

Product Change Notice

- **Product** : LH351H 660nm V2
- **P/N** : SPHRD2L3DH20E7W410
- **Change** : Change of LED die version

Dec. 2020

1. Overview

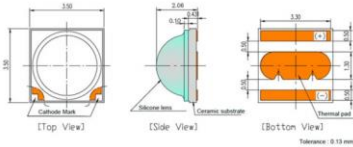
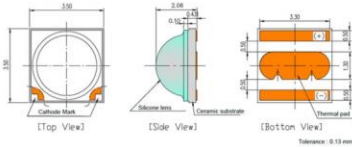
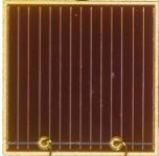
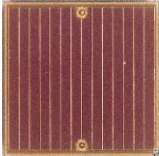
Due to the change of LED die design,
Samsung is changing P/N of LM351H 660nm V2 product.

With the change of LED die design,
Samsung provides higher performance than before.

Reliability is same as current product and you can use same LM80 report.

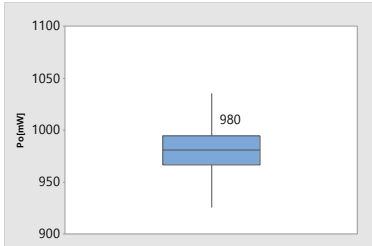
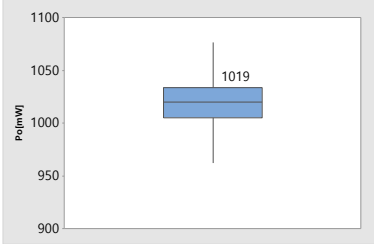
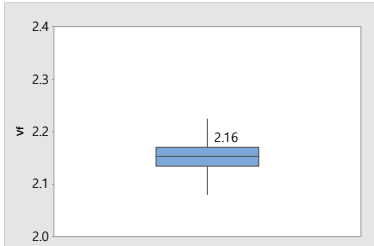
1. Overview

Change LED die design for higher radiation power.

		Changes (Before vs. After)		Remark
Part Number		SPHRD2L3DH20E7W410	SPHRD2L3DH20E7W41J	Change of output rank
Material	Substrate	Al ₂ O ₃	Al ₂ O ₃	Same
PPE (umol/J)		3.48	3.69	Increasing 6.0%
LED package size and appearance		 <p>Technical drawings of the LED package before the change, showing top, side, and bottom views with dimensions. Labels include: [Top View], [Side View], [Bottom View], Ceramic substrate, Thermal pad, and Tolerance: 0.13 mm.</p>	 <p>Technical drawings of the LED package after the change, showing top, side, and bottom views with dimensions. Labels include: [Top View], [Side View], [Bottom View], Ceramic substrate, Thermal pad, and Tolerance: 0.13 mm.</p>	Same
Beam Angle		130°	130°	Same
LED die Image				Location of Electrode Change

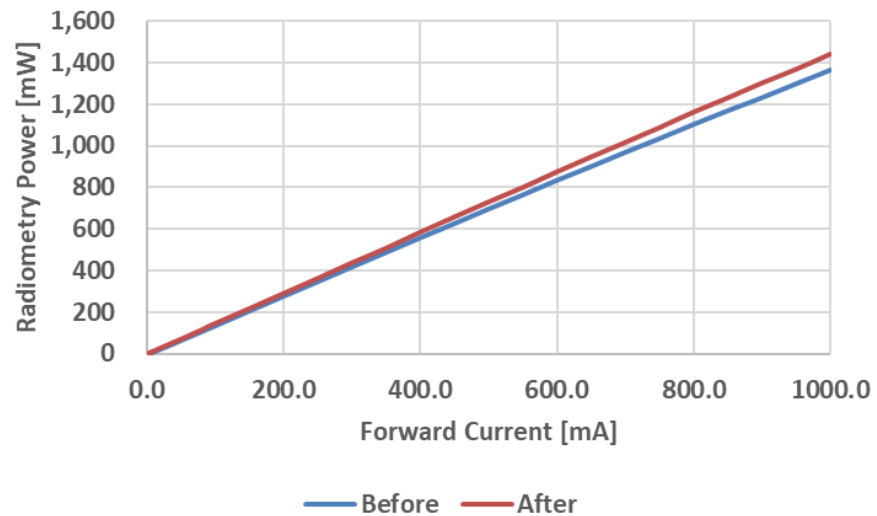
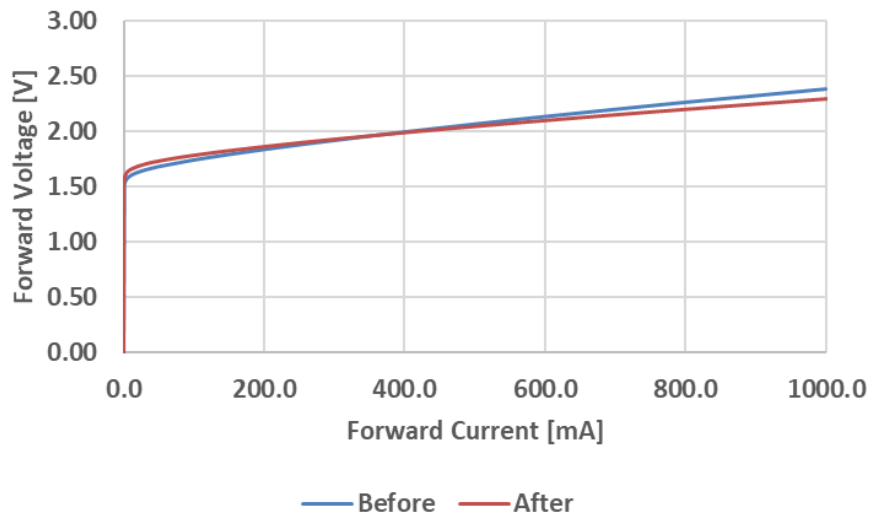
2. Performance

Better electrical, optical performance

Item (700mA, 25C)	Typical value		Remark
	Before	After	
mW	 <p>Box plot showing the distribution of mW before. The y-axis ranges from 900 to 1100. The median is 980. The box spans from approximately 970 to 995. Whiskers extend from 930 to 1040.</p>	 <p>Box plot showing the distribution of mW after. The y-axis ranges from 900 to 1100. The median is 1019. The box spans from approximately 1010 to 1035. Whiskers extend from 965 to 1080.</p>	+4%
Vf	 <p>Box plot showing the distribution of Vf before. The y-axis ranges from 2.0 to 2.4. The median is 2.21. The box spans from approximately 2.18 to 2.22. Whiskers extend from 2.14 to 2.27.</p>	 <p>Box plot showing the distribution of Vf after. The y-axis ranges from 2.0 to 2.4. The median is 2.16. The box spans from approximately 2.15 to 2.17. Whiskers extend from 2.09 to 2.23.</p>	-0.05V
PPE (umol/J)	3.48	3.69	+6.0%

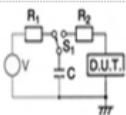
2. Performance

Better electrical, optical performance



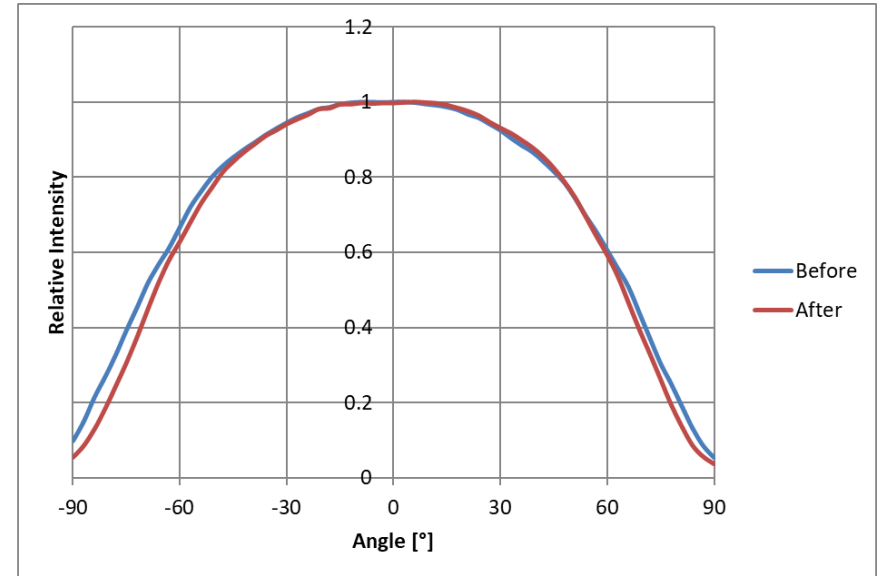
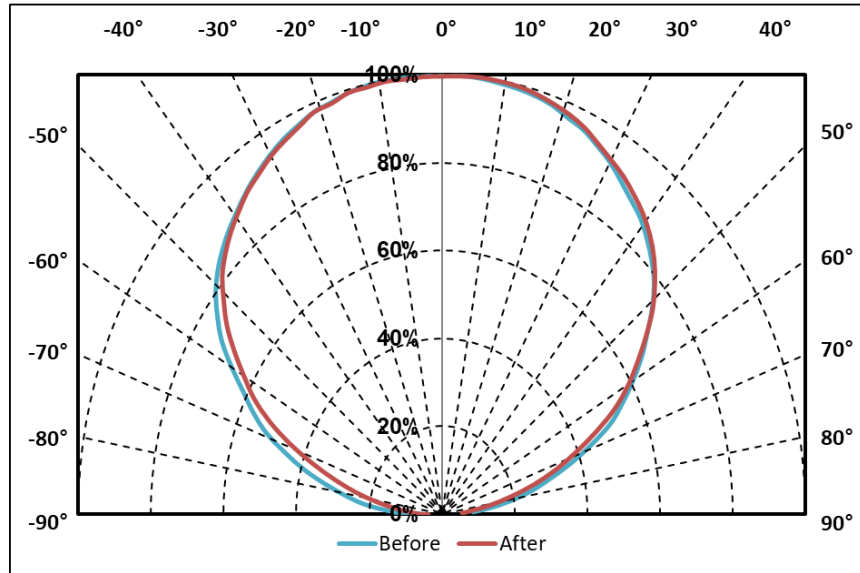
3. Reliability

Passed all criteria of Samsung standards

Test Item	Test Condition	Test Hour / Cycle
High Temperature Life Test	85 °C, Maximum Rated Drive Current	1000 h
High Temperature Humidity Life Test	85 °C, 85 % R.H., Maximum Rated Drive Current	1000 h
Low Temperature Life Test	-40 °C, Maximum Rated Drive Current	1000 h
Temperature Cycling	-45 °C / 15 min ↔ 125 °C / 15 min temperature change within 5 min	500 cycles
High Temperature Storage	105 °C	1000 h
High Temperature Humidity Storage	85 °C, 85 % R.H	1000 h
ESD (HBM)	 <p>R₁: 10 MΩ R₂: 1.5 kΩ C: 100 pF V: ±8 kV</p>	5 times


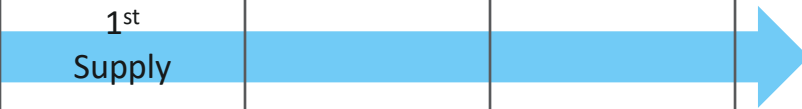
4. Beam Angle Characteristics

Same beam angle of 130° , Same of Lambertian pattern



5. Schedule

New product will be available from Feb. 2021

P/N	DEC 20	JAN 21	FEB	MAR	APR
SPHRD2L3DH20E7W410 (Current P/N)	PCN Notice / LTBO		LTS 	-	-
SPHRD2L3DH20E7W41J (New P/N)	Evaluation Sample / Data sheet	1 st Order with New P/N	1 st Supply 		

※ LTBO : Last time buying order

※ LTS : Last time shipment

Thank you