



Technical data sheet
SMD 5050 RGB

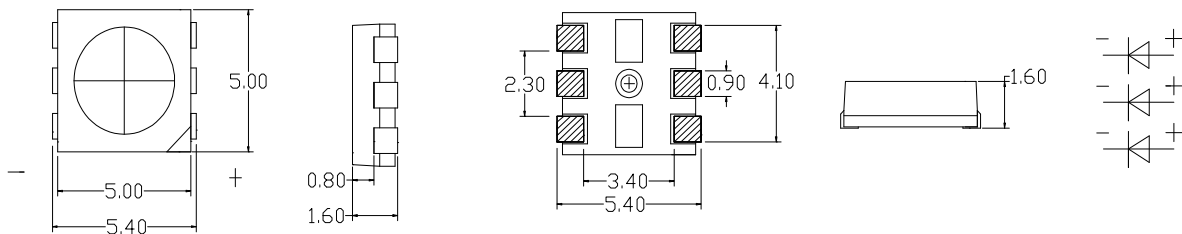
<http://www.yuanlei-led.com>

Features:

- High efficiency;
- Reliable and Robust;
- The product itself will remain within ROHS compliant;
- The series is specially designed for applications requiring higher brightness;
- The LED lamps are available with different colors and intensities;



Dimensional drawing:



All dimensions are

in millimeter

Tolerance is $\pm 0.25\text{mm}$ (0.10") unless otherwise noted

Shape Specification:

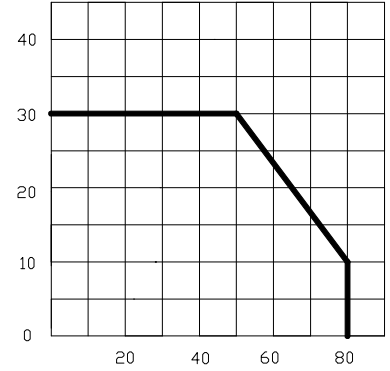
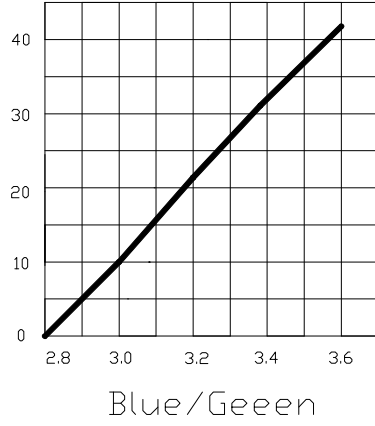
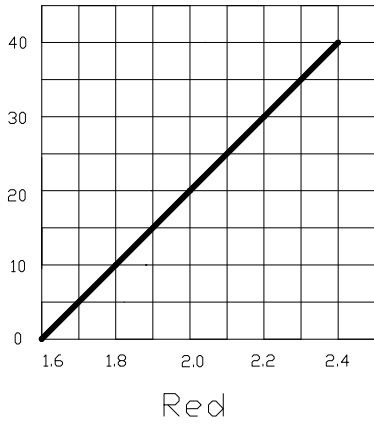
No.	ITEM	SPEC OR DESCRIPTION
1	Lens	<ul style="list-style-type: none"> ◆ No change color ◆ No Disrepair ◆ Scratch (length $\leq 2.0\text{mm}$, Width $\leq 0.25\text{mm}$) ◆ macula ($\leq 0.25\text{mm}$ and $\leq 2\text{EA}$ in Encapsulation reverse) ◆ bubble/氣泡 ($\leq 0.3\text{mm}$ and $\leq 2\text{EA}$ Encapsulation reverse)
2	PIN	<ul style="list-style-type: none"> ◆ No bottom crook ◆ No oxidation ◆ No electropolar reverse
3	Configuration	<ul style="list-style-type: none"> ◆ No Encapsulation reverse ◆ No PIN loosen
4	surface preparation	<ul style="list-style-type: none"> ◆ Cut needn't electroplate



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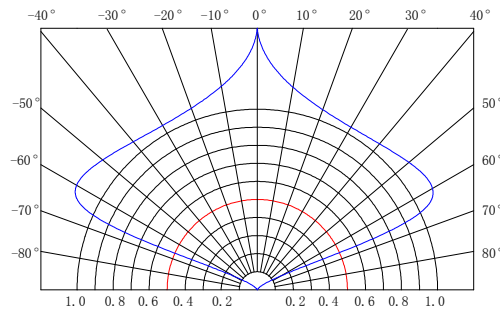
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Opto-Electrical Characteristics:



LED Chip Forward Current vs. Forward Voltage

LED Chip Maximum Forward Current vs. Ambient Temperature



Lighting Angle

Absolute maximum ratings:

Parameter	Symbol	Value	Unit
Forward Current	I_f	20	mA
Reverse Voltage	V_r	5	V
Operating Temperature	T_{opr}	-25~+85	°C
Storage Temperature	T_{stg}	-35~+85	°C
Soldering temperature	T_{sol}	260±5°C (for4sec)	°C
Power Dissipation	P_d	R=40 C/P=60	mW
Pulse Current	I_{FP}	100	mA



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Opto-Electrical Specification:

Parameter	Symbol	Color	Min	Typ	Max	Unit	Tolerance	Test Conditinos
Forward Voltage	Vf	R	1.80	---	2.40	V	± 0.05V	IF forward current=20mA Test Temperature=25°C
		G	2.80	---	3.60			
		B	2.80	---	3.60			
Luminous Intensity	IV	R	100	---	---	mcd	± 10 mcd	
		G	400	---	---			
		B	100	---	---			
Dominant Wavelength	λ d	R	620	---	630	nm	±2nm	
		G	515	---	530			
		B	460	---	475			
Lighting Angle	θ	/	115	120	125	deg	±2	
Reverse Current	IR	/	---	---	10	μA	±0.1μA	Vr=5V

Opto-Electrical Grading Specification:

Forward Voltage	Luminous Intensity	Dominant Wavelength	Chromatic current		Test Conditinos
			X	Y	
/	/	/	/	/	IF forward current=60mA Test Temperature=25°C

Reliability Test Items:

No.	Item	Condition	Time/Cycle	Number of Damaged
1.	Soldering Heat Test	260±5 °C	10 sec	0/60
2	Thermal Shock	0 °C (15sec) ~ 100 oC(15sec)	20 cycle	0/60
3	High Temp. Storage	100 °C	1000Hrs	0/60
4	Low Temp. Storage	-40 °C	1000Hrs	0/60
5	Temperature Cycle Test	-40 °C ~ 80 °C	100 Cycles, 200 Hrs	0/60
6	High Temp. High Humidity Test	60 °C, 90 % RH	1000 Hrs	0/60
7	Operation Life Test 1	Room Temp., 20mA	1000 Hrs	0/60
8	Operation Life Test 2	Room Temp., 30mA	500 Hrs	0/60
9	High Temp. Operation Life Test	85 °C , 5mA	1000 Hrs	0/60
10	Low Temp. Operation Life Test	-30 °C , 20mA	1000 Hrs	0/60



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Judgment Criteria:

Item	Symbol	Test Conditions	Judgment Criteria
Forward Voltage	Vf	$I_F = 20 \text{ mA}$	$\Delta\% < 10 \%$
Leakage Current	Ir	$V_r = 5V$	$< 20 \text{ uA}$
Luminous Intensity	Iv	$I_F = 20 \text{ mA}$	$\Delta\% < 20 \%$
Luminous Flux	lm	$I_F = 20 \text{ mA}$	$\Delta\% < 20 \%$

Caution:

- 1、 After open the package, the LED should be kept at 25°C, 65 % RH environment or less.
- 2、 The LED should be soldered within 48 hours (2 days) after opening the package.
- 3、 The LAMP LED is an ESD sensitive device. All the equipment and machine must be properly grounded.
- 4、 when make use of it, please use static-free container, operator should wear antistatic clothes and rope-static-ring also should make effective ground.
- 5、 Damaged device will appear some symptoms, lower forward voltage, higher leak current, or even short circuit.
- 6、 It's unsuitable for circumfluence soldering
- 7、 ferrochromium soldering :power keep no more than 40W, tip temperature should not pass 280°C, soldering time within 3 second, welding position and lens should keep 1.6mm distance at least
- 8、 wave-soldering: temperature should not pass 265 °C, soldering time within 5 second, welding position and lens should keep 1.6mm distance at least
- 9、 After soldering the LED should keep out off any shake or outer force before it come to normal temperature.
- 10、 when shaped pin should used tong or by professional staff ,keep 2mm at least between lens and bend pin, the pin should be shaped before soldering..
- 11、 the pin can't not be press in high temperature, cut pin in room temperature because in high temperature LED may fail
- 12、 after shape ,pin space should keep in line with the PCB board space
- 13、 LED is one-way continuity, please check electrode before mount, if amount wrong ,the LED chip will damage or fail when LED applied voltage
- 14、 ordinary our LED the long pin is anode ,short pin is cathode, lens without gap is anode ,with gap is cathode.unless other special require and note
- 15、 please design the PCB board to keep a distance between LED and other emit heat component
- 16、 strongly recommend design the board according setting current other than setting voltage .if you are really need setting



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voltage type please consider there may cause influence arise by difference voltage of difference LED.

- 17、the outer voltage change will bring the current index change .unsuitable design and current control,easy cause LED fail .for example excess current will cause LED life short or even burn down , too little electricity will cause lacking light.
- 18、If you need make difference BIN LED in the one module .please confirm whether it can meet the electric and optics characteristic require such as the current balance, emitting and brightness consistency.



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