

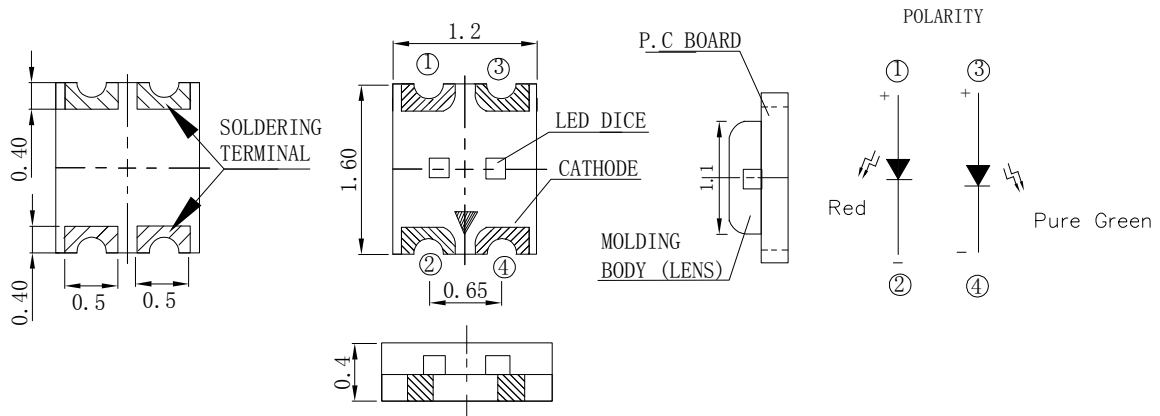
Features

- 1.60mm*1.20mm 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

Applications

- Backlight and Indicator

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.3\text{mm}$ (.012") 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-1612040RPG-ET5YHD

Selection Guide

Part No	Lens Type	Dice	Emitted Color
FSL-1612040RPG-ET5YHD	Water Clear	InGaN AlInGaP	Pure Green Red

Electrical / Optical Characteristics At Ta=25°C

Symbol	Parameter		Red	Pure Green	Unit	Test Condition
Iv	Luminous Intensity	MIN.	72	112	mcd	IF=5mA
		MAX.	180	360		
2θ1/2	Viewing Angle	TYP.	130	130	deg	IF=5mA
λ Peak	Peak Emission Wavelength	TYP.	620	545	nm	IF=5mA
λ d	Dominant Wavelength	TYP.	630	530	nm	IF=5mA
Δλ	Spectral Line Half-Width	TYP.	17	35	nm	IF=5mA
VF	Forward Voltage	MIN.	1.7	2.7	V	IF=5mA
		TYP.	2.3	3.2		
IR	Reverse Current	MAX.	100	100	μ A	VR 5V

Note:

1. The chromaticity coordinates(x,y) is derived form 1931 CIE chromaticity diagram.
2. The chromaticity coordinates(x,y) guarantee should be added±0.02 tolerance.

Absolute Maximum Ratings At Ta=25°C

Parameter	Red	Pure Green	Unit
Power Dissipation	75	95	mW
Peak Forward Current[1]	80	100	mA
Continuous Forward Current	25	25	mA
Derating Linear From 25 °C	0.4	0.25	mA/°C
Reverse Voltage	5	5	V
Electrostatic Discharge Threshold(HBM)	2000	300	V
Operating Temperature Range	-55 °C to + 85 °C		
Storage Temperature Range	-55 °C to + 85 °C		
Soldering Condition	260°C For 5 Seconds		

Note:

Electrical Optical Characteristics Curves At Ta=25°C

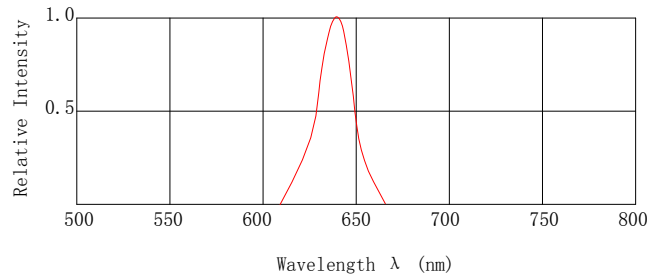


Fig.1 Relative Intensity vs. Wavelength

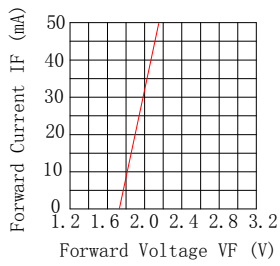


Fig.2 Forward Current VS. Forward Voltage

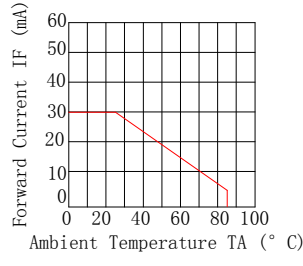


Fig.3 Forward Current Derating Curve

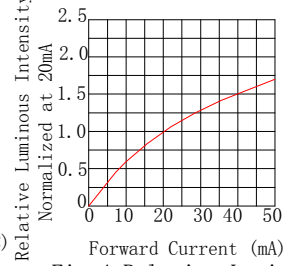


Fig.4 Relative Luminous Intensity VS. Forward Current

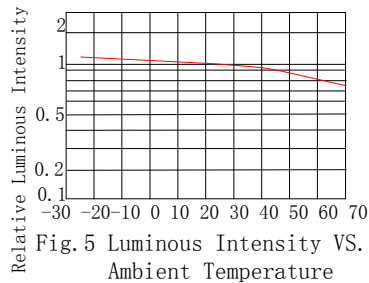


Fig.5 Luminous Intensity VS. Ambient Temperature

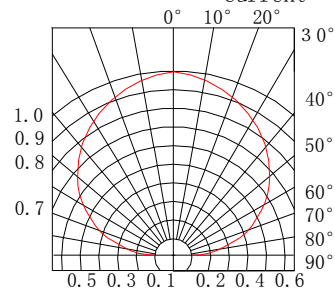


Fig.6 Spatial Distribution

Electrical Optical Characteristics Curves At Ta=25°C

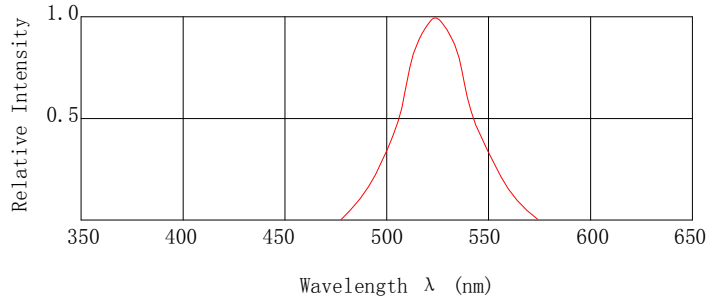


Fig.1 Relative Intensity vs. Wavelength

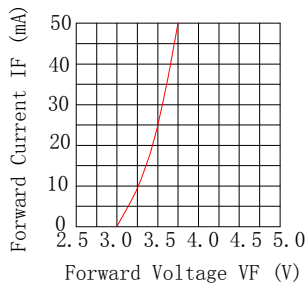


Fig.2 Forward Current VS. Forward Voltage

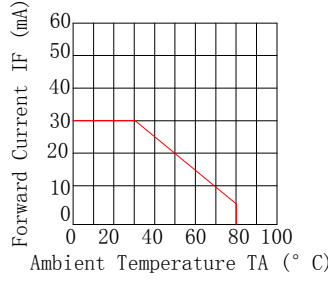


Fig.3 Forward Current Derating Curve

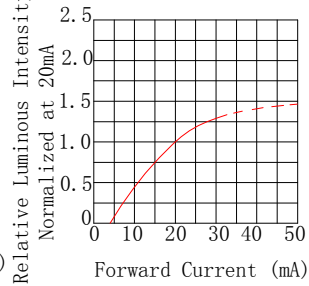


Fig.4 Relative Luminous Intensity VS. Forward Current

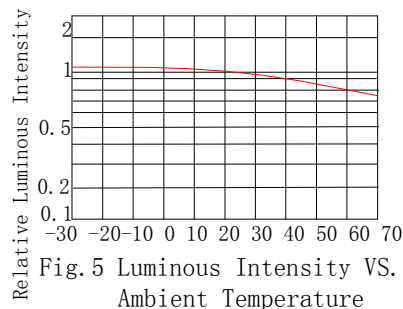


Fig.5 Luminous Intensity VS. Ambient Temperature

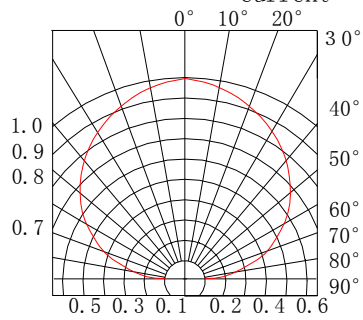


Fig.6 Spatial Distribution



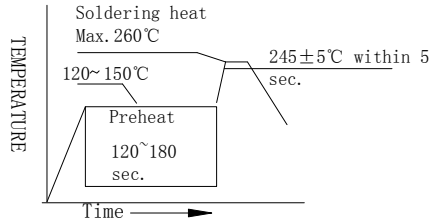
Bin Range Of Luminous Intensity

Symbol	Bin Code	Min.	Max.	Unit	Condition
Iv(R)	Q	72	112	mcd	IF=5mA
	R	112	180		
Iv(PG)	R	112	180	mcd	IF=5mA
	S	180	360		

Bin Range Of Forward Voltage (+/-0.1)

Symbol	Bin Code	Min.	Max.	Unit	Condition
VF (Red)	VR1	1.7	2	V	IF=5mA
	VR2	2	2.3		
VF (Green)	VG1	2.7	2.95	V	IF=5mA
	VG2	2.95	3.2		

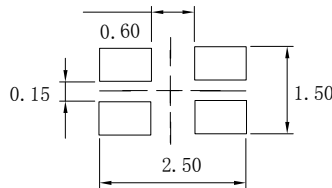
SMT Reflow Soldering Instructions



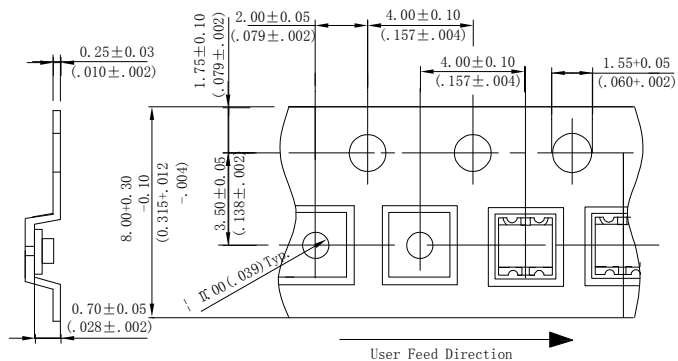
Notes:

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°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 if=20mA Ta=Under room temperature	1000Hrs	0/20
	Hige Temperature High Humidity	Ta=+ 65°C±5°C RH=90%-95%	240Hrs	0/20
	Hige Temperature Storage	High Ta=+ 85°C±5°C	1000Hrs	0/20
	Low Temperature Storage	Low Ta=-35°C±5°C Test time=1000hrs	1000Hrs	0/20
Environmental Test	Temperature Cycling	-45°C ~+105°C 15min 5min 15min	300 Cycles	0/20
	Thermal Shock	-35°C ~±5°C ~+85°C ~±5°C 5min 10sec 5min	300 Cycles	0/20
	Solder Resistance	Preheating: 120°C-150°C,within 2 minutes. Operation heating : 260°C (Max.),within5 seconds(Max.)	5Cycles	0/20

Judgment criteria of fialure for the reliability

Measuring items	Symbol	Measuring conditions	Judement criteria for failure
Forward voltage	V _F (V)	I _F =5mA	Over U×1.2
Rvevrse current	I _R (μA)	V _R =5V	Over U×2
Luminous intensity	I _v (mcd)	I _F =5mA	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 returnde to normal ambient cnditions after completion of each test.