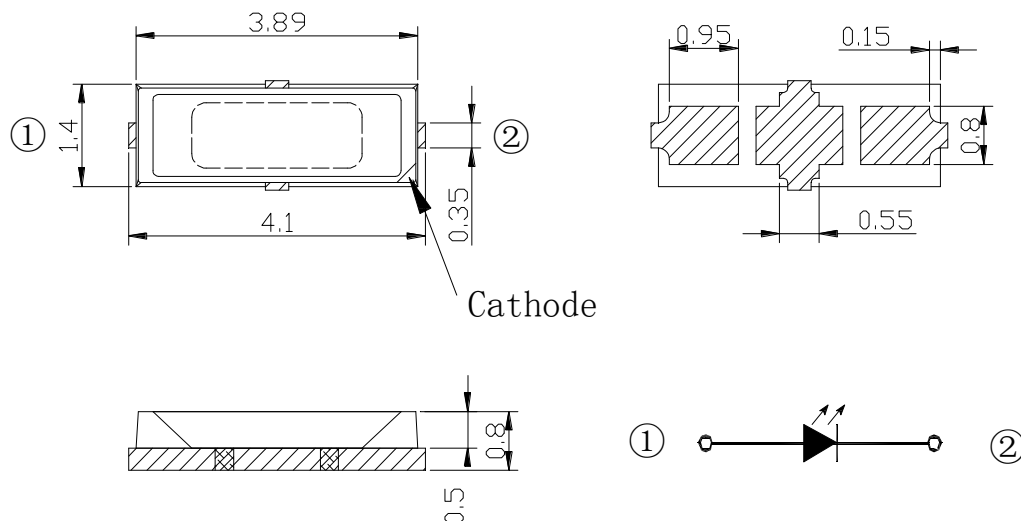


Features

- 4.1mm*1.4mm SMT LED, Super thin (0.8H mm)
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- I.C. compatible
- Meet green product and Pb-free(According to RoHS)
- Package : 2000pcs/Reel

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.



FSL-4014080W-GAN1119

Selection Guide

Part No	Lens Type	Source Color
FSL-4014080W-GAN1119	Yellow	InGaN White

Electrical / Optical Characteristics At Ta=25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Iv	Luminous Intensity		8		cd	IF=60mA
Φv	Luminous Flux	11	15	19	Lm	IF=60mA
2θ1/2	Viewing Angle		110		deg	
x	Chromaticity Coordinates		0.30		nm	IF=60mA
y			0.29		nm	IF=60mA
Tc	Color Temperature		8000		K	IF=60mA
Ra	Color Rendering Index	70				IF=60mA
VF	Forward Voltage	2.9	3.6	3.95	V	IF=60mA
IR	Reverse Current			100	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 from 1931 CIE chromaticity diagram.

Absolute Maximum Ratings At Ta=25°C

Parameter	White	Unit
Power Dissipation	300	mW
Peak Forward Current (1/10 Duty Cycle @ 0.1ms)	100	mA
Continuous Forward Current	75	mA
Reverse Voltage	5	V
Electrostatic Discharge Threshold(HBM)	2000	V
LED Junction Temperature	125	° C
Thermal Resistance (Junction / Bottom, Rth J-B)		K/W
Thermal Resistance (Junction / solder point, Rth J-S)	80	K/W
Operating Temperature Range	-30°C to + 85°C	
Storage Temperature Range	-40°C to + 100°C	
Soldering Condition	260°C For 5 Seconds	

Electrical Optical Characteristics Curves At Ta=25°C

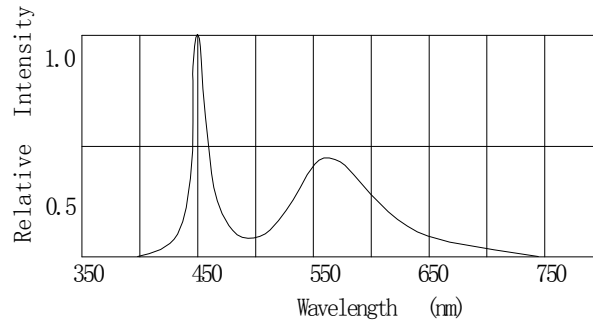


Fig. 1 Relative Intensity VS. Wavelength

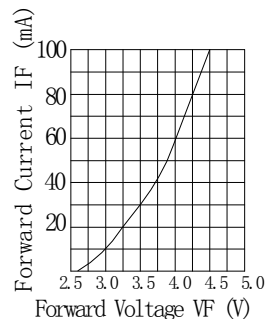


Fig. 2 Forward Current vs. Forward Voltage

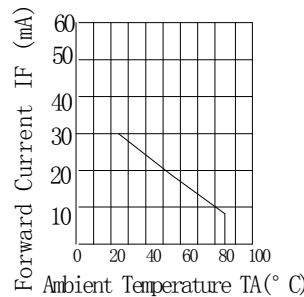


Fig. 3 Forward Current Derating Curve

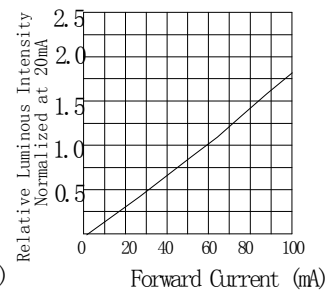


Fig. 4 Relative Luminous Intensity vs. Forward Current

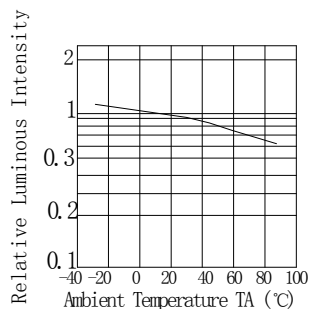


Fig. 5 Luminous Intensity vs. Ambient Temperature

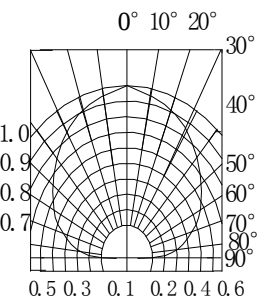


Fig. 6 Spatial Distribution

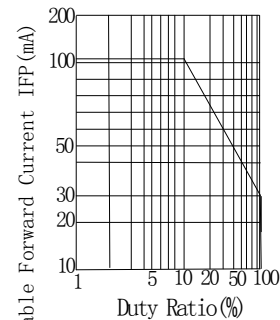


Fig. 7 Duty Ratio vs. Allowable Forward Current

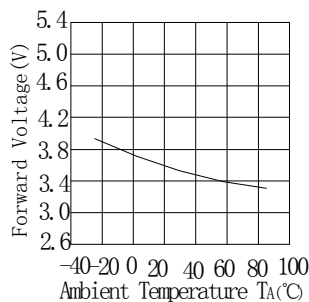


Fig. 8 Ambient Temperature vs Forward Voltage

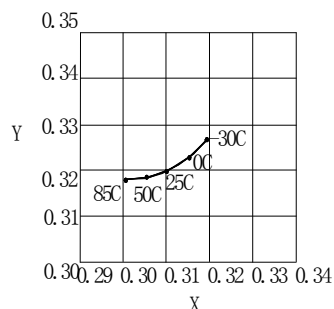


Fig. 9 Ambient Temperature TA vs. Chromaticity Coordinate

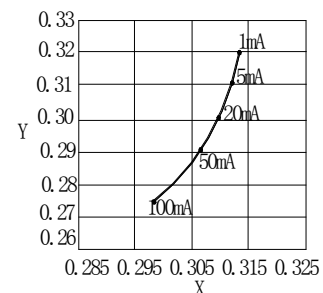


Fig. 10 Forward Current VS. Chromaticity Coordinate



FSL-4014080W-GAN1119

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

Symbol	Bin Code	Min.	Max.	Unit	Condition
Iv	L11	11.0	11.0	mcd	IF=60mA
	L13	13.0	13.0		
	L15	15.0	15.0		
	L17	17.0	19.0		

Bin Range Of Forward Voltage (+/-0.15)

Symbol	Bin Code	Min.	Max.	Unit	Condition
VF	V0	2.90	3.05	V	IF=60mA
	V1	3.05	3.20		
	V2	3.20	3.35		
	V3	3.35	3.50		
	V4	3.50	3.65		
	V5	3.65	3.80		
	V6	3.80	3.95		

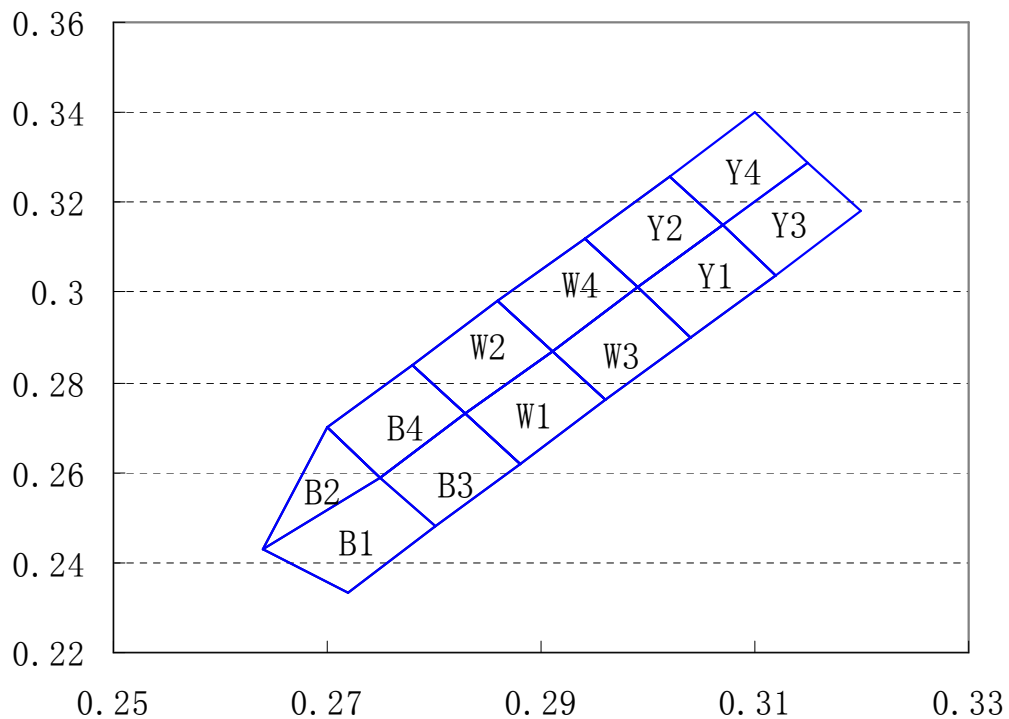
Chromaticity Coordinates Specifications for Bin Grading (+/-0.02)

IF=60mA

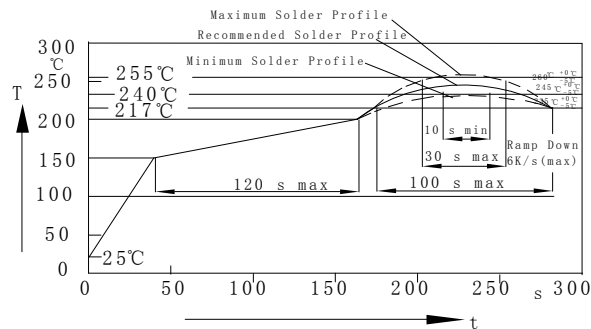
Bin	CIE_x	CIE_y	Bin	CIE_x	CIE_y	Bin	CIE_x	CIE_y	Bin	CIE_x	CIE_y
B1	0.275	0.259	B2	0.264	0.243	B3	0.28	0.248	B4	0.275	0.259
	0.264	0.243		0.27	0.27		0.275	0.259		0.27	0.27
	0.272	0.2335		0.275	0.259		0.283	0.273		0.278	0.284
	0.28	0.248					0.288	0.262		0.283	0.273
W1	0.288	0.262	W2	0.286	0.298	W3	0.296	0.276	W4	0.291	0.287
	0.283	0.273		0.278	0.284		0.291	0.287		0.286	0.298
	0.291	0.287		0.283	0.273		0.299	0.301		0.294	0.312
	0.296	0.276		0.291	0.287		0.304	0.29		0.299	0.301
Y1	0.304	0.29	Y2	0.299	0.301						
	0.299	0.301		0.294	0.312						
	0.307	0.315		0.302	0.326						
	0.312	0.304		0.307	0.315						

CIE Chromaticity Diagram (+/-0.02)

IF=60mA



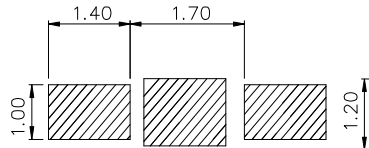
SMT Reflow Soldering Instructions



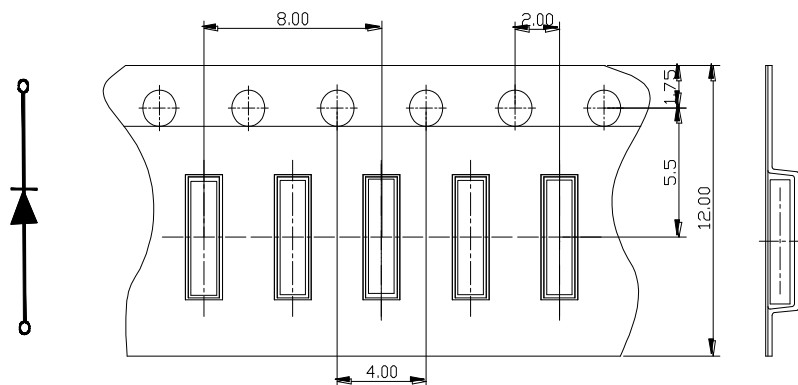
Notes:

1. Seller 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°C and 60% RH for less.
3. The LEDs should be used within 24 hours, or else should be kept a 5~30°C 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	Opertion Life	Connect with a power $I_F=60\text{mA}$ $T_a=\text{Under room temperature}$	1000Hrs	0/20
	Hige Temperature High Humidity	$T_a=+65^\circ\text{C}\pm 5^\circ\text{C}$ $\text{RH}=90\%-95\%$	240Hrs	0/20
	Hige 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 : $260^\circ\text{C}(\text{Max.})$,within5 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 $U\times 1.2$
Rvevrse 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.Meansurment shall be taken between 2 hours after the test pieces have been returned to normal ambient conditions after completion of each test.