



Selection Guide

Part No	Lens Type	Dice	Emitted Color
FSL-1005030W-FAS2NBLX	Yellow	InGaN	White

Electrical / Optical Characteristics At Ta=25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Iv	Luminous Intensity	18	72	112	mcd	IF=2mA
2θ1/2	Viewing Angle		130		deg	
x	Chromaticity Coordinates		0.31			IF=2mA
y			0.31			
VF	Forward Voltage	2.5	2.8	3.3	V	IF=2mA
IR	Reverse Current			50	μ A	VR=5V

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 optical centerline value
2. The chromaticity coordinates(x,y) is derived form 1931 CIE chromaticity diagram.
3. The chromaticity coordinates(x,y) guarantee should be added±0.02 tolerance.

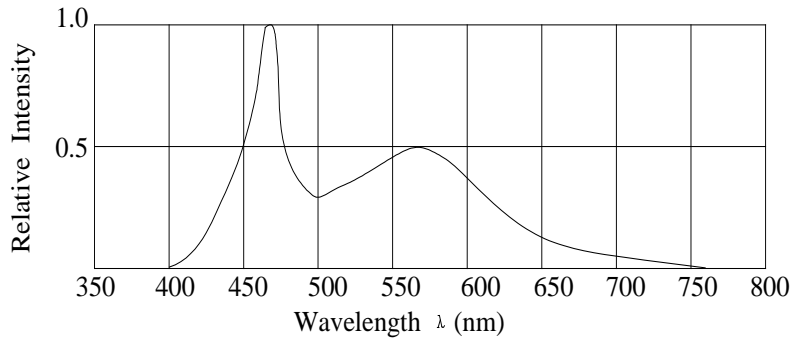
Absolute Maximum Ratings At Ta=25°C

Parameter	White	Unit
Power Dissipation	8	mW
Peak Forward Current	80	mA
Continuous Forward Current	20	mA
Dreading Linear From25°C	0.25	mA/°C
Reverse Voltage	5	V
Electrostatic Discharge Threshold(HBM)	150	V
Operating Temperature Range	-45°C to + 85°C	
Storage Temperature Range	-55°C to + 100°C	
Soldering Condition	260°C For 5 Seconds	

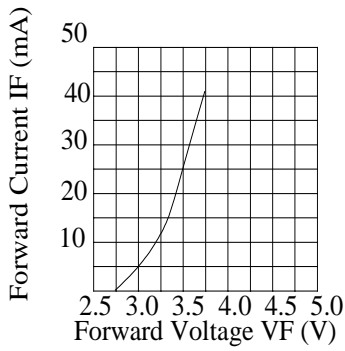
Note:

1. 1/10DutyCycle,0.1msPulseWidth

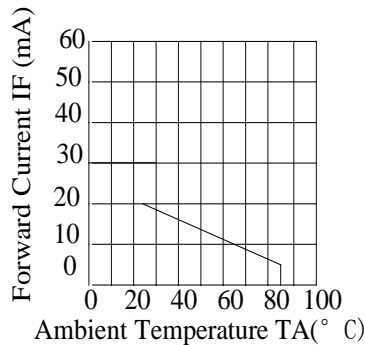
Electrical Optical Characteristics Curves At Ta=25 °C



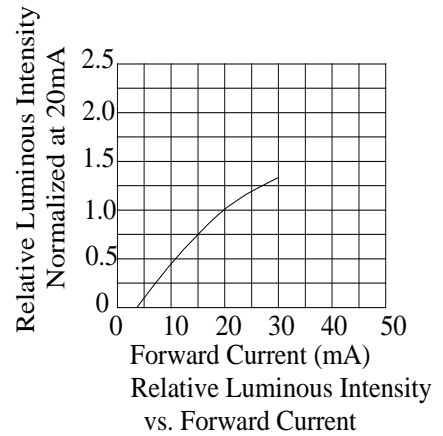
Relative Intensity VS. Wavelength



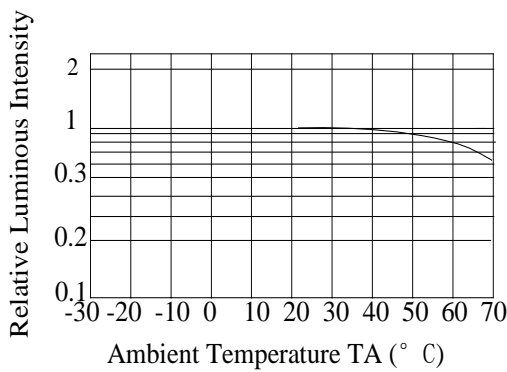
Forward Current vs. Forward Voltage



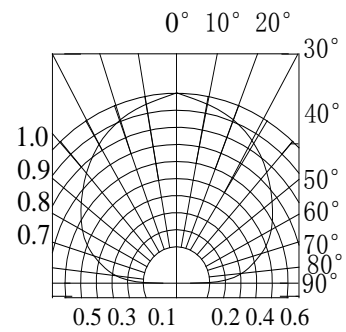
Derating Curve



Relative Luminous Intensity vs. Forward Current



Luminous Intensity vs. Ambient Temperature



Spatial Distribution



Bin Range Of Luminous Intensity (+/-20%)

Symbol	Bin Code	Min.	Max.	Unit	Condition
Iv (White)	M	18	28	mcd	IF=2mA
	N	28	45		
	P	45	72		
	Q	72	112		

Bin Range Of Forward Voltage (+/-0.15)

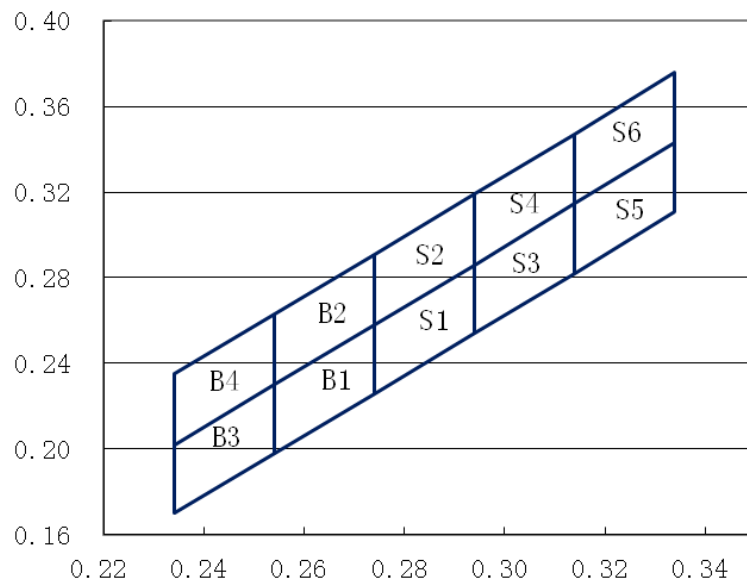
Symbol	Bin Code	Min.	Max.	Unit	Condition
VF	V25	2.50	2.70	V	IF=2mA
	V27	2.70	2.90		
	V29	2.90	3.10		
	V31	3.10	3.30		

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

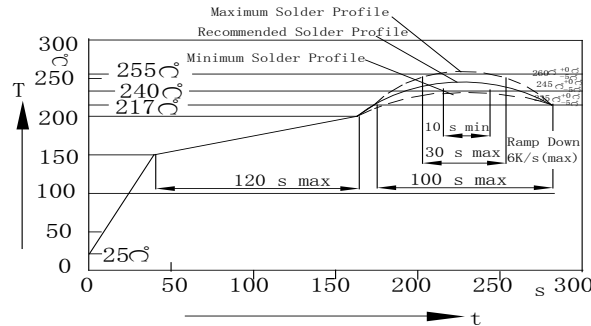
IF=2mA

BIN	X	Y	X	Y	X	Y	X	Y
B1	0.254	0.198	0.254	0.23	0.274	0.258	0.254	0.198
B2	0.254	0.23	0.254	0.263	0.274	0.291	0.274	0.258
B3	0.234	0.17	0.234	0.202	0.254	0.23	0.254	0.198
B4	0.234	0.202	0.234	0.235	0.254	0.263	0.254	0.23
S1	0.274	0.226	0.274	0.258	0.294	0.286	0.294	0.254
S2	0.274	0.258	0.274	0.291	0.294	0.319	0.294	0.286
S3	0.294	0.254	0.294	0.286	0.314	0.315	0.314	0.282
S4	0.294	0.286	0.294	0.319	0.314	0.347	0.314	0.315
S5	0.314	0.282	0.314	0.315	0.334	0.343	0.334	0.311
S6	0.314	0.315	0.314	0.347	0.334	0.376	0.334	0.343

CIE Chromaticity Diagram (+/-0.02)



SMT Reflow Soldering Instructions

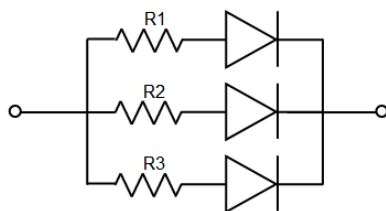


Notes:

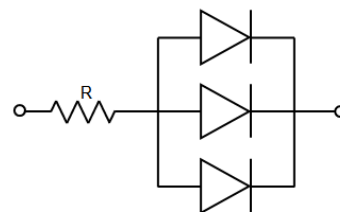
1. Selles gives no other assurances regarding the ability of to withstand ESD. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.
2. Reflow soldering should not be done more than two times.
3. Do not 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 3 sec under 300°C for once only.

Application

In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended to use individual resistor separately, as shown in Circuit A below. The brightness of each LED shown in Circuit B might appear difference due to the differences in the I-V characteristics of those LEDs.



Circuit model A



Circuit model B

Reliability Test Items Conditions

Classification	Test Item	Test Conditions	Test hours	Result
Endurance Test	Operation Life	Connect with a power $I_F=5mA$ T_a =Under room temperature	1000Hrs	0/20
	High Temperature High Humidity	$T_a=+65^{\circ}C\pm5^{\circ}C$ RH=90%-95%	240Hrs	0/20
	High Temperature Storage	High $T_a=+85^{\circ}C\pm5^{\circ}C$	1000Hrs	0/20
	Low Temperature Storage	Low $T_a=-35^{\circ}C\pm5^{\circ}C$ Test time=1000hrs	1000Hrs	0/20
Environmental Test	Temperature Cycling	$-45^{\circ}C \sim +105^{\circ}C$ 15min 5min 15min	300 Cycles	0/20
	Thermal Shock	$-35^{\circ}C \sim \pm5^{\circ}C \sim +85^{\circ}C \sim \pm5^{\circ}C$ 5min 10sec 5min	300 Cycles	0/20
	Solder Resistance	Preheating: $120^{\circ}C-150^{\circ}C$, within 2 minutes. Operation heating : $260^{\circ}C$ (Max.), within 5 seconds (Max.)	5Cycles	0/20

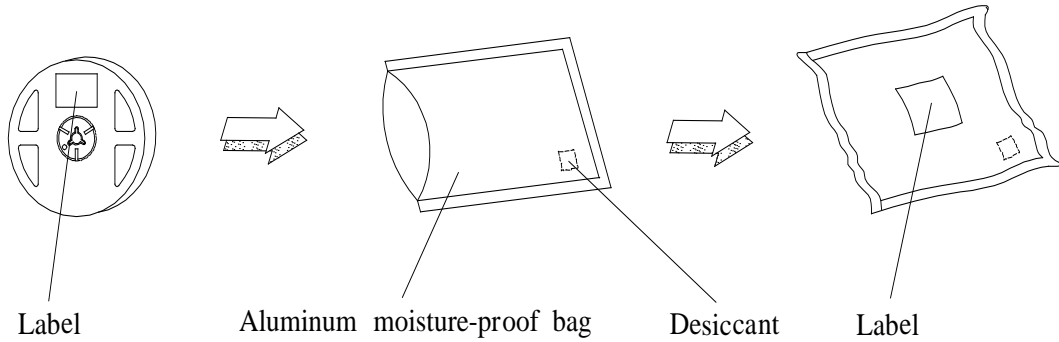
Judgment criteria of failure for the reliability

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

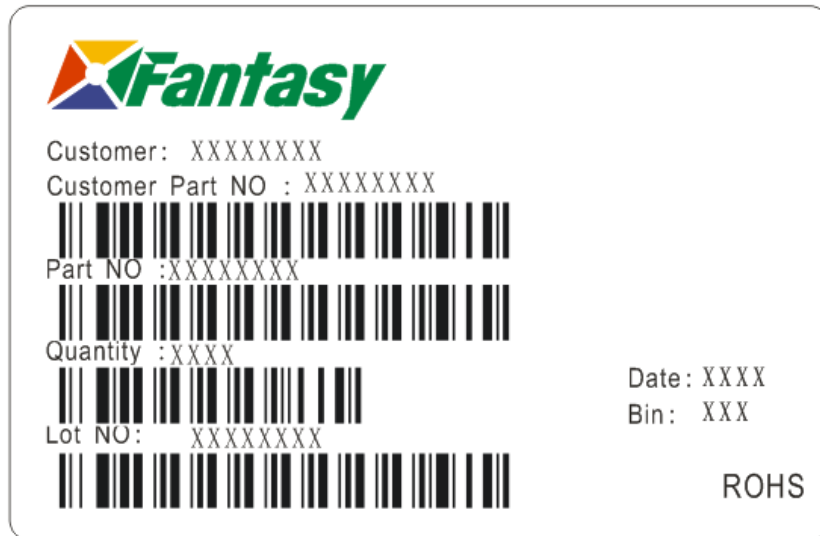
Note: 1.U means the upper limit of specified characteristics. S means initial value.

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

Moisture Resistant Packaging



Label Explanation



Customer: Customer Name
 Customer Part NO: Customer's Product Number
 Part NO : Fantasy Product Number
 Quantity : Packing Quantity
 Lot NO : Lot Number
 Date : Product Date (Week)
 Bin: Rank of Luminous Intensity ,Dom. Wavelength, Forward Voltage