

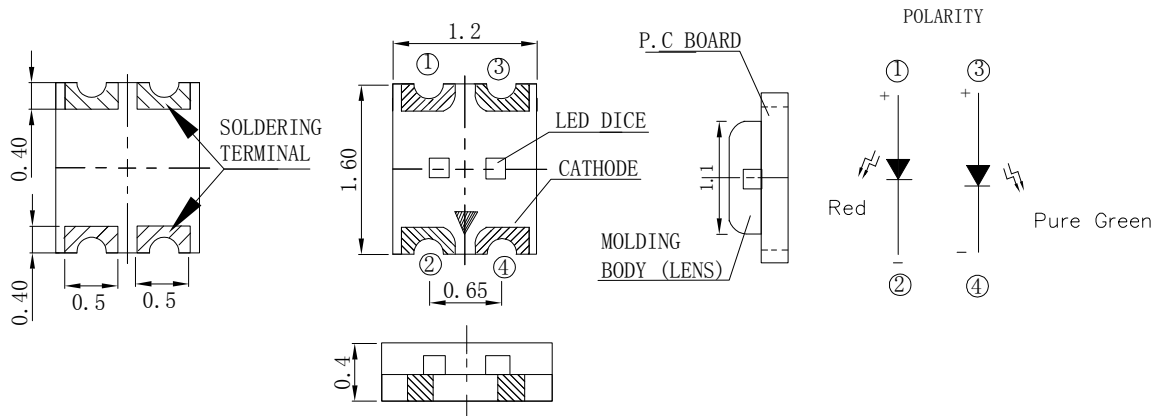
Features

- 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.



Selection Guide

Part No	Lens Type	Dice	Emitted Color
FSL-1612040RPG-ET20YHD	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=20mA
		MAX.	140	225		
2θ1/2	Viewing Angle	TYP.	120	120	deg	IF=20mA
λ Peak	Peak Emission Wavelength	TYP.	631	519	nm	IF=20mA
λ d	Dominant Wavelength	MIN	615	520	nm	IF=20mA
		MAX	625	530		
Δλ	Spectral Line Half-Width	TYP.	17	35	nm	IF=20mA
VF	Forward Voltage	MIN.	1.7	2.7	V	IF=20mA
		TYP	2.0	3.3		
		MAX	2.4	3.7		
IR	Reverse Current	MAX.	100	100	μ A	VR 5V

Note:

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:

1. 1/10DutyCycle,0.1msPulseWidth

Electrical Optical Characteristics Curves At Ta=25°C

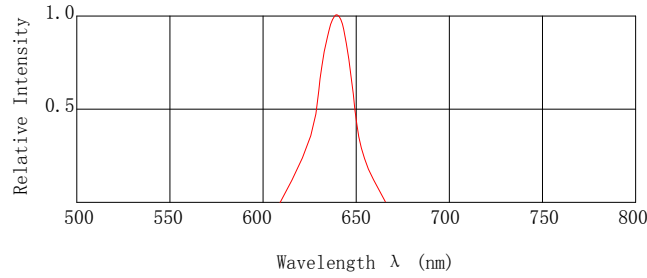


Fig.1 Relative Intensity vs. Wavelength

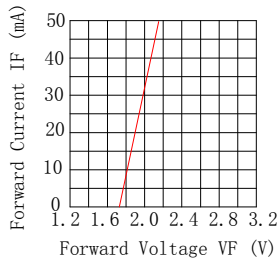


Fig.2 Forward Current VS. Forward Voltage

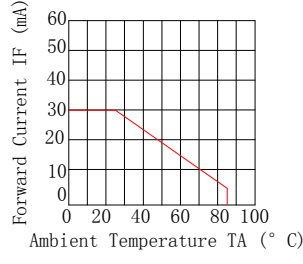


Fig.3 Forward Current Derating Curve

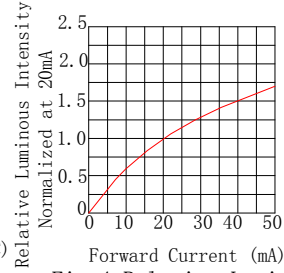


Fig.4 Relative Luminous Intensity VS. Forward Current

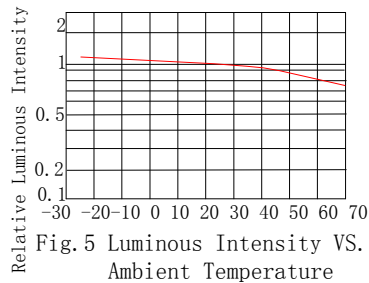


Fig.5 Luminous Intensity VS. Ambient Temperature

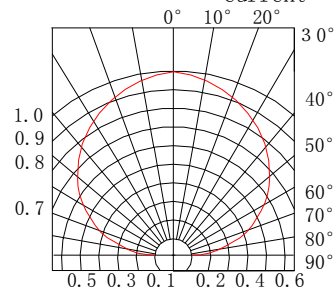


Fig.6 Spatial Distribution

Electrical Optical Characteristics Curves At Ta=25°C

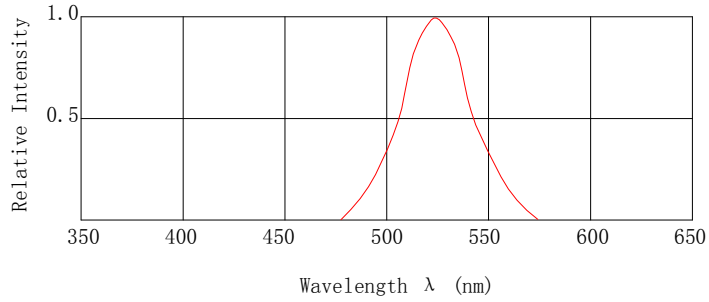


Fig.1 Relative Intensity vs. Wavelength

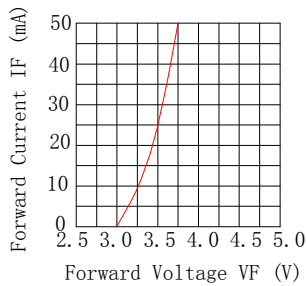


Fig.2 Forward Current VS. Forward Voltage

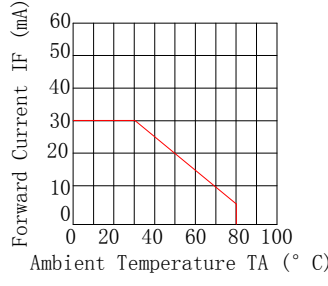


Fig.3 Forward Current Derating Curve

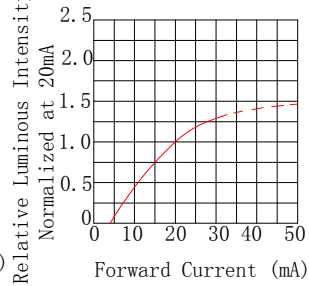


Fig.4 Relative Luminous Intensity VS. Forward Current

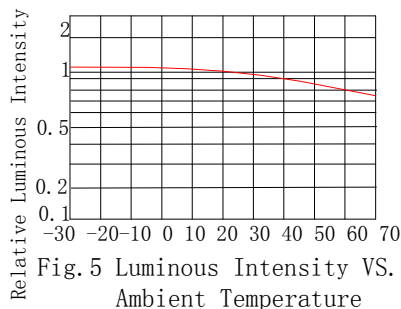


Fig.5 Luminous Intensity VS. Ambient Temperature

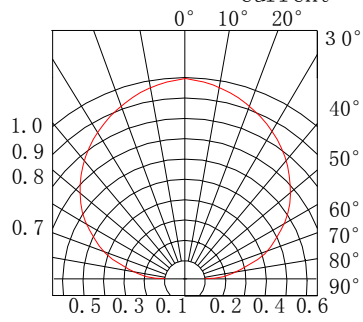


Fig.6 Spatial Distribution



Bin Range Of Luminous Intensity

Symbol	Bin Code	Min.	Max.	Unit	Condition
Iv(R)	Q1	72	90	mcd	IF=20mA
	Q2	90	112		
	R1	112	140		
Iv(PG)	R1	112	140	mcd	IF=20mA
	R2	140	180		
	S1	180	225		

Bin Range Of Dominate Wavelength

Symbol	Bin Code	Min.	Max.	Unit	Condition
VF (Red)	R1	615	620	nm	IF=20mA
	R2	620	625		
VF (Green)	G1	520	525	nm	IF=20mA
	G2	525	530		

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

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.