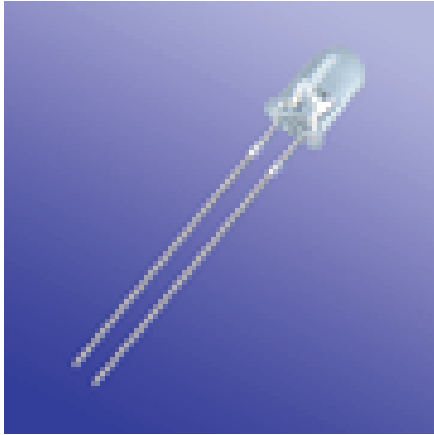

3.0mm Round Type LED Lamp



■ Features :

- Choice of various viewing angles
- Available on tape and reel.
- Reliable and robust
- Pb free
- The product itself will remain within RoHS compliant version.

■ Descriptions :

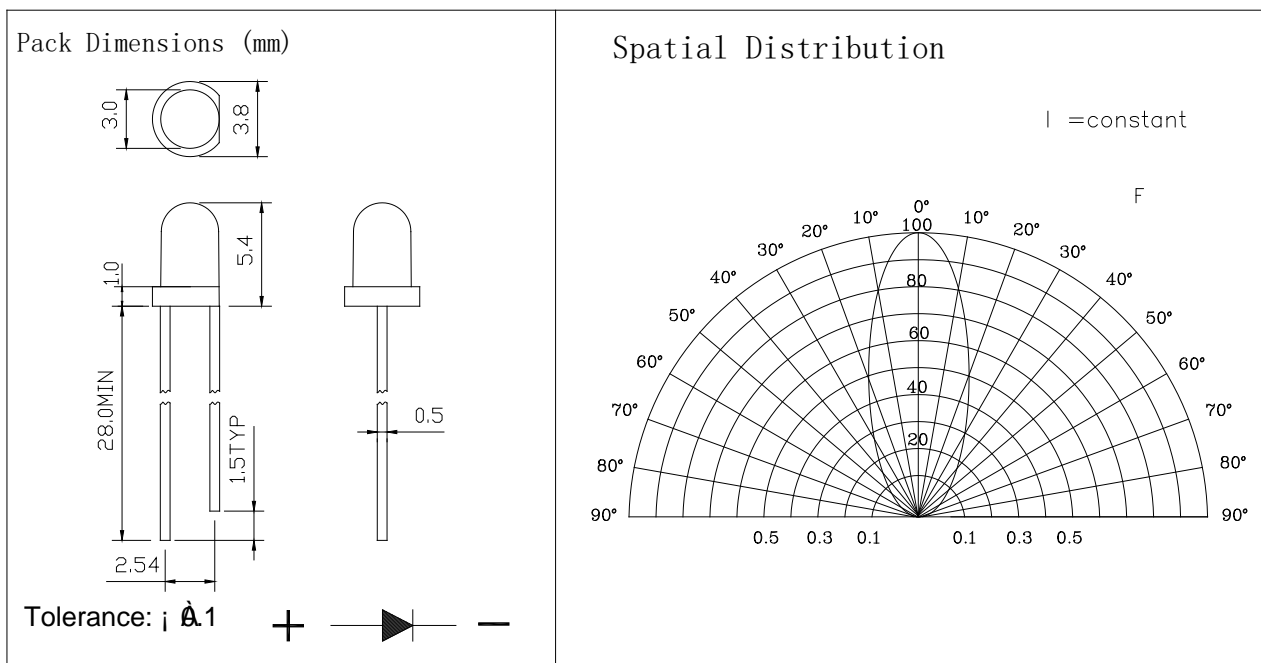
- The series is specially designed for applications requiring higher brightness
- The led lamps are available with different colors, intensities.

■ Applications:

- TV set
- Monitor
- Telephone
- Computer

PART NO.	Material	Emitting Color	Lens Color
204SUWWC	InGaP	Warm White	Water Clear
204SUWC	InGaP	White	Water Clear

■ Packing Dimensions & Spatial Distribution:



Product Model	Emitting Color	LENS	DIE Material	
204SUWWC/204SUWC	Warm White /White	Water Clear	InGaN	
Tolerance Grade	Dimension Tolerance (UNIT: mm Tolerance)			
	0.5~3	3~6	6~30	30~120
Medium(m)	±0.1	±0.2	±0.3	±0.5

2. Absolute Maximum Ratings: (TA=25℃)

Parameter	Symbol	Color	Maximum Rating	Unit
Peak Forward Current	IFp	Warm/White	70	mA
Forward Current	IF	Warm/White	20	mA
Reverse Voltage	VR	Warm/White	5	V
Power Dissipation	Pd	Warm/White	100	mW
Operating Temperature	Topr	Warm/White	-40 ~ +85	℃
Storage Temperature	Tstg	Warm/White	-40 ~ +85	℃
Electrostatic Discharge	ESD	Warm/White	1000	V
Soldering Temperature	260℃ for 5 seconds			

Notes:

1. Absolute maximum ratings Ta=25 ℃.
2. Tolerance of measurement of forward voltage±0.1V.
3. Tolerance of measurement of peak Wavelength±2.0nm.
4. Tolerance of measurement of luminous intensity±15%.
5. Tolerance of measurement of angle intensity±15%.

■ Optical-Electrical Characteristic:(TA=25℃)

Parameter	Symbol	Condition	Color	Min	Type	Max	Unit
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Forward Voltage	VF	IF=20mA	White	3.0	3.3	3.6	V
Reverse Current	IR	VR=5V	White	–	–	10	uA
Color Temp.	λ_d	IF=20mA	Warm White	2800	3000	3500	K
Color Temp.	λ_d	IF=20mA	White	5500	6000	6500	K
Luminous Intensity	Iv	IF=20mA	Warm White	4000	4500	5000	mcd
Luminous Intensity	Iv	IF=20mA	White	4000	5000	6000	mcd
Viewing Angle	2 θ 1/2	IF=20mA	White	–	15	–	deg

■ Reliability Performance Testing):

Test Items & Result

Type	Test Item	Ref. Standard	Test Conditions	Note	Number of Damaged
Environmental Sequence	Resistance to Soldering Heat	JESD22-B106	Tsld=260°C,10sec	2 times	0/22
	Temperature Cycle	JESD22-A104	-40°C 30min ↑↓ 5min 100°C 30min	100 cycle	0/22
	Thermal Shock	JESD22-A106	-40°C 15min ↑↓ 100°C 15min	100 cycle	0/22
	High Temperature Storage	JESD22-A103	Ta=100°C	1000 hrs	0/22
	Low Temperature Storage	JESD22-A119	Ta=-40°C	1000 hrs	0/22
	Power temperature Cycling	JESD22-A105	On 5min -40°C>15min ↑ ↓ ↑ ↓<15min Off5min 100°C>15min	100 cycle	0/22
Operation Sequence	Life Test	JESD22-A108	Ta=25°C IF=30mA	1000 hrs	0/22
	High Humidity Heat Life Test	JESD22-A101	60°C RH=90% IF=20mA	1000 hrs	0/22

Typical Optical/Electrical Characteristics Curves
(Ta=25°C Unless Otherwise Noted)

■ Soldering:

1. Manual of Soldering

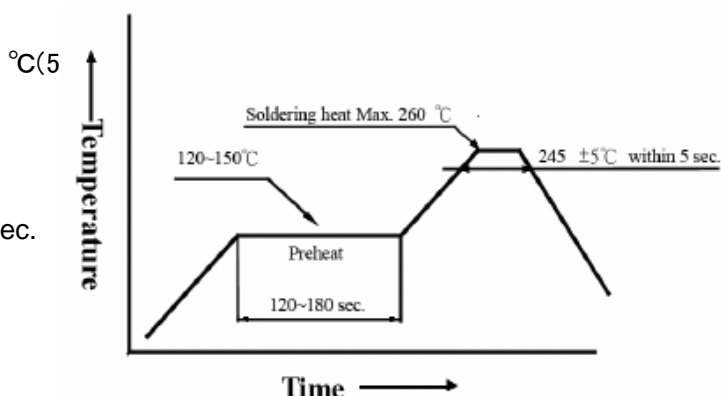
The temperature of the iron tip should not be higher than 260 °C(5) within 3 seconds per solder-land is to be observed.

2. DIP soldering (Wave Soldering):

Preheating: 120 °C(5) with 120~180 sec.

Operation heating: 245 °C ± 5 °C within 5 sec. 260 °C(Max)

Gradual Cooling (Avoid quenching).



■ Handling:

Care must be taken not to cause to the epoxy resin portion of LED while it is exposed to high temperature.

Care must be taken not rub the epoxy resin portion of LED with hard or sharp article such as the sand blast and the metal hook.

Care must be taken there should be more than 3mm from jointing point to the epoxy resin.

■ Notes for designing:

Care must be taken to provide the current limiting resistor in the circuit so as to drive the LED within the rated figures .Also caution should be taken not to overload LED with exorbitant voltage at the turning ON and OFF of the circuit.

When using the pulse drive care must be taken to keep the average current within the rated figures .Also the circuit should be designed so as be subjected to reverse voltage when turning off the LED.

■ Storage:

In order to avoid the absorption of moisture. It is recommended to solder LED as soon as possible after unpacking the sealed envelope.

If the envelope is still packed to store it in the environment as following:

Temperature: -5 °C ~ 45 °C Humidity : RH 60% Max.