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Automotive Discrete Group (ADG)
Power Transistor Division

Process Change Notification

Package Outline Change on PowerFLAT™ ribbon version Products

Dear Customer,

We inform you that according to our continuous improvement plan and to improve our service versus customer we have decided to introduce a new frame type for our PowerFLAT™ ribbon version products. The change will have a light impact on package outline and no one on all the electrical characteristics both static and dynamic.

In the next page you will find a detailed report of the change.

According to the ZVEI and ST internal rules, we have classified the change as class 2:

	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 on Supply Chain?**	
ID	**Type of change**	**No**	**Yes**
SEM-PA-03	Change in leadframe dimensions	**P**	**P**

The qualification will be completed by wk39/2018

Sincerely yours!

Package Outline Change on PowerFLAT™ ribbon version Products

ST Part number:

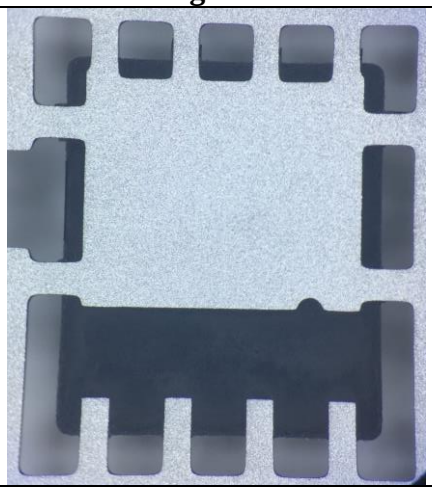
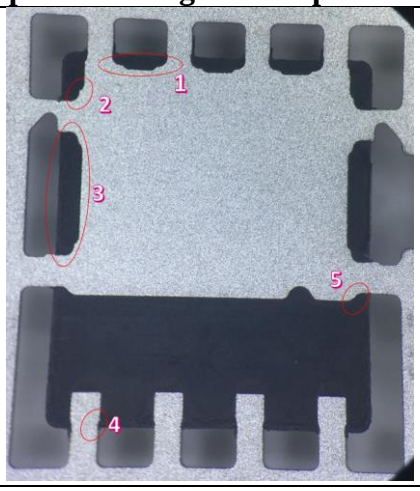
Package: **PowerFLAT™ Ribbon Version**
Back End plant: **Shenzhen**

Reason and background of the changes

To enlarge material availability introducing a new frame type to be used for all the ribbon version products in PowerFLAT™.

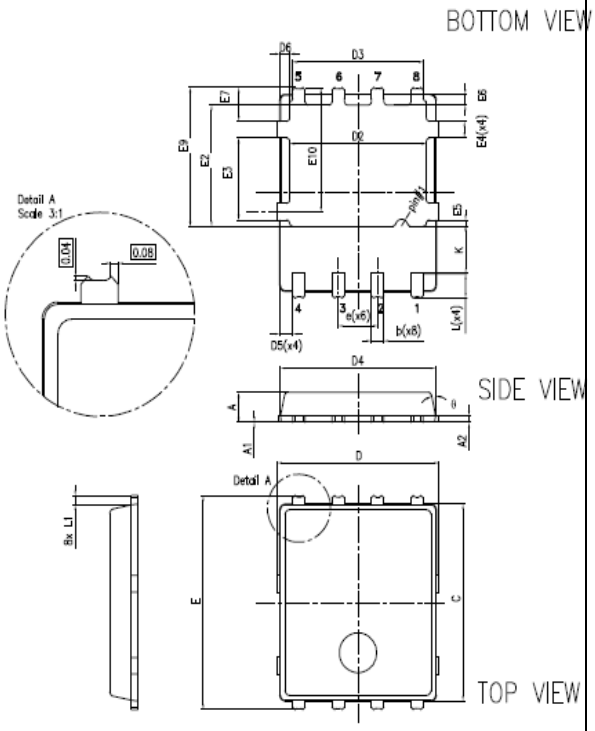
Impact on form, fit, function, or reliability.

No change in terms of electrical behavior and reliability performances.
A small change in the package outline will be visible as reported in the comparison below:

Current Package – Etched Frame	Proposed Package – Stamped Frame
	

Datasheet

- No impact on all the electrical parameters.
- Both the package outline are within current spec



Dim.	DATA BOOK (mm)				
	NOM	MIN	MAX	Current	Proposed
A		0.80	1.00	0.92	0.95
A1		0.02	0.05	0.04	0.03
A2	0.25			0.26	0.27
b		0.30	0.50	0.41	0.41
C	6.00	5.80	6.20	5.87	5.85
D	5.20	5.000	5.40	5.20	5.13
D2		4.15	4.45	4.29	4.40
D3	4.20	4.05	4.35	4.20	4.23
D4	5.00	4.80	5.20	4.91	4.89
D5	0.40	0.25	0.55	0.35	0.31
D6	0.30	0.15	0.45	0.32	0.29
e	1.27			1.26	1.27
E	6.40	6,20	6,60	6.41	6.39
E2		3.50	3.70	3.60	3.61
E3		2.35	2.55	2.46	2.44
E4		0.40	0.60	0.48	0.49
E5		0.08	0.28	0.14	0.17
E6	0.325	0.20	0.45	0.36	0.43
E7	0.90	0.75	1.05	0.91	0.90
K		1.275	1.575	1.440	1.370
L		0.60	0.80	0.67	0.68
L1	0.15	0.05	0.25	0.20	0.18
θ		0°	12°	11.9°	11.7°

<table>
<tr><td rowspan="2">Benefit of the change</td><td>Double frame version availability to improve production throughput / flexibility.</td></tr>
<tr><td>Here following the comparison between current frame and proposed one:

<table>
<tr><th>Item</th><th>Current</th><th>New</th></tr>
<tr><td>Supplier</td><td>SHM</td><td>SHM</td></tr>
<tr><td>Type</td><td>Post-Plated Ni/NiP</td><td>Pre-Plated Ni/NiP</td></tr>
<tr><td>Manufacturing Type</td><td>Etched</td><td>Stamped</td></tr>
<tr><td>Manufacturing Location</td><td>Japan</td><td>Malaysia</td></tr>
</table>
</td></tr>
<tr><td>Planned Implementation date for change</td><td>Week 07/2019</td></tr>
<tr><td>Qualification Plan</td><td>
<table>
<tr><th>CP</th><th>Rel. Plan</th><th>TC</th><th>IOLT</th><th>THB</th><th>HTS 175°C</th><th>Wire Pull & Bond Shear</th><th>UIS</th><th>Parametric Verification</th></tr>
<tr><td>STL40DN3LLH5</td><td>1 lot</td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td>X</td></tr>
<tr><td>STL120N4F6AG</td><td>1 lot</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr>
<tr><td>STL86N3LLH6AG</td><td>1 lot</td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td>X</td></tr>
<tr><td>STL52DN4LF7AG</td><td>1 lot</td><td>X</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td>X</td></tr>
</table>

Qualification will be completed by week 39/2018</td></tr>
<tr><td>PPAP</td><td>PPAP will be updated accordingly</td></tr>
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