Product Change Notice
(Pad Design Change)

- **Product : LH351C**
- **Code : SPHWHTL3D50XXXXXXX**
- **Change : Lead Frame (Pad Design Change)**
- **Remark : Scheduled to start manufacturing with new L/F on July. 2023**

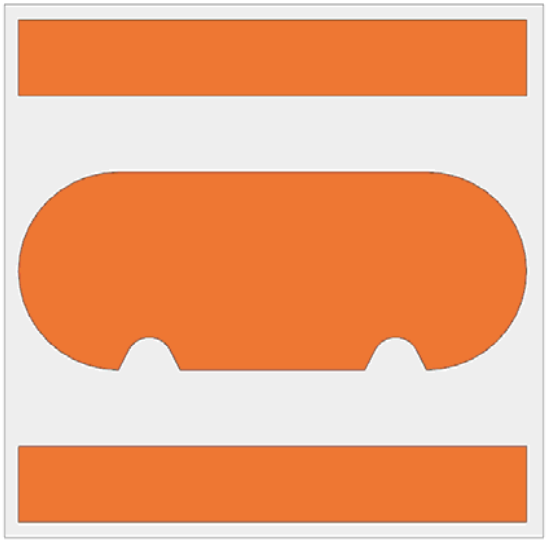
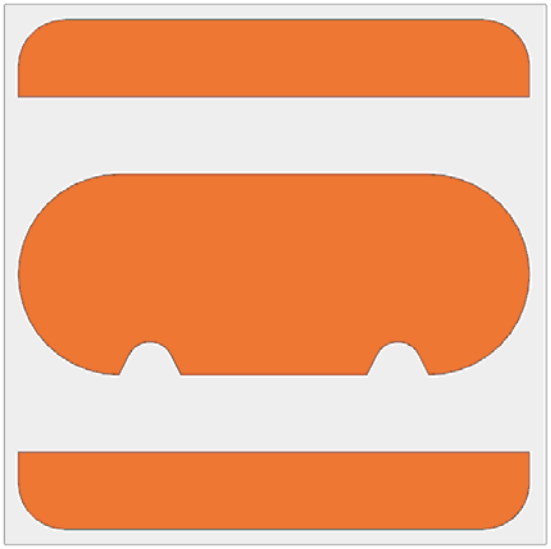
SAMSUNG

Summary

- LH351C with new Lead Frame shows the same performance and reliability as the current product.

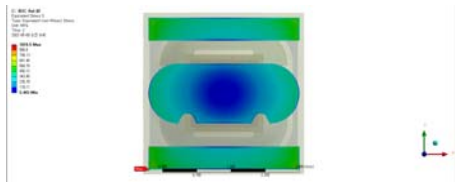
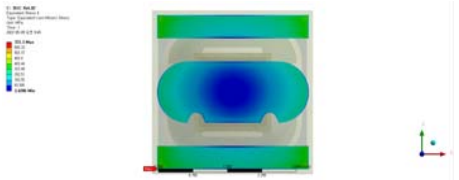
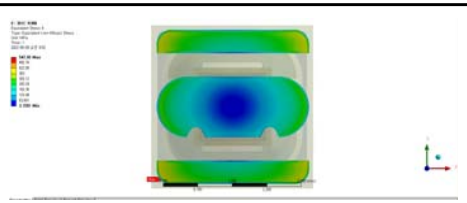
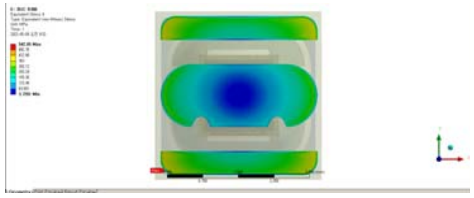
Item		Current	New
Lead Frame	Model	*LB-301ZH*	*LB-311ZH*
	Pad material	Cu/Ag pad	←
	Pad Shape	Normal Edge	Rounded Edge
Reliability	Temp. Cycle	PASS all criteria in the specification	
	Wet High Temp. On/Off		
	High Temp. Operation		
Optoelectronic performance		Equivalent	

1. Lead Frame Design

	Current	New
LH351C		
Model	LB-301ZH (R0.0)	LB-311ZH (R0.3)
Pad material	Cu/Ag	Cu/Ag

2. Simulation of 351C using LB311-ZH

- **Maximum T/C Stress of 351C using LB311-ZH is reduced by 25%**

	Pad	Temp.	Solder Stress (MPa)		
			Max.	Avg.	Ratio
LH351C_Ref.		125℃	 **1019.5**	287.3	-
		-45℃	 **723.3**	199.2	-
Pad Round_R300		125℃	 **770.7**	291.8	-24%
		-45℃	 **542.7**	202.4	-25%

3. Reliability

Passed all items in the internal specifications

● Test Item & results

<table>
<tr><th>Test Item</th><th>Test Condition</th><th>Test Result</th></tr>
<tr><td>High Temperature Operating Life Test</td><td>85℃, 1000hr, Maximum Rated Drive Current</td><td>Pass</td></tr>
<tr><td>High Temperature Humidity Life Test</td><td>85℃, 85%RH, 1000hr, Maximum Rated Drive Current</td><td>Pass</td></tr>
<tr><td>Temperature Cycling</td><td>-45 ℃ ~ 125 ℃, each 15 min, 500cyc</td><td>Pass
<table>
<tr><th></th><th>test list</th><th>300 cyc</th><th>500 cyc</th><th>700cyc</th></tr>
<tr><td rowspan="2">LB-301ZH (R0.0)</td><td>Δ VF(%)</td><td>100.04%</td><td>100.03%</td><td>101.44%</td></tr>
<tr><td>Δ Lm(%)</td><td>100.35%</td><td>100.38%</td><td>99.99%</td></tr>
<tr><td rowspan="2">LB-311ZH (R0.3)</td><td>Δ VF(%)</td><td>100.07%</td><td>100.02%</td><td>101.14%</td></tr>
<tr><td>Δ Lm(%)</td><td>100.29%</td><td>100.52%</td><td>100.00%</td></tr>
</table></td></tr>
</table>

● Criteria for judging the Damage

Item	Symbol	Test Condition (Ts=85℃)	Min	Max
Forward Voltage	V_F	IF = 700mA	Initial value*0.9	Initial value*1.1
Luminous Flux	Φ_V	IF = 700mA	Initial value*0.7	Initial value*1.1

Thank you