 5x6 recommended footprint

Figure 20. PowerFLAT 5x6 recommended footprint (dimensions are in mm)



Packages from different assembly plant are sharing the same footprint

Conclusions

- Detailed qualification activity has been planned in order to qualify the TFME (TongFu) plant as second source for Pflat 5x6 package;
- All reliability tests (AEC-Q101 requirement) have been planned.
- Final reliability report: activity in progress. Availability by end 2022-August.