

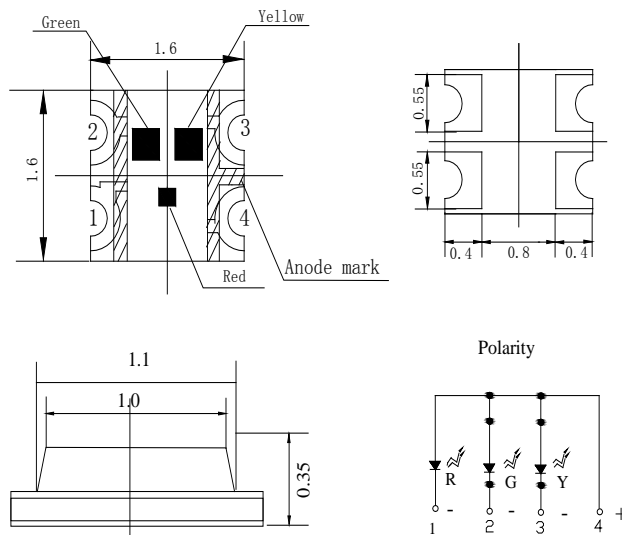
Features

- 1.6mm*1.6mm SMT LED, Super thin (0.35H 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 Products
- Package: 3000pcs/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.



Selection Guide

Part No	Lens Type	Dice	Emitted Color
FSL-1616035RPGY-K4TNZPR-CA	Water Clear	AlInGaP	Red
		InGaN	Green
		AlInGaP	Yellow

Electrical / Optical Characteristics At Ta=25 °C

Symbol	Parameter		Pure Green	Red	Yellow	Unit	Test Condition
Iv	Luminous Intensity	MIN.	71	18.0	28.0	mcd	IF=20mA
		TYP.	180	45.0	75.0		
2θ1/2	Viewing Angle	TYP.	130	130	130	deg	IF=20mA
λ Peak	Peak Emission Wavelength	TYP.	525	639	591	nm	IF=20mA
λ d	Dominant Wavelength	TYP.	530	631	589	nm	IF=20mA
Δλ	Spectral Line Half-Width	TYP.	35	20	15	nm	IF=20mA
VF	Forward Voltage	TYP.	3.3	2.0	2.0	V	IF=20mA
		MAX.	3.9	2.4	2.4		
IR	Reverse Current	MAX.	10	10	10	μ A	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°C

Parameter	Green	Red	Yellow	Unit
Power Dissipation	110	75	75	mW
Peak Forward Current[1]	100	80	80	mA
Continuous Forward Current	25	30	30	mA
Dreading Linear From 25°C	0.5	0.4	0.4	mA/°C
Reverse Voltage	5	5	5	V
Electrostatic Discharge Threshold	150	2000	2000	V
Operating Temperature Range	-20°C to + 80°C			
Storage Temperature Range	-30°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

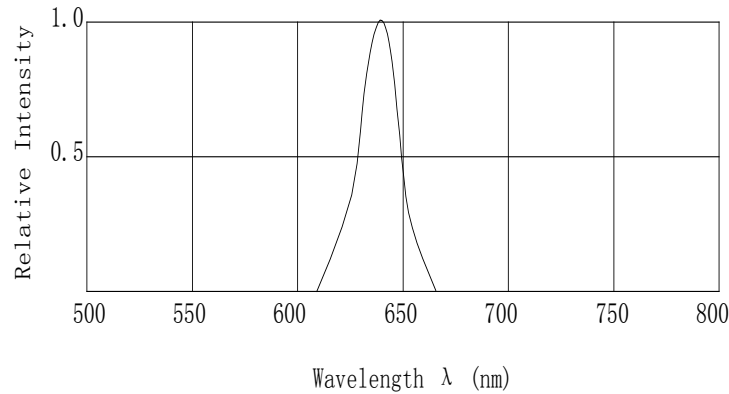


Fig.1 Relative Intensity vs. Wavelength

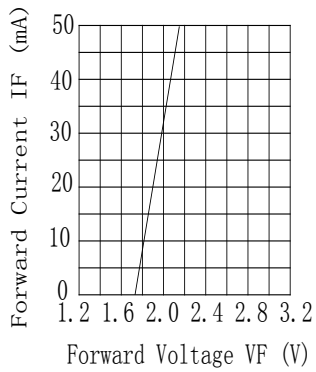


Fig.2 Forward Current VS. Forward Voltage

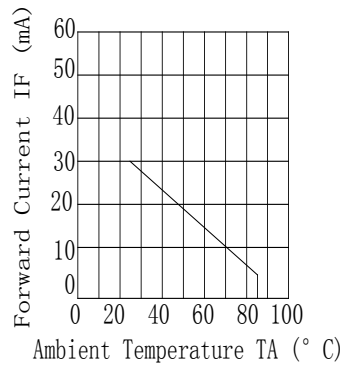


Fig.3 Forward Current Derating Curve

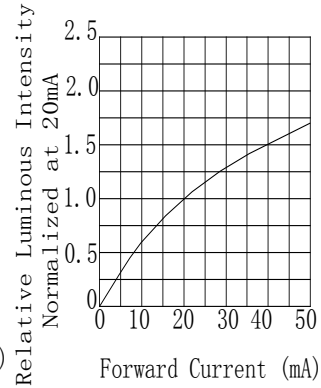


Fig.4 Relative Luminous Intensity VS. Forward Current

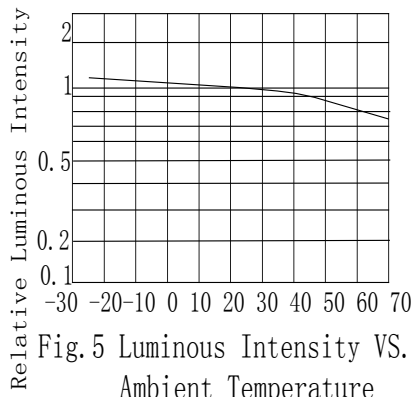


Fig.5 Luminous Intensity VS. Ambient Temperature

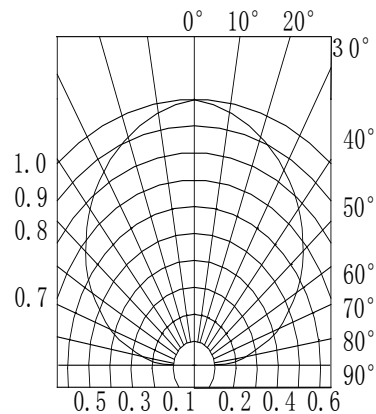


Fig.6 Spatial Distribution

Electrical Optical Characteristics Curves At Ta=25 °C

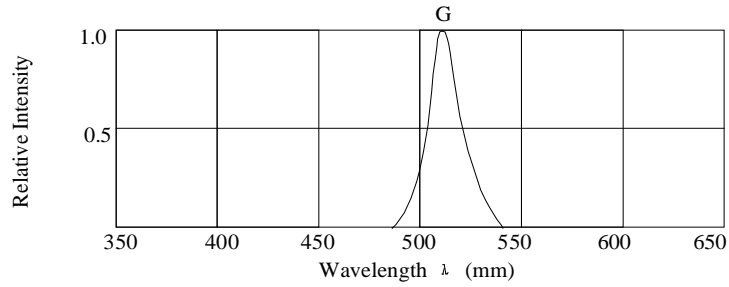


Fig.1 Relative Intensity vs. Wavelength

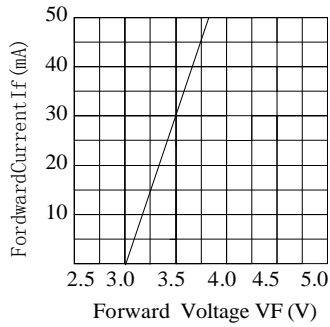


Fig.2 Forward Current VS. Forward Voltage

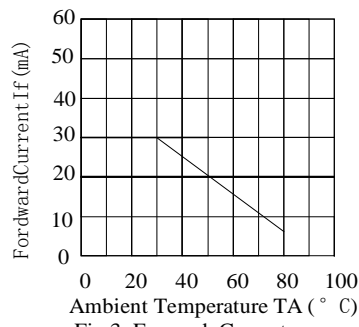


Fig.3 Forward Current Derating Curve

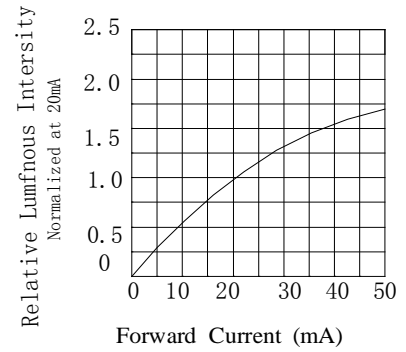
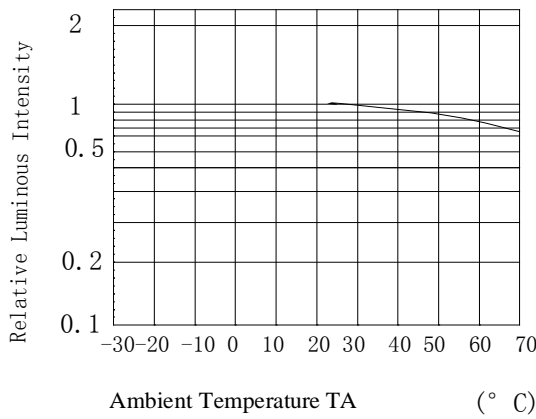


Fig.4 Relative Luminous Intensity vs. Forward Current



Ambient Temperature TA (°C)

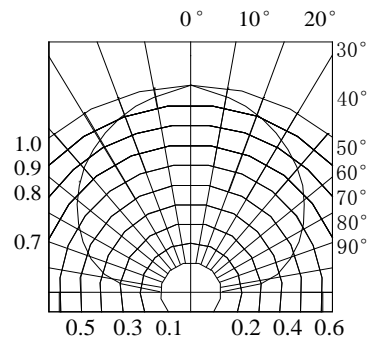
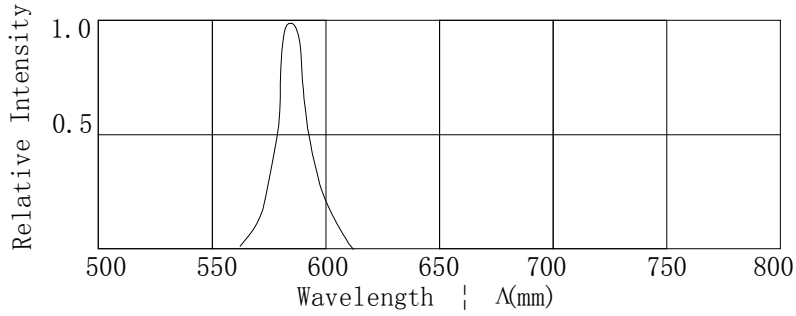
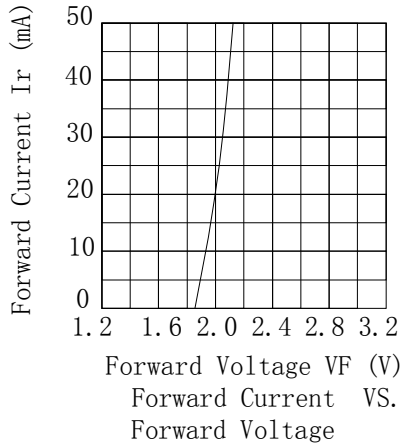


Fig.6 Spatial Distribution

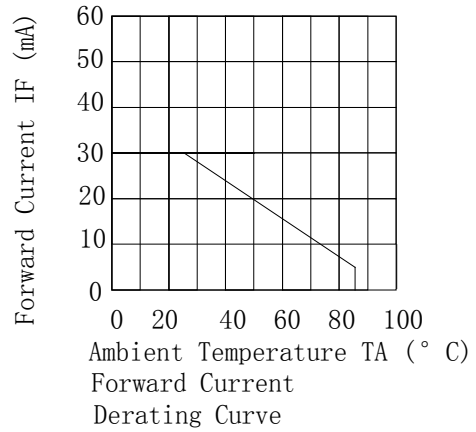
Electrical Optical Characteristics Curves At Ta=25 °C



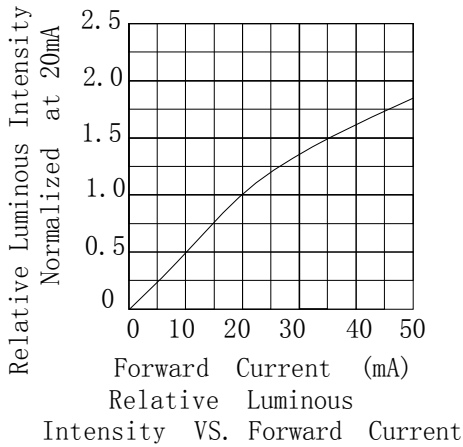
Relative Intensity vs. Wavelength



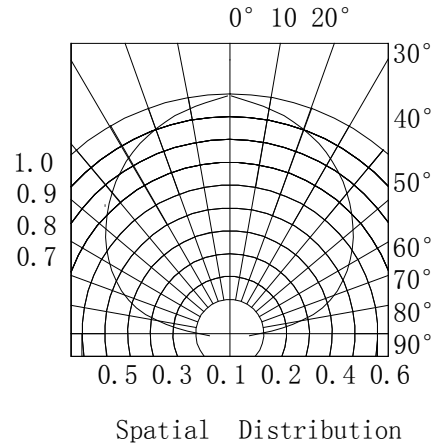
Forward Current VS. Forward Voltage



Forward Current Derating Curve

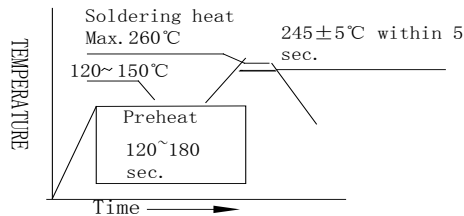


Relative Luminous Intensity VS. Forward Current



Spatial Distribution

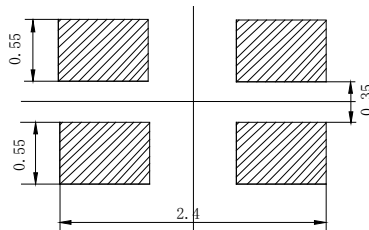
SMT Reflow Soldering Instructions



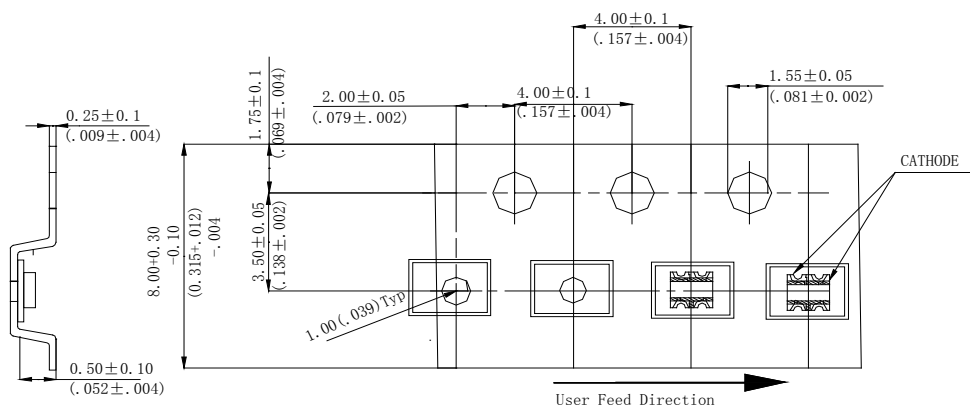
Notes:

1. Sells 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 $I_F=20mA$ T_a =Under room temperature	1000Hrs	0/20
	Hige Temperature High Humidity	$T_a=+65^{\circ}C\pm5^{\circ}C$ RH=90%-95%	240Hrs	0/20
	Hige 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.),within5 seconds(Max.)	5Cycles	0/20

Judgment criteria of faillure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	$V_F(V)$	$I_F=20mA$	Over $U \times 1.2$
Reverse current	$I_R(\mu A)$	$V_R=5V$	Over $U \times 2$
Luminous intensity	$I_v(mcd)$	$I_F=20mA$	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.