SMD LED Data sheet

Part No./: SOL-5050RGB020-XX

SMD 5050 0.2W Series Data Sheet

SOL-5050RGB020-XX

SOL-5050R020-02	**Red**
SOL-5050Y020-02	**Yellow**
SOL-5050G020-03	**Green**
SOL-5050B020-03	**Blue**

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➢ Features:

- **Light emitting angle: 120 degrees**
- **Exterior dimension: 5.0mmx5.0mmx1.55mm**
- **SuitableforallSMTassemblymethods**
- **Meet RoHS standard lead-free soldering**
- **Humidity sensitive level: level 4**

➢ Application:

- **Decoration lighting**
- **Display light source**
- **Visual light source**

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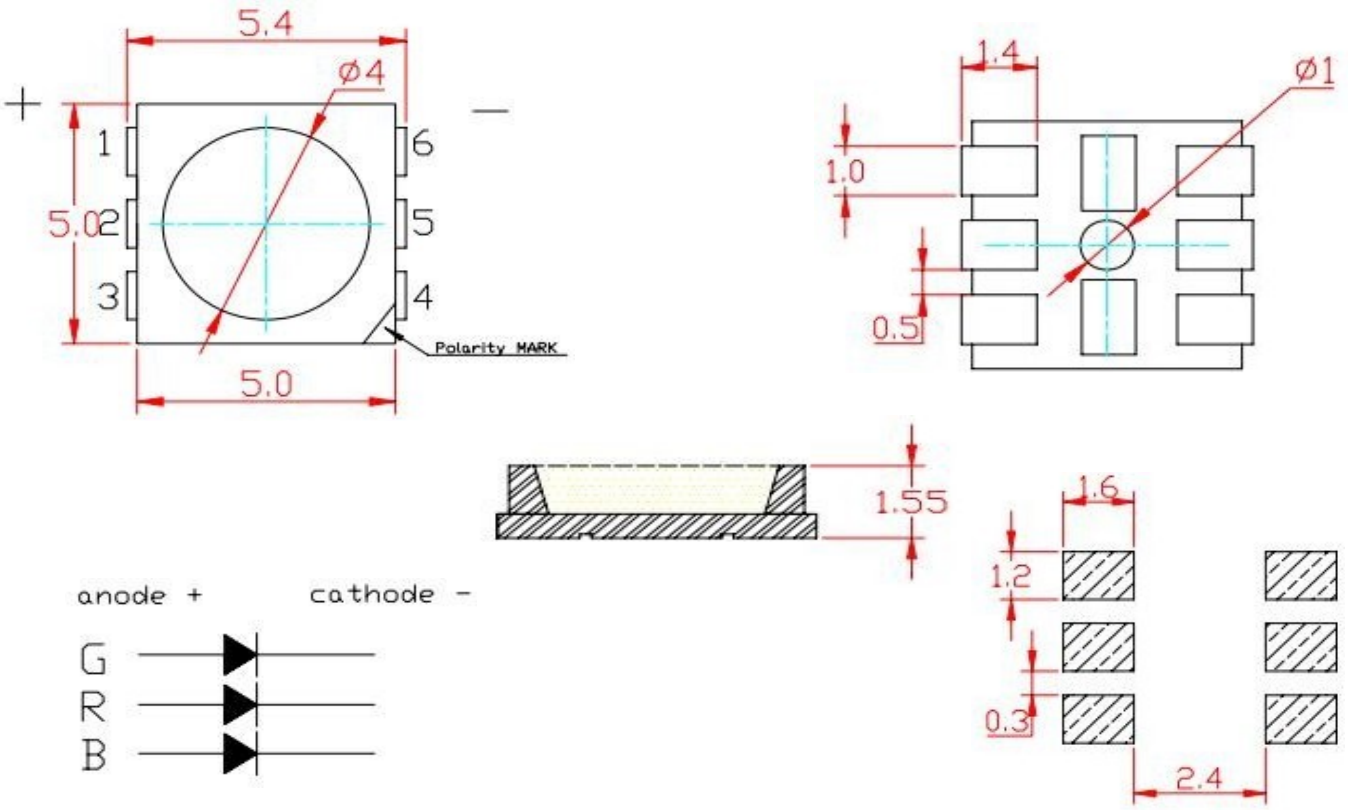
➢ Outline Dimensions:



Soldering pads reference

Note:

- Tolerance is ±0.1mm

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➢ Maximum rating:

Parameter	Symbol	Value	Unit
Power dissipation	Pd	200	mW
Reverse Voltage	If	20*3	mA
Forward current	VR	5	V
Forward Current	Topr	20 ~+80	℃
Operating temperature range	Tstr	35 ~+85	℃
Storage Temperature	IFT	100	mA
Electrostatic Discharge	ESD	2000(HBM)	V
Conditions: Pulse Width≦10msec, and Duty cycle≦1/10.			

➢ Photoelectric parameters:

Parameter	Test Symbol condition			Typical			Unit
				Min	Typ	Max	
Forward voltage	If=20*3mA	Vf	G	2.9		3.3	V
		Vf	R	1.9		2.2	V
		Vf	B	2.9		3.3	V
Domain wavelength	If=20*3mA	λd	G	520		525	nm
		λd	R	615		620	nm
		λd	B	465		470	nm
Luminous flux	If=20*3mA	λd	G	1500		2000	mcd
		λd	R	500		700	mcd
		λd	B	400		600	mcd
Light emitting	If=60mA		θ		120		Deg
Reverse current	Vr=5V		Ir			5	A

Note:

- Vf±0.03V,If±2%,Ra±2.

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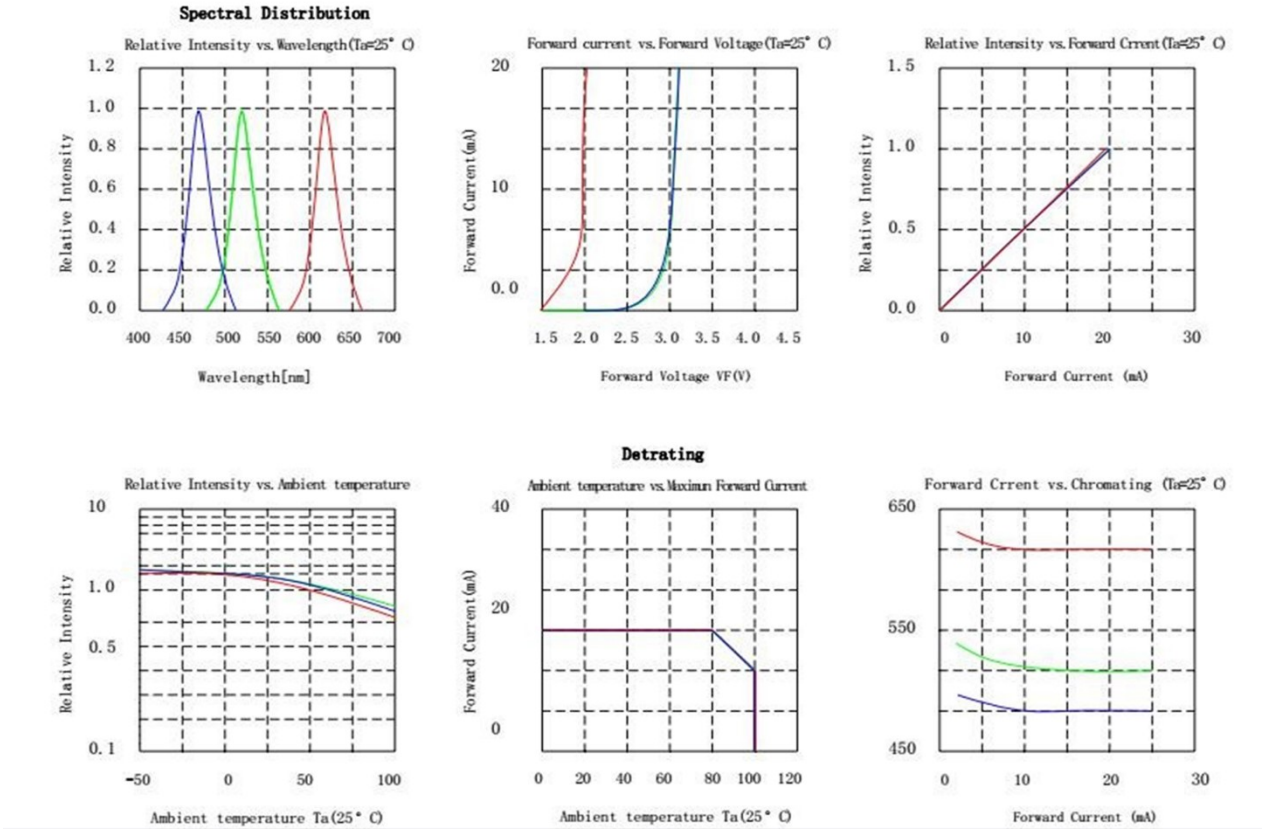
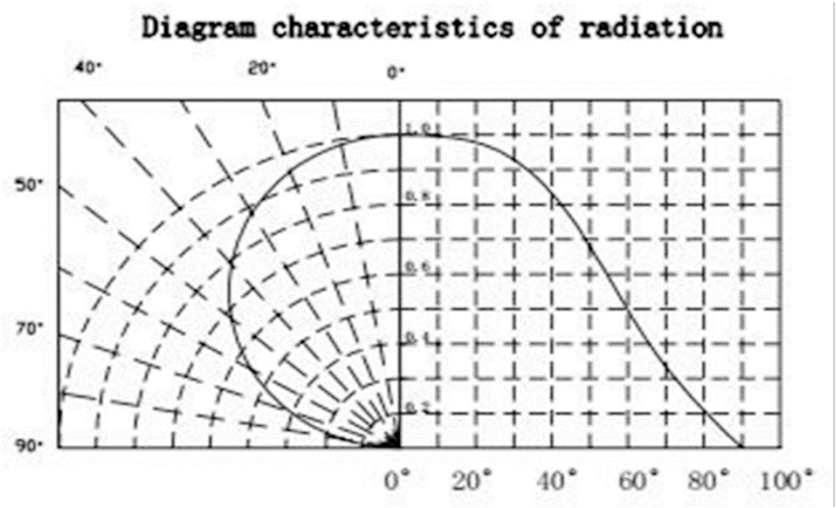
➢ Typical photoelectric characteristic curve:





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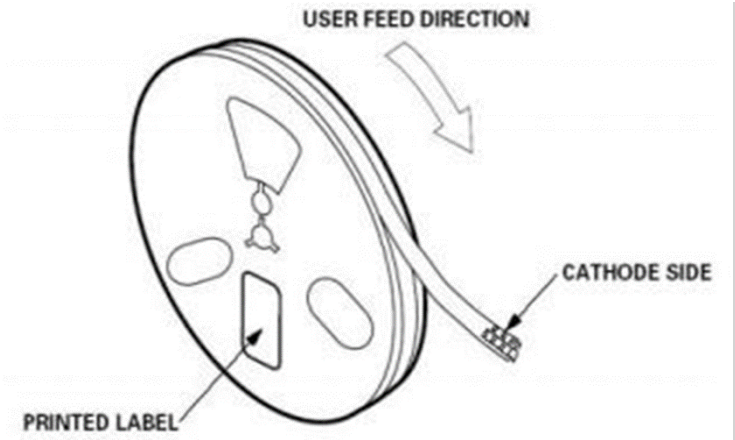
➢ Electrical Characteristics, Tj=25℃:

Test item	Test condition	Test period	Bad quantity
Cold and heat shock	T =-40℃ ~ 100℃	100	0/50
High temperature storage	T =100℃	1000	0/50
High temperature and high	T =60℃, RH=90%	1000	0/50
Low temperature storage	T =-40℃	1000	0/50
Room temperature aging	T =25℃, I =60mA	1000	0/50
High temperature aging	T =80℃, I =60mA	1000	0/50
Low temperature aging	T =-40℃, I =60mA	1000	0/50
Antistatic test	2000V	3 once	0/50
Reflow soldering	250℃< 10sec	3 once	0/50

➢ Reliability test:



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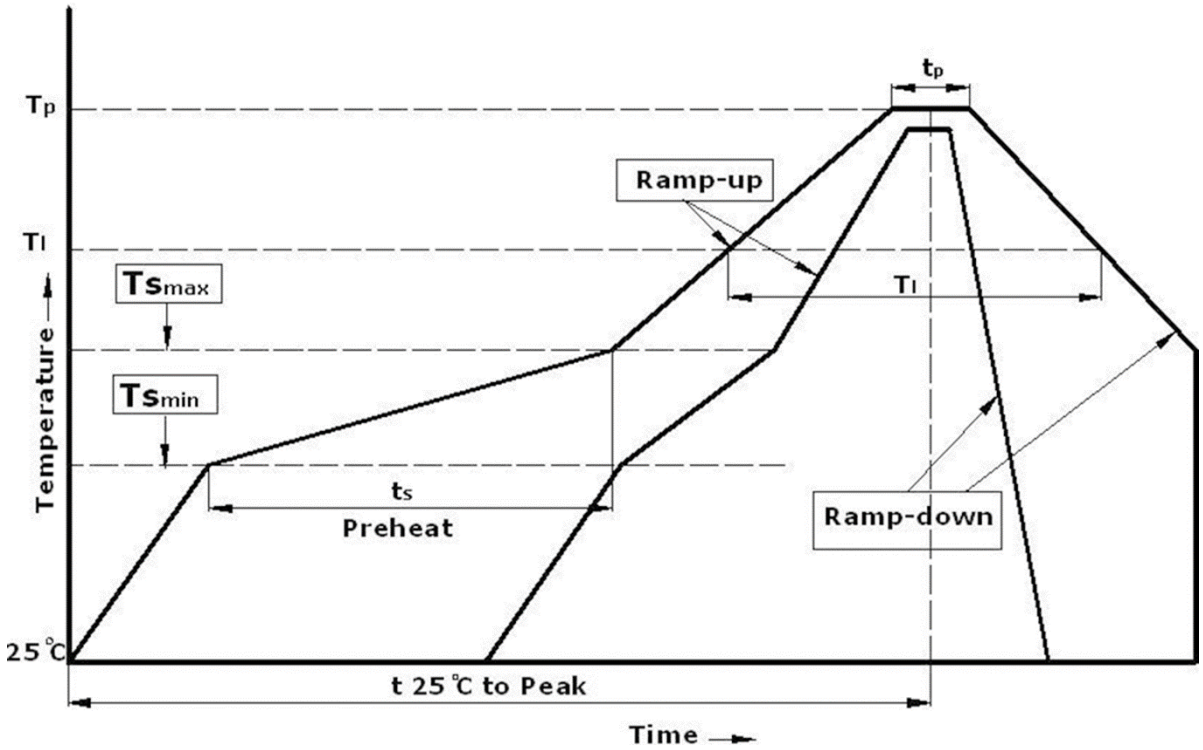
➢ Reflow Profile:



Parameter requirement	Lead soldering	Lead-free soldering
Average rate of rise(T to T)	Maximum 3 degrees C / per second	Maximum 3 degrees C / per second
Minimum preheat temperature(T)	100°C	150°C
Maximum preheat temperature(T)	150°C	200°C
time (t to t)	60-120 seconds	60-180 seconds
Temperature section average temperature(T)	183°C	217°C
Average time of temperature (T)	60-150 seconds	60-150 seconds
Peak temperature (T)	210°C	240°C
Peak temperature (+ 5 C) time (T)	10-30 seconds	20-40 seconds
Lowering speed	Maximum 6 degrees C / per second	Maximum 6 degrees C / per second
25 to the peak temperature time	Max 6 min	Max 8 min

➢ Use matters needing attention:

Before opening the package

At the temperature of not more than 40 degrees Celsius and humidity is not more than 90%RH conditions, LED can be stored for one year, in the storage time, it is recommended to use a desiccant bag with desiccant packaging.

After opening the package

Led needs to be stored at 40 DEG C <=60%RH relative humidity conditions, it is strongly recommended that from opening the package to the completed patch the whole process is completed within 72 hours; unused led, suggested to use the factory moisture-proof agent, and re seal; if you save the environment is not up to the standard, please put led in 70 DEG C oven for 12 hours after the re-use.

Electrostatic prevention

Static and surge voltage will damage the LED, it is recommended to contact the LED must wear anti-static ring and anti-static gloves; all equipment, equipment and machinery must be grounded, it is recommended to take appropriate measures to prevent the surge voltage breakdown LED.

Thank You!