



DATASHEET

ES-2835-025V-L1-XXXX

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PRODUCT DESCRIPTIONS

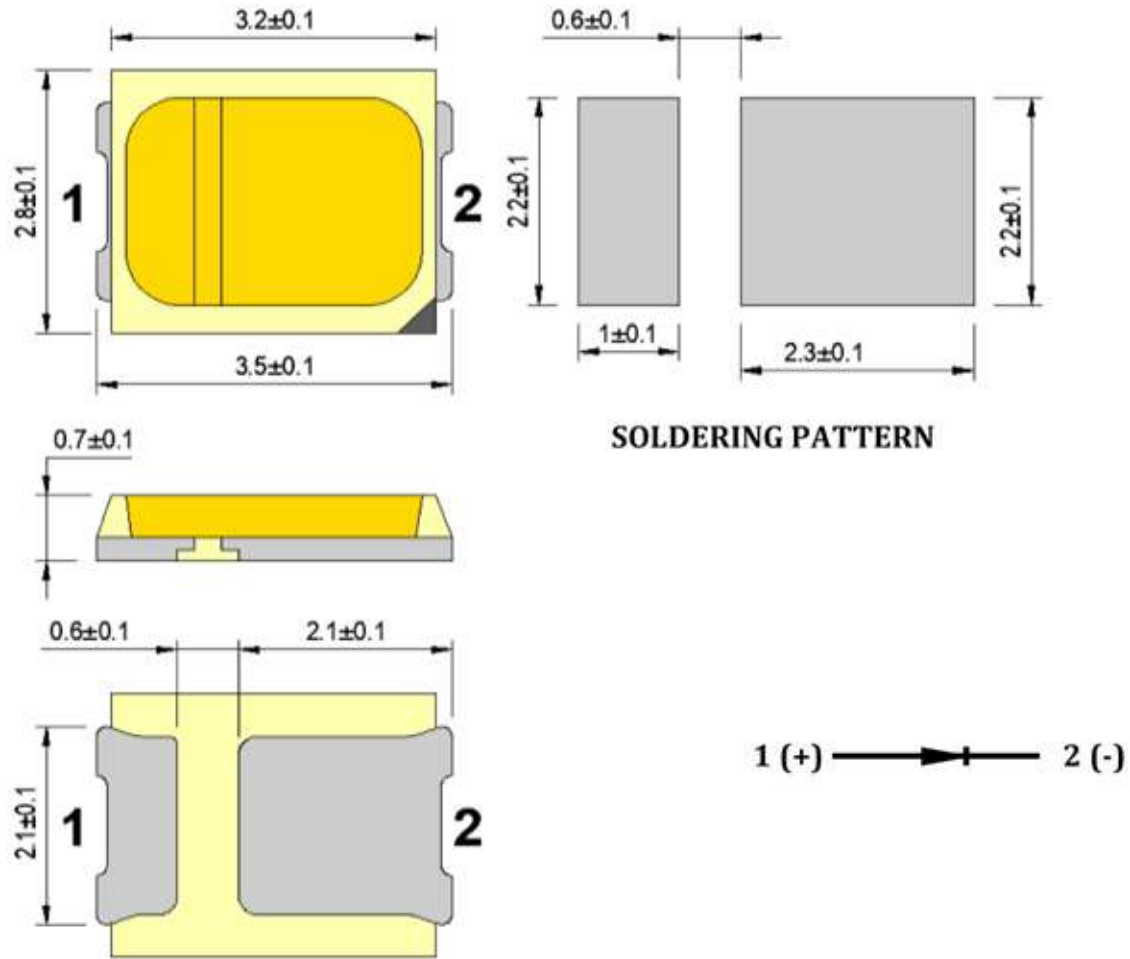
- Emitting Color: AUTO COLOR CHANGE RGB
- Universal PLCC-2 Package
- In built RGB IC
- Copper + PPA Lead Frame
- Low Thermal Resistance
- Long Operative Life
- Wide View Angle (120°)
- Suitable for all SMT Assembly and Soldering Process
- Available on tape and reel Environmentally Friendly, RoHS Compliant



APPLICATION

- LED Bulb, Panel Lights, Tube Light, Strip Light
- Backlight for LCD, Switch, Display, Symbols
- Decorative Display Light, Landscape Light, Entertainment Light
- Signage and Channel Light
- Automotive Lighting
- Other Indoor Lighting Applications
- Other General Use

PRODUCT DIMENSIONS AND RECOMMENDED SOLDERING PATTERN



BASIC INFORMATION

Part No.	View Angle (2θ 1/2)	Chip Material	Lens Type
ES-2835-025-L1-XXX	120 °	AlGaInP / InGaN	Clear/ Transparent

Parameters	MCD		Test Condition
	Minimum	Maximum	
Red	300	700	If : 60 mA
Green	1000	1600	Vf : 1.8 - 5.5 V
Blue	300	700	Ta : 25 °C

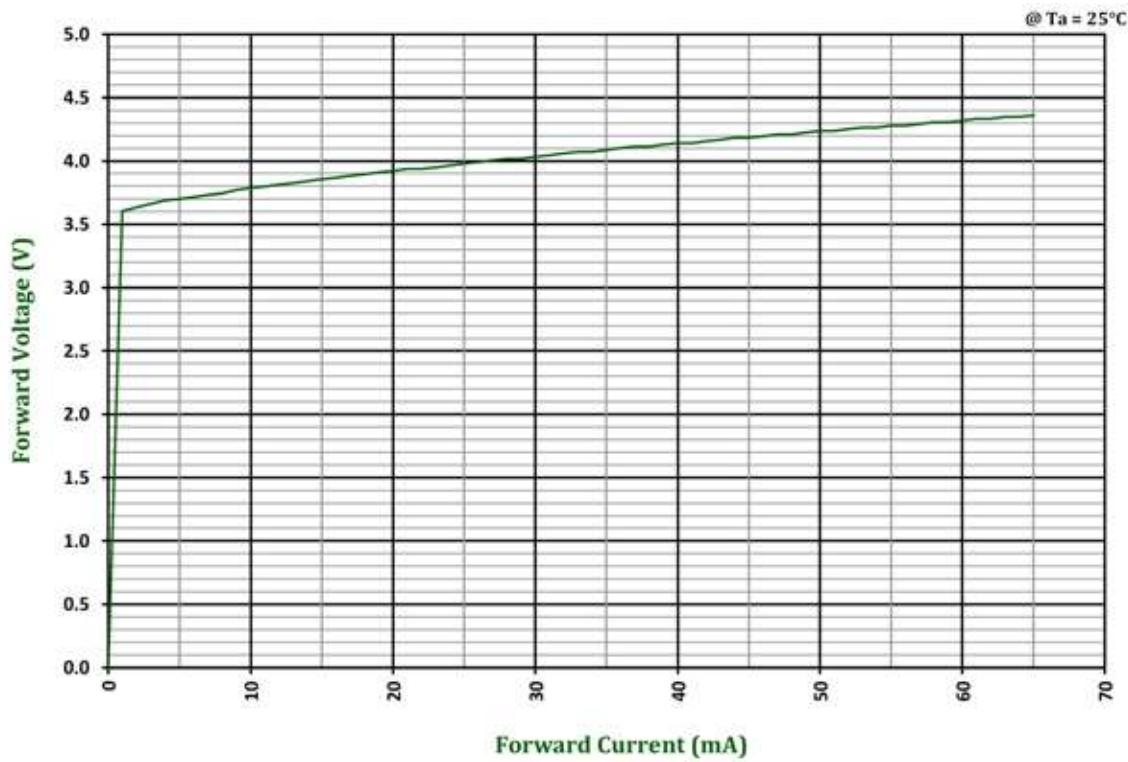
ABSOLUTE MAXIMUM RATINGS (Tj=25°C)

PARAMETERS		MIN.	TYPE	MAX.	UNIT	TEST CONDITIONS
Power Dissipation (Pd)	R	--	132	195	mW	
	G		192	270		
	B		192	270		
	IC		330	358		
Forward Voltage (Vf)	VDD	1.8	--	5.5	V	
Forward Current (If) @VDS: 1.2V	IO1	--	60	65	mA ¹	
Frequency (Ext. ±30%)	FTET	--	2.3	--	Hz	
Dominant Wevelength (λd)	R	617	620	628	nm	
	G	517	520	528		
	B	455	460	465		If :60 mA
Peak Forward Current (Ipf)		--	90	--	mA	Vf :1.8 - 5.5 V
Reverse Voltage (Vr)		--	Not designed for reverse bias	--	V	Ta : 25 °C
Electrostatic Discharge (HBM-ESD)		--	2000	--	V	
Operating Temperature (Topr)		--	-40 ~ +85	--	°C	
Storage Temperature (Tstg)		--	-40 ~ +100	--	°C	
Junction Temperature (Tj)		--	115	--	°C	
Thermal Resistance {Rthj-s}			18		°C/W	

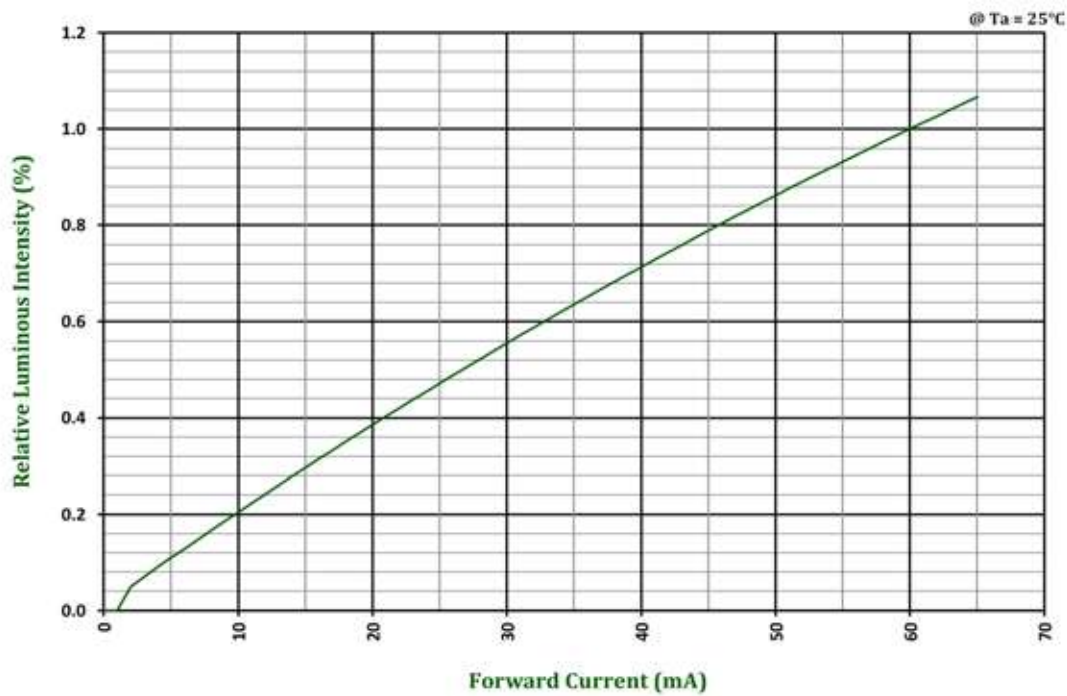
Notes:

1. This is a Constant Current Product. Recommended Constant Current Driver Output: DC 3.5 - 5.5V / 50mA
2. This Product can not be Used in Sync with Other Same Products.
3. Can not Control Luminous Intensity/ Colors/ Cycle Time by External Means.

FORWARD CURRENT V/S FORWARD VOLTAGE



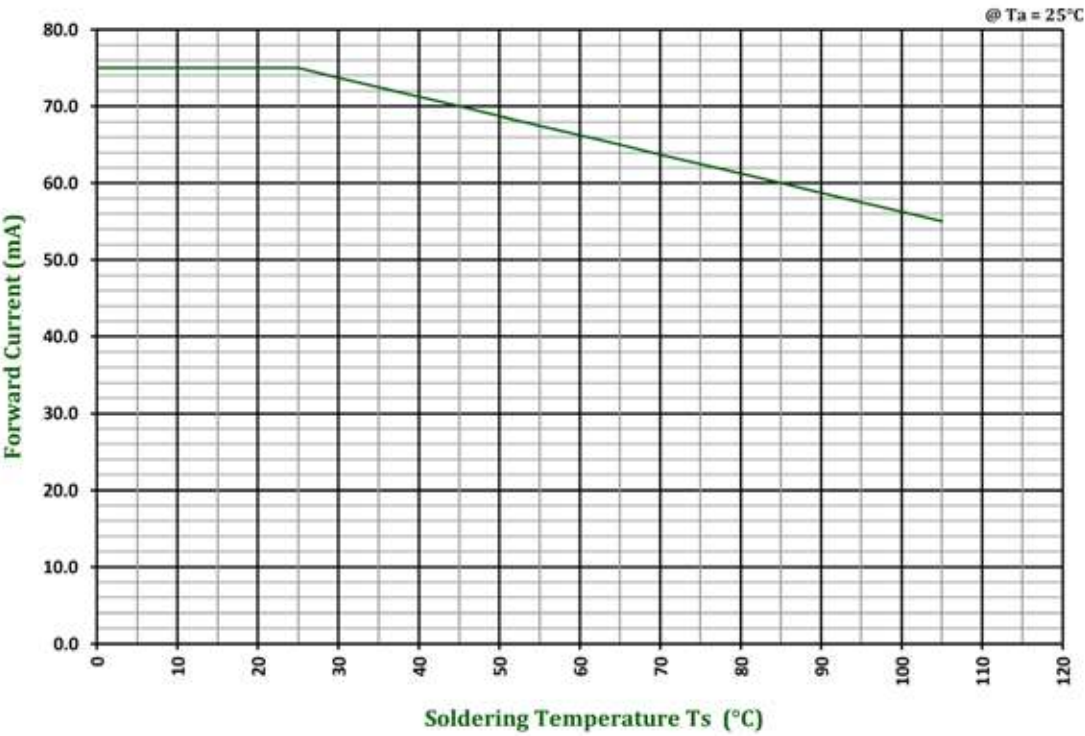
FORWARD CURRENT V/S LUMINOUS INTENSITY



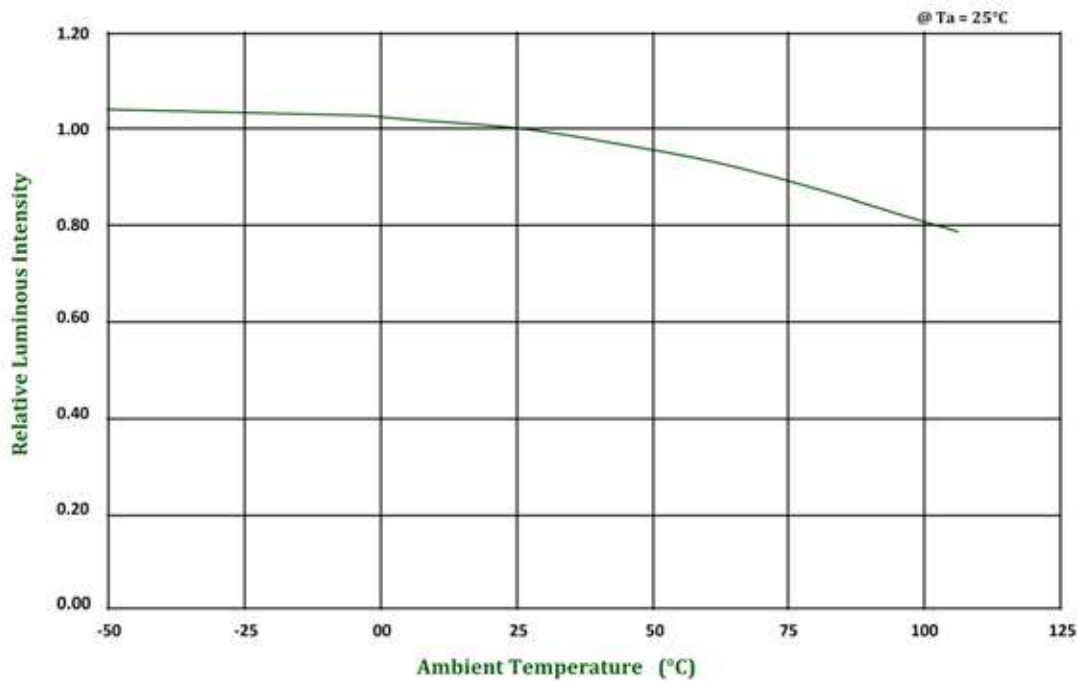
FORWARD CURRENT V/S LUMINOUS INTENSITY PER WATT



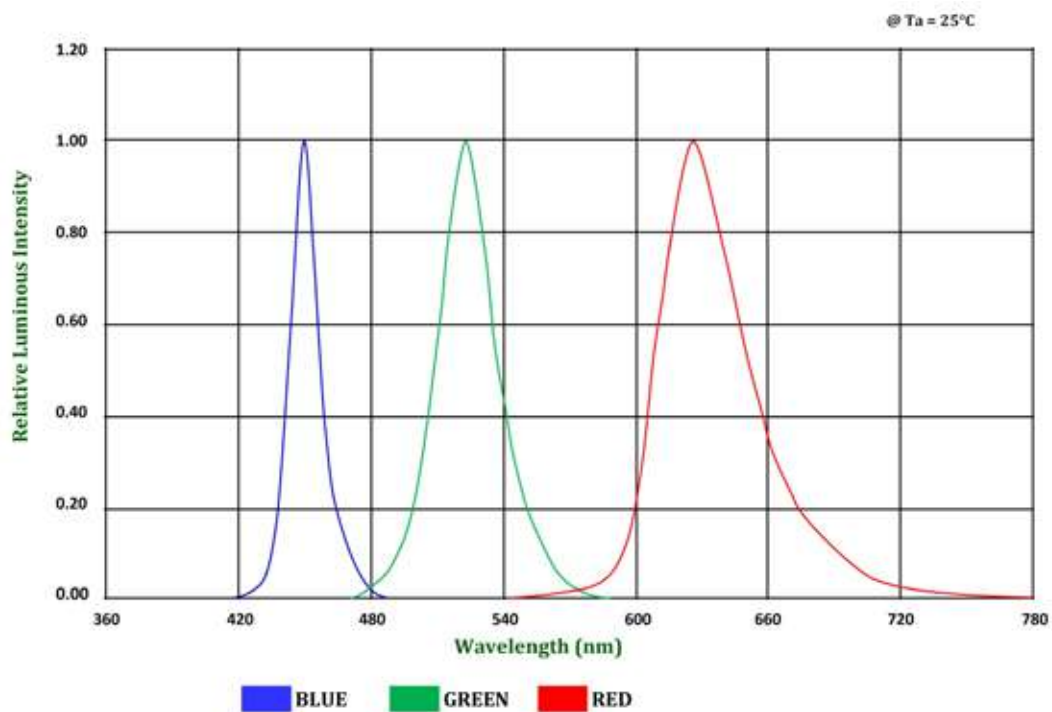
SOLDERING TEMPERATURE V/S FORWARD CURRENT



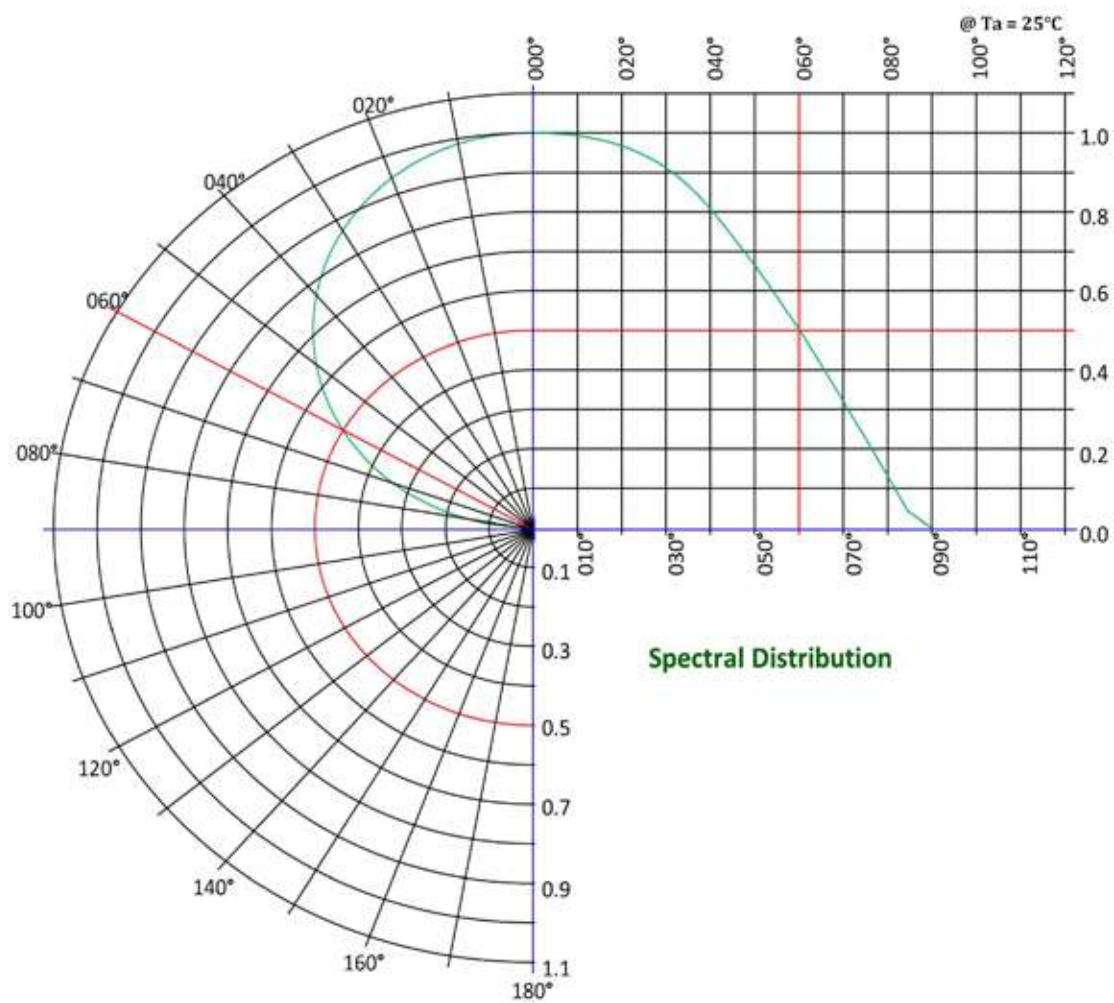
AMBIENT TEMP. V/S RELATIVE INTENSITY



RELATIVE SPECTRAL EMISSION

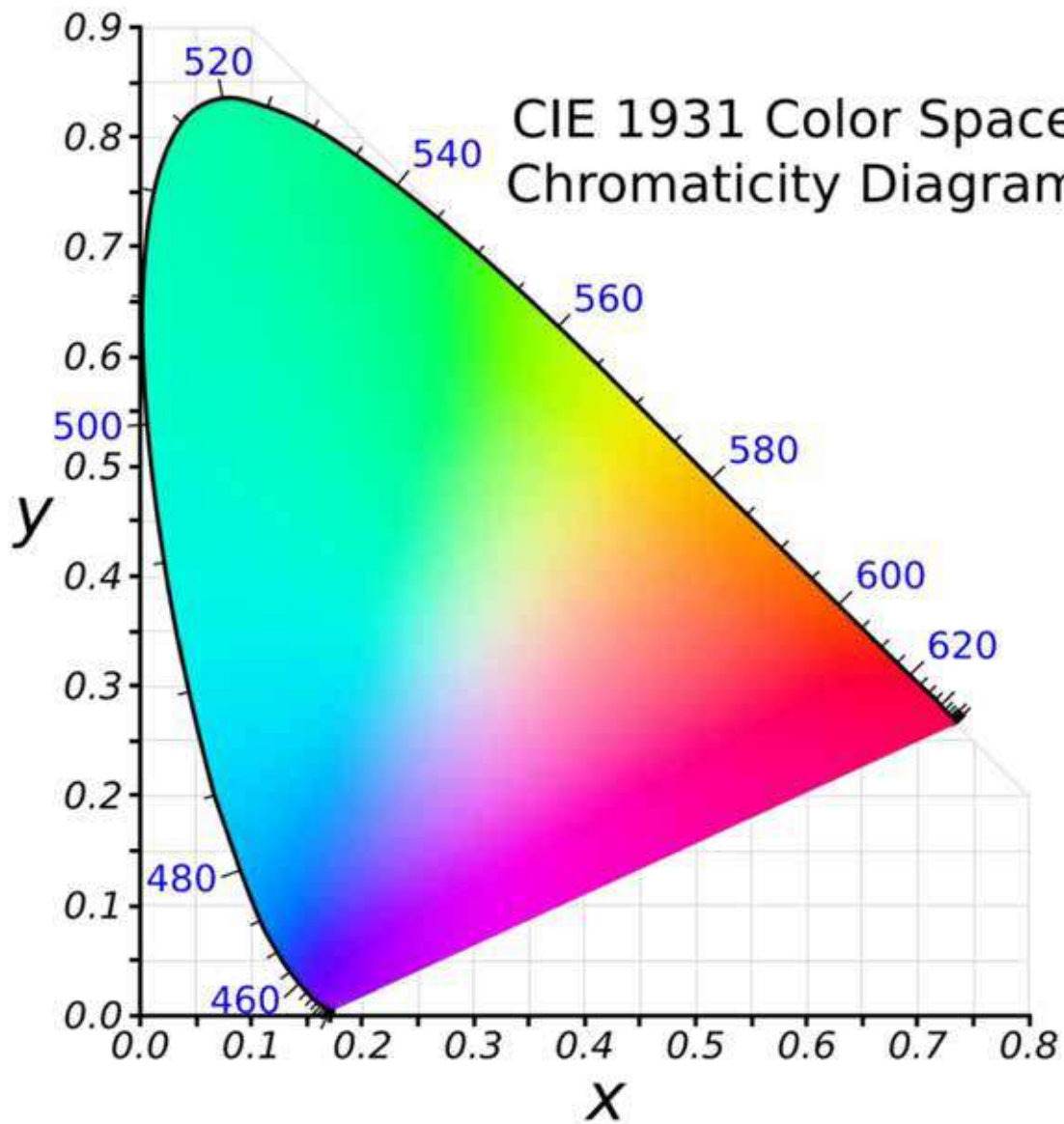


RADIATION CURVE



BIN RANGE & CHROMATICITY COORDINATES

@ Ta = 25°C



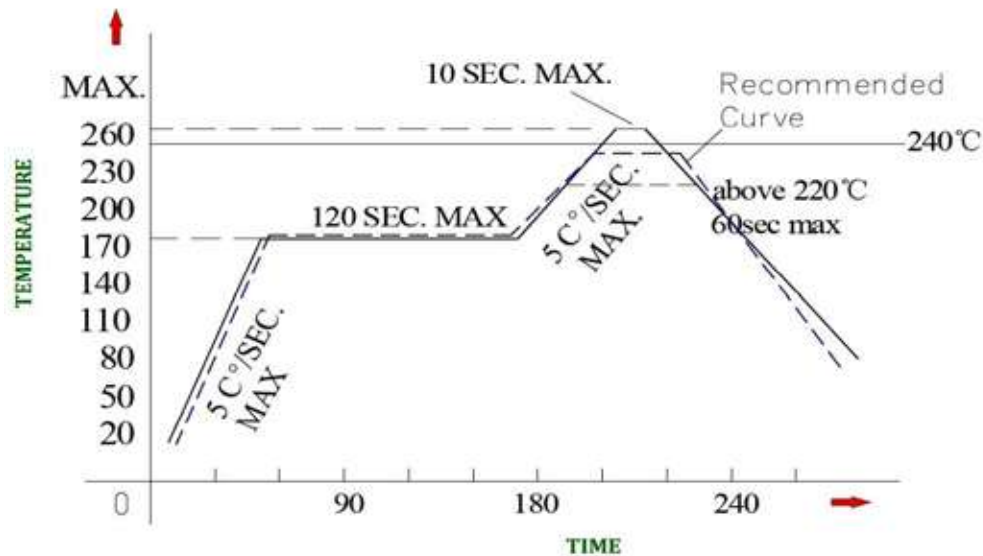
RELIABILITY TEST

Test Item	Ref. Standard	Test Conditions	Time	Quantit	Ac/Re
Reflow	JESD22-B106	Temp 260°C max T=10 sec	3 times	22 Pcs	0/1
Temperature Cycle	JESD22-A104	100°C± 5°C 30min. ↑↓5 min -40°C±50°C 30min.	100 Cycles	22 Pcs	0/1
High Temperature Storage	JESD22-A103	Temp: 100°C±50°C	1000 Hrs.	22 Pcs	0/1
Low Temperature Storage	JESD22-A119	Temp: -40°C±50°C	1000 Hrs.	22 Pcs	0/1
Life Test	JESD22-A108	Ta=25°C±50°C If: 60 mA	1000 Hrs.	22 Pcs	0/1
High Temperature High Humidity Life Test	JESD22-A101	85°C±50°C 85%RH If: 60 mA	1000 Hrs.	22 Pcs	0/1

FAILURE CRITERIA

Ref. Standard	Symbol	Test Condition	Failure Criteria	
			Min.	Max.
Forward Voltage	VF	If: 60 mA	--	U.S.L*)x1.1
Luminous Flux	Lm	If: 60 mA	L.SL*)x0.7	--

SOLDERING INSTRUCTIONS



- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating

SOLDERING IRON

- When hand soldering, keep the temperature of iron below less 300°C less than 3 seconds.
- The hand solder should be done only one times

REPAIR PRECAUTIONS

- Repair should not be done after the LEDs have been soldered.
- When repairing is unavoidable, a double-head soldering iron should be used.
- It should be confirmed in advance whether the characteristics of LEDs will or will not be damaged by repairing.

SOLDERING CAUTIONS

The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs.

Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be proper.

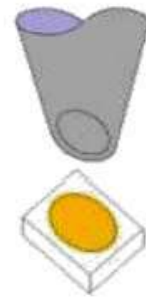
HANDLING PRECAUTIONS

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more prone to damage by external mechanical force. As a result, Special handling precautions must be observed during assembling using silicone encapsulated LED products, Failure to comply might leads to damage and premature failure of the LED.

1. Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.



2. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



3. Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage the internal circuitry.

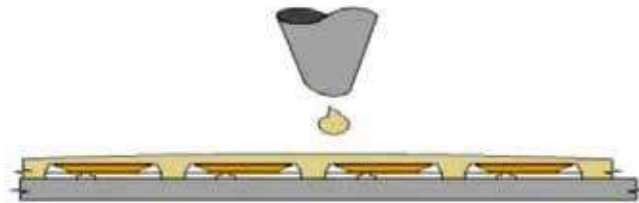


4. Not suitable to operate in acidic environment, $\text{PH} < 7$.



5. LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material.

6. When we need to use external glue for LED application products, please make sure that the external glue matches the LED packaging glue. Additionally, as most of LED packaging glue is silica gel, and it has strong Oxygen permeability as well as strong moisture permeability; in order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total content of Bromine element and Chlorine element in the external glue of the application products is required to be less than 1500PPM.

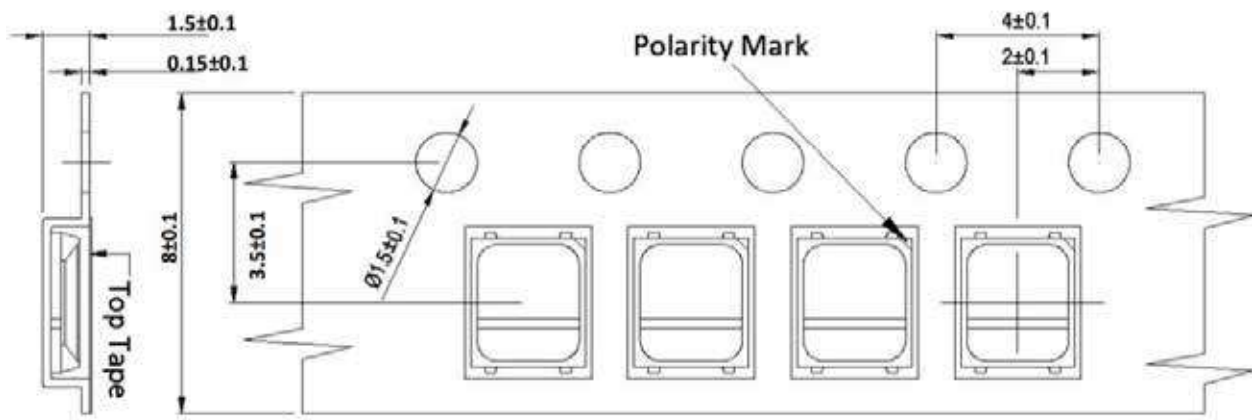


7. After mounting on hard PCB, PCB should not be bend more than 8° to avoid LED damage. Bending PCB mounted LED beyond specified limit will result in excess stress on packaging material which may result in high tension on wire joints and ultimately result in broken wire/ dead LED.

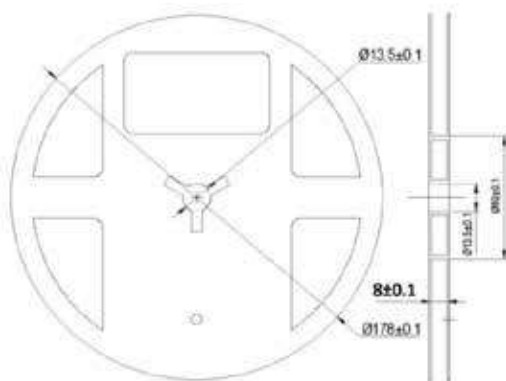
8. For flexible PCB (Flexible PCB LED strip), it is recommended that LED to LED distance should be sufficient and trial production of 5 meters have to be done before actual full scale production.

9. Other points for attention, please refer to our LED user manual.

TAPE AND REEL



QUANTITY / REEL: 4000 PCS



Notes:

- (1) Quantity : 4,000pcs/Reel
- (2) Cumulative Tolerance : Cumulative Tolerance/10 pitches to be $\pm 0.2\text{mm}$
- (3) Adhesion Strength of Cover Tape : Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier tape at the angle of 10°C to the carrier tape
- (4) Package : P/N, Manufacturing data Code No. and quantity to be indicated on a damp proof Package.