



和辉光电
Hehui

Qingdao Hehui Optoelectronic Co., Ltd.

DATA SHEET

REV:1.0

DATA:2009.09.01

DATA SHEET

Model No. : SMD5050 LED

Description:

- 5.0*5.0*1.5 Top View LED
- Super High Brightness
- High Reliability
- Fade Resistant



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Part No: SMD5050 LED

Features:

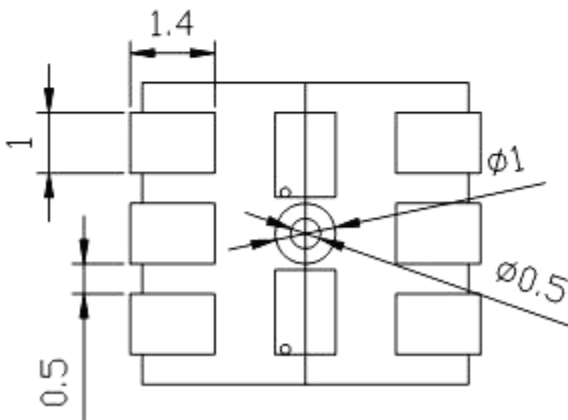
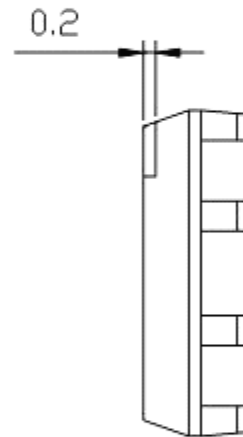
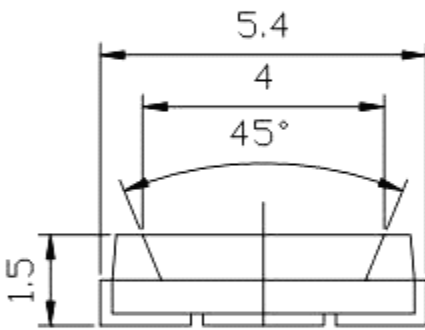
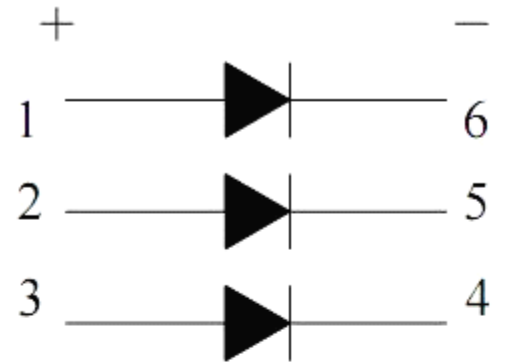
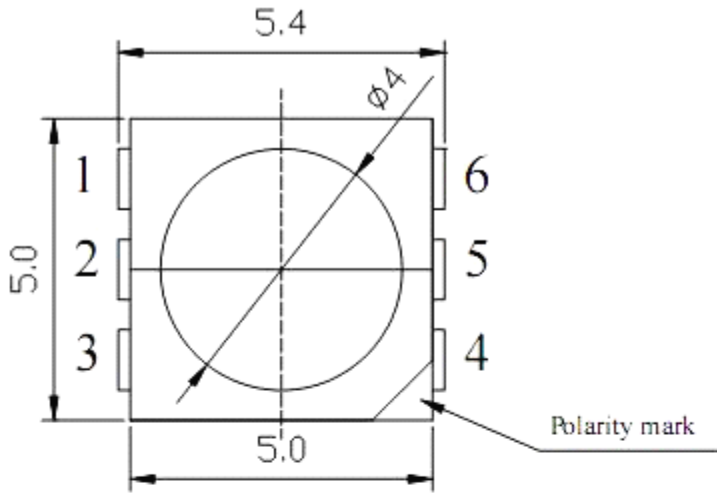
- ※Super High Brightness
- ※High Reliability
- ※Fade Resistant

Applications

1	General lights
2	LCD display backlight
3	Decorative and entertainment illumination
4	Exterior and interior automotive illumination
5	Portable flashlight



Dimensions



Notes:

All dimensions in mm tolerance is ± 0.1 mm unless otherwise noted.



Maximum Ratings (T_{Ambient}=25°C)

Parameter	Symbol	Rating	Unit
Operating Temperature	T _{opr}	-30 ~ +100	°C
Storage Temperature	T _{stg}	-40 ~ +120	°C
DC Forward Current	I _F	60	mA
Peak pulse current;(t _p ≤100μs,Duty cycle=0.25)	I _{pulse}	180	mA
Reverse Voltage	V _R	5	V
Manual Soldering Time at 260°C	T _{sol}	5	second

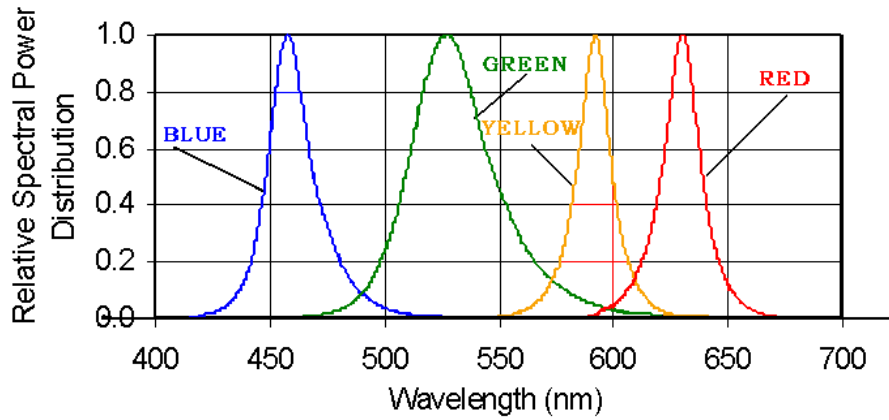
Electrical Optical Characteristics (T_{Ambient}=25°C, I_F=20mA)

Part No.	Material	Emitting Color	Forward Voltage (V)		Luminous Intensity (mcd)		Dominant Wavelength (nm)		Viewing Angle (2θ _{1/2})
			Min.	Max.	Min.	Max.	Min.	Max.	
HH-S50503RS1	AlGaInP	Red	1.8	2.4	500	-	620	635	120°
HH-S50503GS1	InGaN	Green	3.0	3.5	2000	-	515	530	120°
HH-S50503BS1	InGaN	Blue	3.0	3.5	450	-	460	470	120°
HH-S50503YS1	AlGaInP	Yellow	1.8	2.4	500	-	585	595	120°
HH-S50503WS1	InGaN	White	3.0	3.5	3500	-	2800K	-	120°

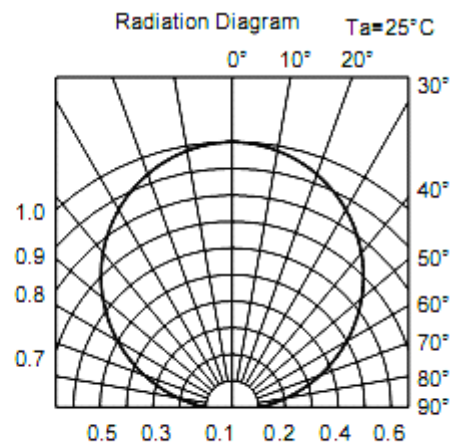
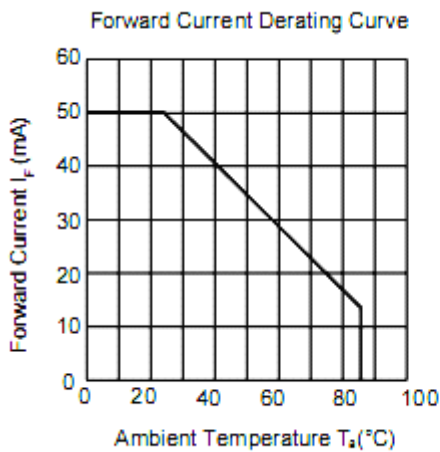
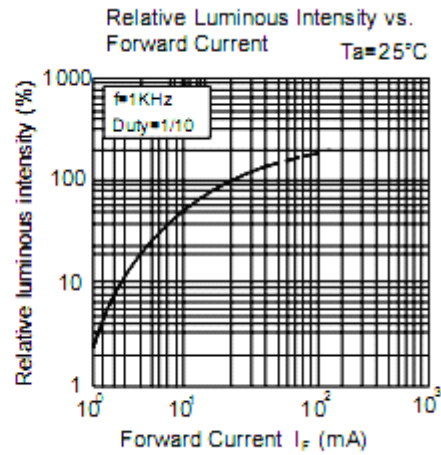
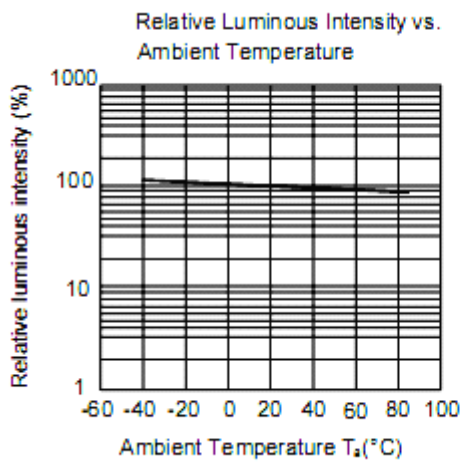
Note: measurement tolerance: ±10%



Typical Electro-Optical Characteristics Curves



Relative Intensity vs. Wavelength



Conditions:



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No.	Test Item	Test Conditions	Sample size	Ac/Re
1	Operation Life	Test If=DC60mA Temp: Room temperature Test time=1000hrs	22	0/1
2	High Temperature High Humidity	Temp. =+85°C RH=85%HR Test time=1000hrs	22	0/1
3	Thermal Shock	-35°C ~ +85°C 20min 10s 20min Test Time=300cycles	22	0/1
4	High Temperature Storage	High Temp. =+85°C Test time=1000hrs	22	0/1
5	Low Temperature Storage	Low Ta=-35°C Test time=1000hrs	22	0/1
6	Temperature Cycle	-35°C ~ +100°C 15min 5min 15min Test Time=300cycle	22	0/1
7	Reflow Soldering	Operation heating: 260°C(Max.), within 10seconds. (Max.)	22	0/1

Judgment criteria of failure for the reliability

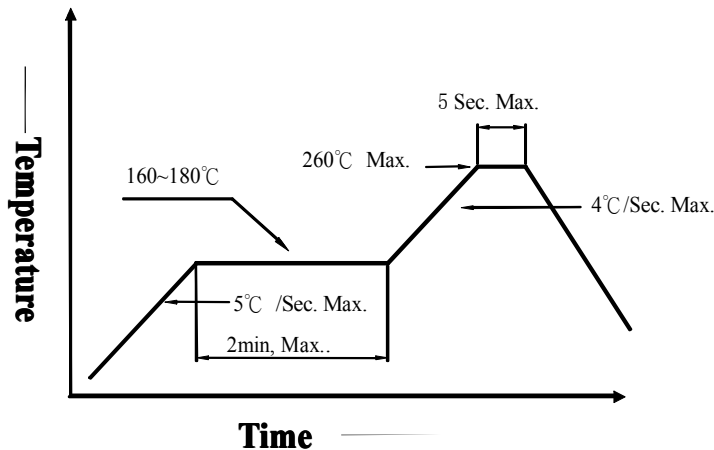
- Iv: Below 50% of initial values
- Vf: Over 20% of upper limit value
- IR: Over 2 times of upper limit value

Note: Measurement shall be taken between 2 hours and after the test LED have been returned to normal ambient conditions after completion of each test.

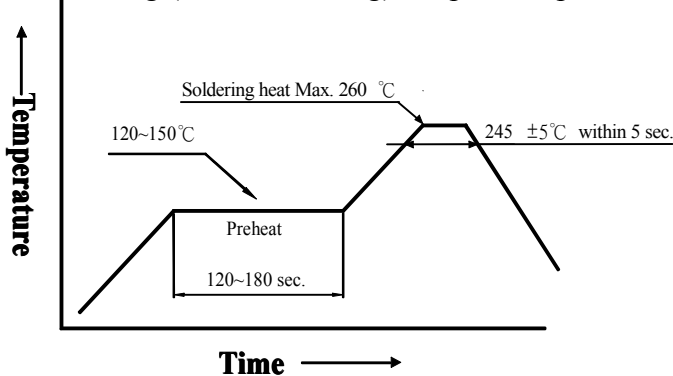


Precautions for Use :

1. Customer must apply the current limiting resistor in the circuit so as to drive the LEDs within the rated current. Otherwise slight voltage shift maybe will cause big current change and burn out will happen.
2. Also, caution should be taken not to overload the LEDs with instantaneous high voltage at the turning ON and OFF of the circuit.
3. Storage:
 - 3.1 Don't open the moisture proof bag before ready to use the LEDs.
 - 3.2 The LEDs should be kept at 30°C or less and 60%RH or less before opening the package. The max. storage period before opening the package is 1 year.
 - 3.3 After opening the package, the LEDs should be kept at 30°C/35%RH or less, and it should be used within 7 days.
 - 3.4 If the LEDs be kept over the conditions of 3.4, baking is required before mounting. Baking condition as below: 60±5°C for 12 hrs.
4. Soldering condition:
 - 4.1 Manual of soldering:
The temp. of the iron should be lower than 280°C and soldering within 3sec per solder-pad is to be observed.
 - 4.2 Pb-free solder temp. -time profile



4.3 DIP soldering (Wave Soldering) temp. -time profile:



- Note: a) Reflow soldering should not be done more than two times.
 b) Don't put stress on the LEDs when soldering.
 c) Don't warp the circuit board before it have been returned to normal ambient conditions after soldering.



Package Method: (unit:mm)

