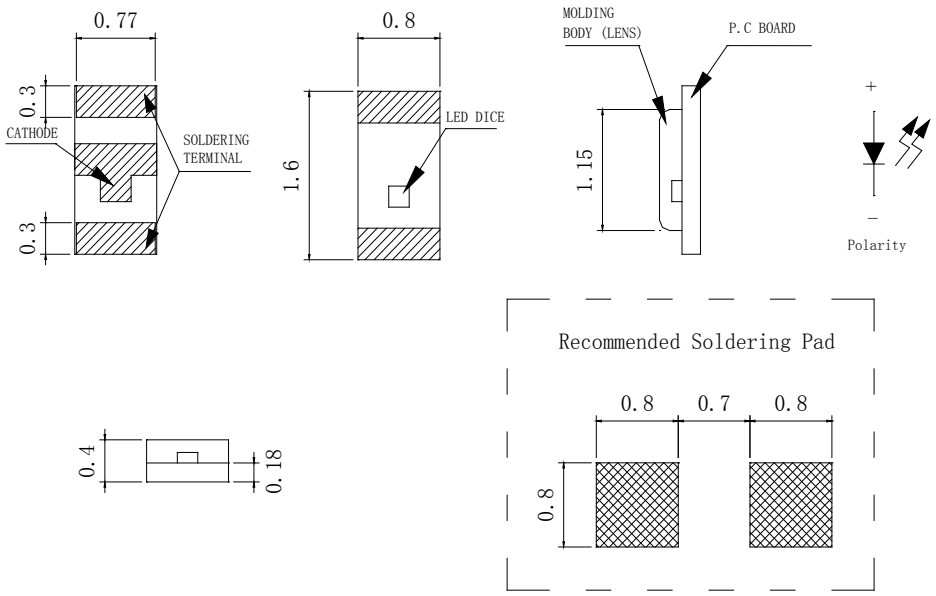
Features

· 1.6mm*0.8mm SMT LED, Super thin (0.4H mm)
· Low Power Consumption
· 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
· Package: 3000pcs/Reel

Applications

· Backlight and Indicator

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2mm(.0079″) unless otherwise noted.
3. Specifications are subject to change without notice
4. This drawing is only for reference, not as a basis for the actual structure.

Selection Guide

Part No	Lens Type	Dice	Emitted Color
FSL-1608040A-FATNC3	Water Clear	AlInGaP	Orange

Electrical / Optical Characteristics At Ta=25 ℃

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
Iv	Luminous Intensity	45	90		mcd	IF=20mA
2θ1/2	Viewing Angle		130		deg	IF=20mA
λ Peak	Peak Emission Wavelength		611		nm	IF=20mA
λ d	Dominant Wavelength	597	605	612	nm	IF=20mA
△λ	Spectral Line Half-Width		17		nm	IF=20mA
VF	Forward Voltage	1.5	2.0	2.5	V	IF=20mA
IR	Reverse Current			10	μA	VR=5V

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 optical centerline value

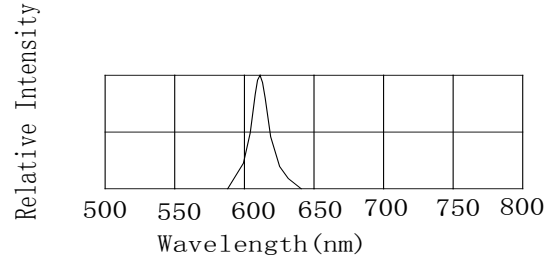
Absolute Maximum Ratings At Ta=25℃

Parameter	Orange	Unit
Power Dissipation	75	mW
Peak Forward Current[1]	100	mA
Continuous Forward Current	30	mA
Dreading Linear From25℃	0.4	mA/℃
Reverse Voltage	5	V
Electrostatic Discharge Threshold(HBM)	2000	V
Operating Temperature Range	-45℃ to + 85℃	
Storage Temperature Range	-55℃ to + 105℃	
Soldering Condition	260℃ For 10 Seconds	

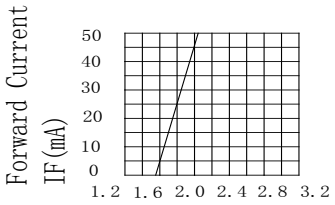
Note:

1. 1/10DutyCycle, 0.1msPulseWidth

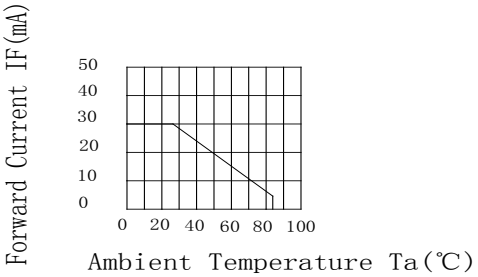
Electrical Optical Characteristics Curves At Ta=25 ℃



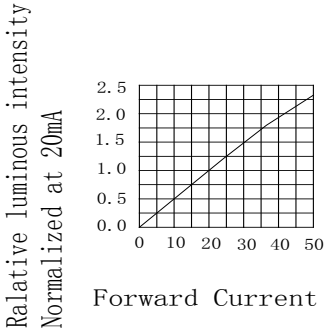
Relative Intensity vs. Wavelength



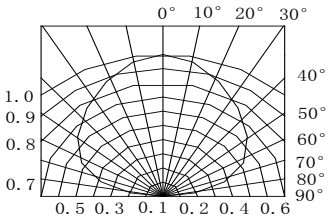
Forward Current vs. Forward Voltage



Forward Current Derating Curve



Forward luminous Intensity vs. Forward Current



Spatial Distribution

Bin Range Of Luminous Intensity

Symbol	Bin Code	Min.	Max.	Unit	Condition
Iv	P	45	72	mcd	IF=20mA
	Q	72	112		
	R	112	180		
	S	180	280		

Bin Range Of Forward Voltage

Symbol	Bin Code	Min.	Max.	Unit	Condition
VF	V15	1.5	1.7	V	IF=20mA
	V17	1.7	1.9		
	V19	1.9	2.1		
	V21	2.1	2.3		
	V23	2.3	2.5		

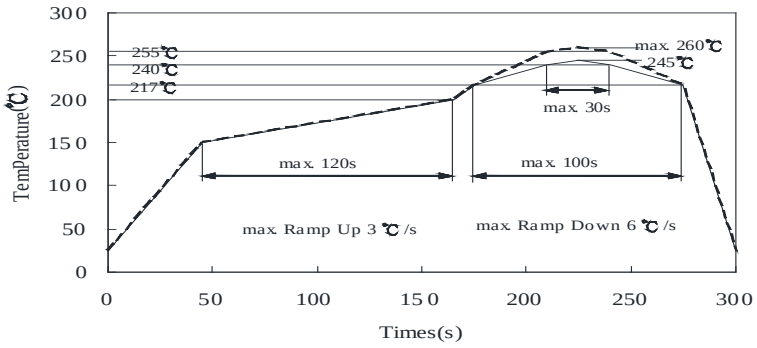
Bin Range Of Dominate Wavelength

Symbol	Bin Code	Min.	Max.	Unit	Condition
入 d	A1	597	600	nm	IF=20mA
	A2	600	603		
	A3	603	606		
	A4	606	609		
	A5	609	612		

Notes:

1. Tolerance of Luminous Intensity +/-20%,the Luminous Intensity is measured with the led excluded the black lens cover.
2. Tolerance of Forward Voltage +/-0.15V
3. Tolerance of the Dominate Wavelength +/- 2nm

SMT Reflow Soldering Instructions

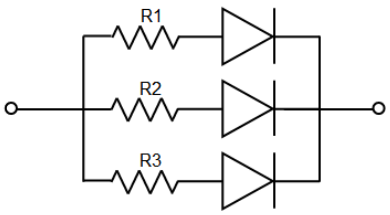


Notes:

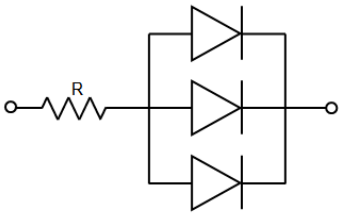
1. Selles gives no other assurances regarding the ability of to withstand ESD. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.
2. Reflow soldering should not be done more than two times.
3. Do not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

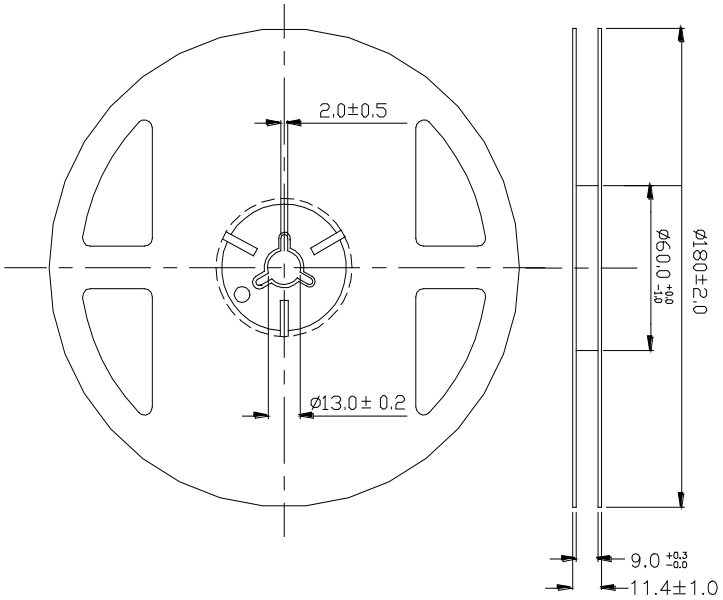


Circuit model A

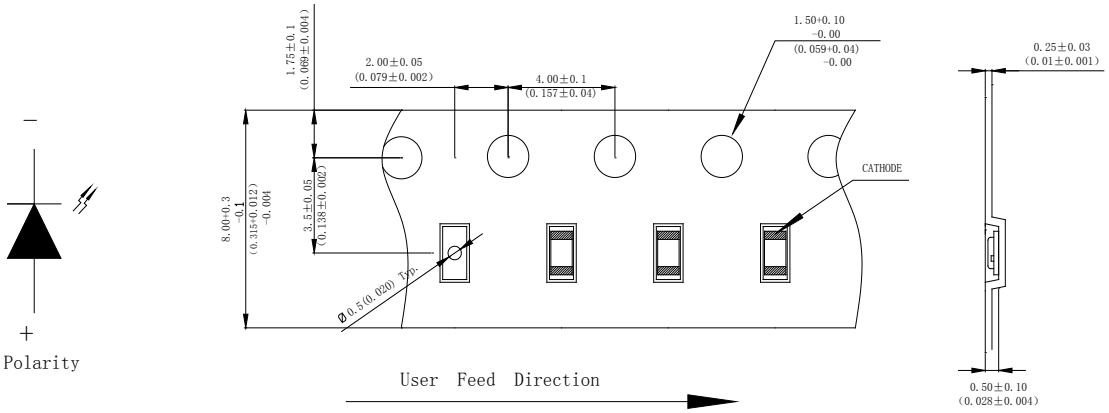


Circuit model B

Reel 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 IF=20mA Ta=Under room temperature	1000Hrs	0/20
	High Temperature High Humidity	Ta=＋65℃±5℃ RH=90%-95%	240Hrs	0/20
	High Temperature Storage	High Ta=＋100℃±5℃	1000Hrs	0/20
	Low Temperature Storage	Low Ta=-50℃±5℃ Test time=1000hrs	1000Hrs	0/20
Environmental Test	Temperature Cycling	-50℃～+105℃ 15min 5min 15min	300 Cycles	0/20
	Thermal Shock	-45℃～±5℃～+85℃～±5℃ 5min 10sec 5min	300 Cycles	0/20
	Solder Resistance	Preheating: 120℃-150℃,within 2 minutes. Operation heating : 260℃(Max.),within 10 seconds(Max.)	5Cycles	0/20

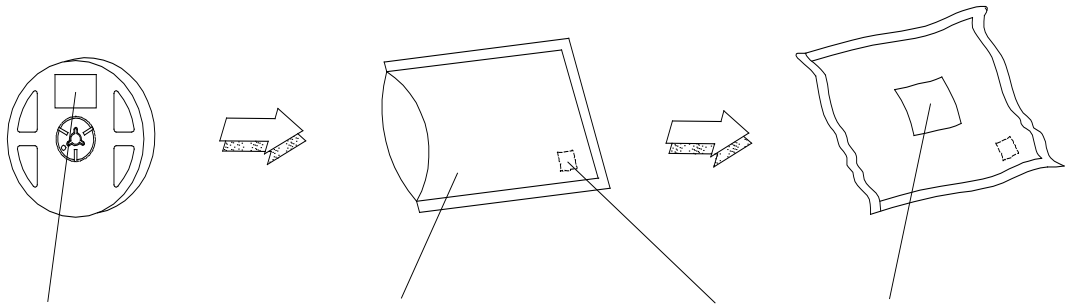
Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	VF(V)	IF=20mA	Over U×1.2
Reverse current	IR(μA)	VR=5V	Over U×2
Luminous intensity	Iv(mcd)	IF=20mA	Below S×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.

Moisture Resistant Packaging



Label Aluminum moisture-proof bag Desiccant Label

Remark: Add Desiccant into Aluminum moisture-proof bag

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