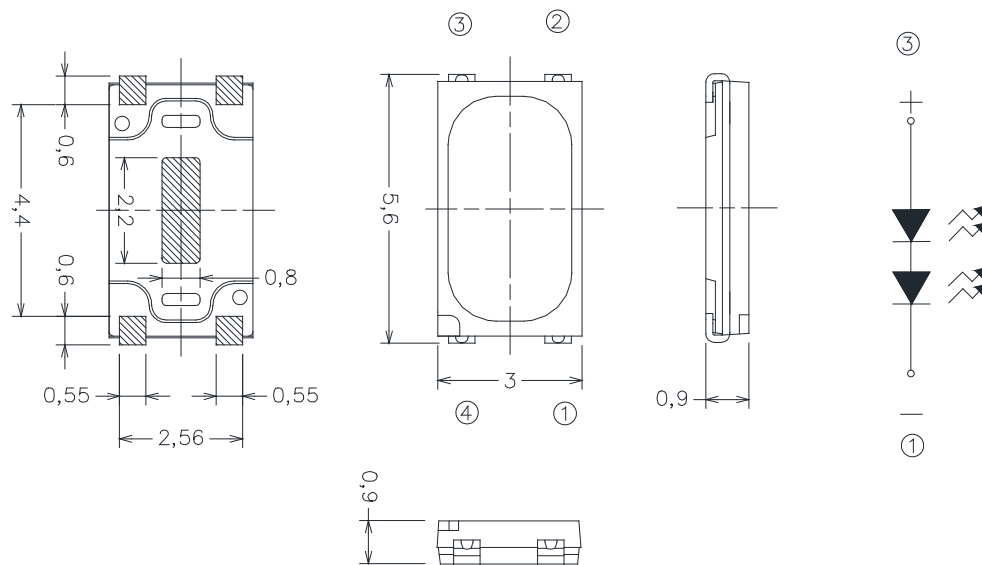


Features

- 5.6mm*3.0mm SMT LED, Super thin (0.90H mm)
- Wide Viewing Angle
- Various Colors
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow and wave solder process.
- Meet ROHS Green Product

Applications

- Backlight and Indicator

Package Dimensions

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.2\text{mm}$ (.0079") unless otherwise noted.
3. Specifications are subject to change without notice
4. This drawing is only for indication, not as a basis for the actual structure.

**Selection Guide**

Part No	Lens Type	Dice	Emitted Color
FSL-5630090WW-F2T06H2452SBD	Yellow	InGaN	White

Electrical / Optical Characteristics At Ta=25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Φ_v	Luminous Flux	24.0	45.0	52.0	Lm	If=60mA
2 θ 1/2	Viewing Angle		120		deg	
Tc	Color Temperature	2550	5700	7000	K	If=60mA
CRI	Color Rendering Index	70				If=60mA
VF	Forward Voltage	5.8	6.0	7.0	V	If=60mA
IR	Reverse Current			50	μ A	VR=5V

Note:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 optical centerline value

Absolute Maximum Ratings At Ta=25°C

Parameter	White	Unit
Power Dissipation	350	mW
Peak Forward Current(duty 1/10@10ms)	300	mA
Continuous Forward Current (each dice)	100	mA
Dreading Linear From 25°C	0.25	mA/°C
Reverse Voltage(each dice)	10	V
Thermal Resistance (Junction/Soldering point)	21	° C/W
Junction Temperature	115	° C
Electrostatic Discharge Threshold(HBM)	1000	V
Operating Temperature Range	-40°C to + 85°C	
Storage Temperature Range	-45°C to + 100°C	
Soldering Condition	260°C For 10 Seconds	

Note:

1. 1/10DutyCycle,0.1msPulseWidth

Electrical Optical Characteristics Curves At Ta=25 °C

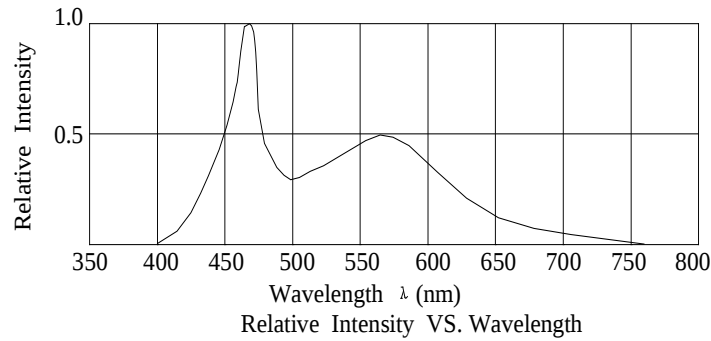


Fig.1 - Forward Voltage Shift vs. Junction Temperature

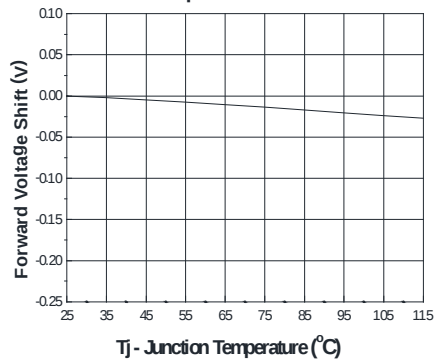


Fig.2 - Relative Luminous Intensity vs. Forward Current

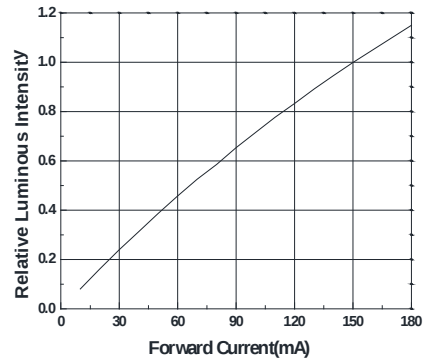


Fig.3 - Relative Luminous Intensity vs. Junction Temperature

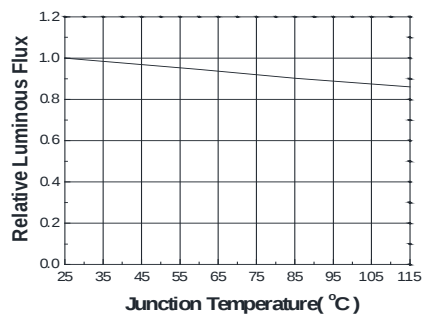


Fig.4 - Forward Current vs. Forward Voltage

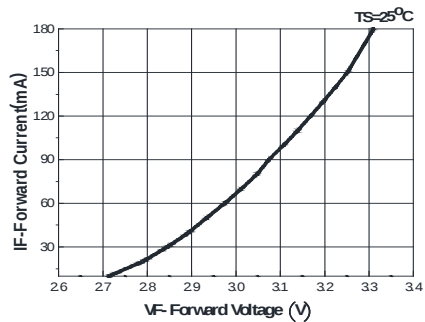


Fig.5 - Max. Driving Forward Current vs. Soldering Temperature

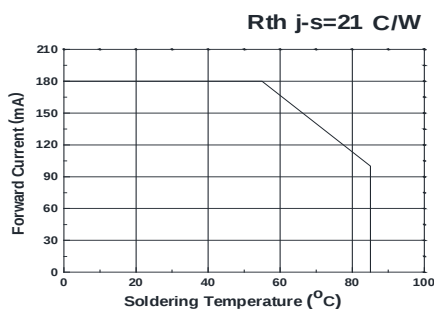
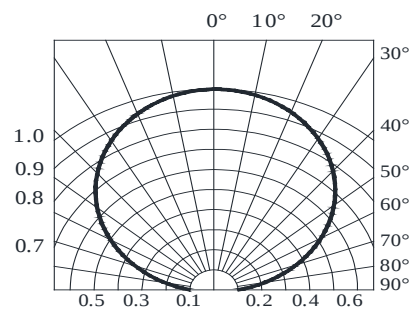


Fig.6 - Radiation Diagram



**Bin Range Of Luminous Intensity (+/-15%)**

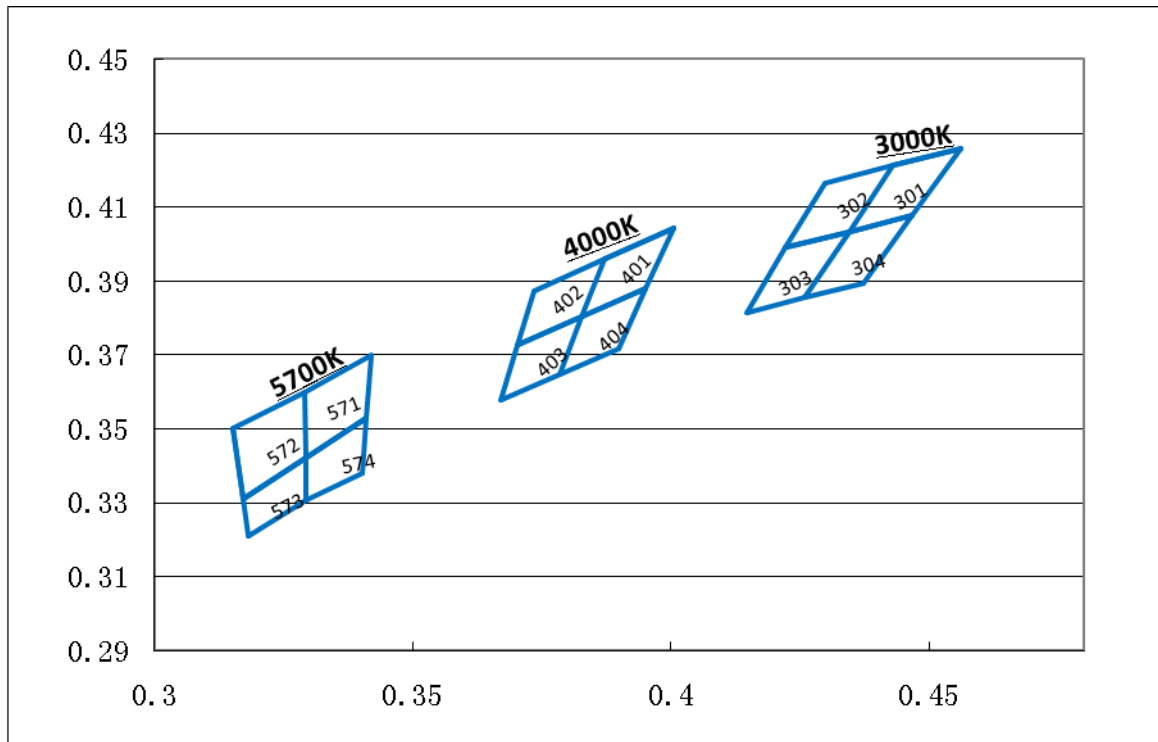
Symbol	Bin Code	Min.	Max.	Unit	Condition
Iv	L24	24	27	lm	IF=60mA
	L27	27	33		
	L33	33	39		
	L39	39	45		
	L45	45	52		

Bin Range Of Forward Voltage (+/-0.1)

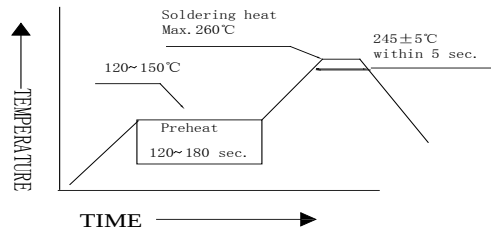
Symbol	Bin Code	Min.	Max.	Unit	Condition
VF	V58	5.8	5.9	V	IF=60mA
	V59	5.9	6.0		
	V60	6.0	6.1		
	V61	6.1	6.2		
	V62	6.2	6.3		
	V63	6.3	6.4		
	V64	6.4	6.5		
	V65	6.5	6.6		
	V66	6.6	6.7		
	V67	6.7	6.8		
	V68	6.8	6.9		
	V69	6.9	7.0		

Chromaticity Coordinates Specifications for Bin Grading (+/-0.02)

CCT	BIN	X	Y	X	Y	X	Y	X	Y
3000K	30K-A	0.4562	0.426	0.4431	0.4213	0.4345	0.4033	0.4468	0.4077
	30K-B	0.4431	0.4213	0.4299	0.4165	0.4223	0.399	0.4345	0.4033
	30K-C	0.4345	0.4033	0.4223	0.399	0.4147	0.3814	0.426	0.3854
	30K-D	0.4468	0.4077	0.4345	0.4033	0.426	0.3854	0.4373	0.3893
4000K	40K-A	0.4006	0.4044	0.3871	0.3959	0.3828	0.3803	0.3952	0.388
	40K-B	0.3871	0.3959	0.3736	0.3874	0.3703	0.3726	0.3828	0.3803
	40K-C	0.3828	0.3803	0.3703	0.3726	0.367	0.3578	0.3784	0.3647
	40K-D	0.3952	0.388	0.3828	0.3803	0.3784	0.3647	0.3898	0.3716
5700K	57K-A	0.3292	0.36	0.342	0.37	0.341	0.353	0.3293	0.3423
	57K-B	0.3153	0.35	0.3291	0.36	0.3293	0.3423	0.3172	0.331
	57K-C	0.3172	0.331	0.3293	0.3423	0.3294	0.3306	0.3183	0.321
	57K-D	0.341	0.353	0.3293	0.3423	0.3294	0.3306	0.3403	0.338

CIE Chromaticity Diagram (+/-0.02)


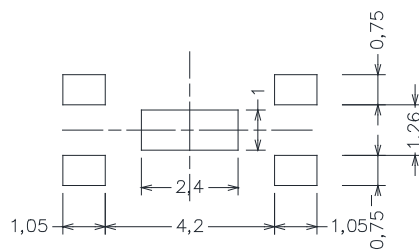
SMT Reflow Soldering Instructions



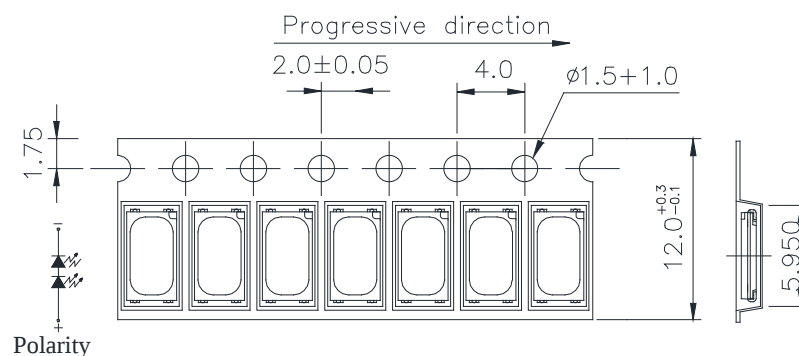
Notes:

1. Selles gives no other assurances regarding the ability of to withstand ESD. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.
2. Reflow soldering should not be done more than two times.
3. Do not stress LED when soldering, and do not warp the circuit board after soldering
4. While using Iron, Power dissipation of Iron should be smaller than 25W, and temperature should be controllable. The work should be finished within 2 sec under 320°C for once only.

Recommended Soldering Pad Dimensions



Package Specifications (Units: mm(inches))



Notes:

1. The LEDs should be used within a year.
2. The LEDs should be kept in 5~30℃ and 60% RH for less.
3. The LEDs should be used within 24 hours, or else should be kept a 5~30℃ and 30% RH or less. And LEDs should be used within 7 days after opening the package.

Reliability Test Items Conditions

Classification	Test Item	Test Conditions	Test hours	Result
Endurance Test	Operation Life	Connect with a power $I_F=60\text{mA}$ $T_a=\text{Under room temperature}$	1000Hrs	0/20
	High Temperature High Humidity	$T_a=+65^\circ\text{C}\pm 5^\circ\text{C}$ $RH=90\%-95\%$	240Hrs	0/20
	High Temperature Storage	High $T_a=+85^\circ\text{C}\pm 5^\circ\text{C}$	1000Hrs	0/20
	Low Temperature Storage	Low $T_a=-35^\circ\text{C}\pm 5^\circ\text{C}$ Test time=1000hrs	1000Hrs	0/20
Environmental Test	Temperature Cycling	$-45^\circ\text{C}\sim +105^\circ\text{C}$ 15min 5min 15min	300 Cycles	0/20
	Thermal Shock	$-35^\circ\text{C}\sim \pm 5^\circ\text{C}\sim +85^\circ\text{C}\sim \pm 5^\circ\text{C}$ 5min 10sec 5min	300 Cycles	0/20
	Solder Resistance	Preheating: $120^\circ\text{C}-150^\circ\text{C}$, within 2 minutes. Operation heating : 260°C (Max.), within 5 seconds (Max.)	5Cycles	0/20

Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	$V_F(\text{V})$	$I_F=60\text{mA}$	Over $U\times 1.2$
Reverse current	$I_R(\mu\text{A})$	$V_R=5\text{V}$	Over $U\times 2$
Luminous intensity	$I_v(\text{mcd})$	$I_F=60\text{mA}$	Below $S\times 0.5$

Note: 1.U means the upper limit of specified characteristics. S means initial value.

2.Measurment shall be taken between 2 hours after the test pieces have been returned to normal ambient conditions after completion of each test.