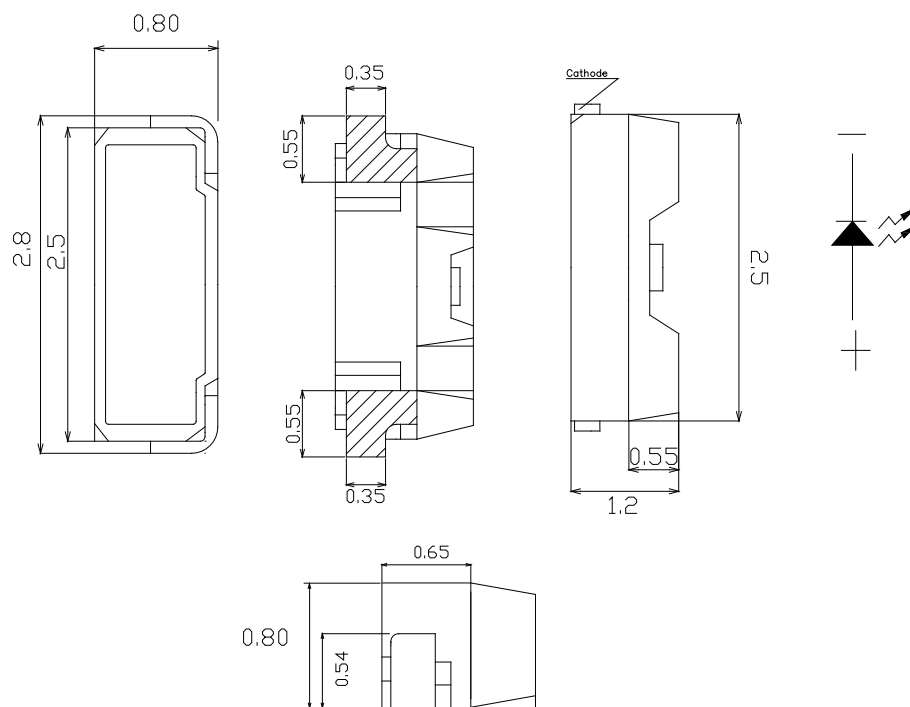


**Features**

- Package in 12mm tape on 7" diameter reels.
- 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)

**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 reference, not as a basis for the actual structure.

www.FantasyLeds.com

Sales@FantasyLeds.com

Form No :

Rev : Preliminary

Page: 1 of 6

Approved By:

Prepared By:

Date:



### Selection Guide

Part No	Lens Type	Dice	Emitted Color
FSL-2812080TB-SCT1V2THH	Water Clear	InGaN	Blue

### Electrical / Optical Characteristics At Ta=25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Iv	Luminous Intensity	300	720	1120	mcd	IF=20mA
2θ1/2	Viewing Angle		120		deg	IF=20mA
λ Peak	Peak Emission Wavelength		468		nm	IF=20mA
λ d	Dominant Wavelength	465	470	475	nm	IF=20mA
Δλ	Spectral Line Half-Width		25		nm	IF=20mA
VF	Forward Voltage	2.8	3.2	3.8	V	IF=20mA
IR	Reverse Current			100	uA	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	Blue	Unit
Power Dissipation	110	mW
Peak Forward Current (1/10 Duty Cycle @ 0.1ms)	100	mA
Continuous Forward Current	25	mA
Reverse Voltage	5	V
Electrostatic Discharge Threshold(HBM)	1000	V
Operating Temperature Range	-30°C to + 85°C	
Storage Temperature Range	-40°C to + 100°C	
Soldering Condition	260°C For 10 Seconds	

# Electrical Optical Characteristics Curves At Ta=25 °C

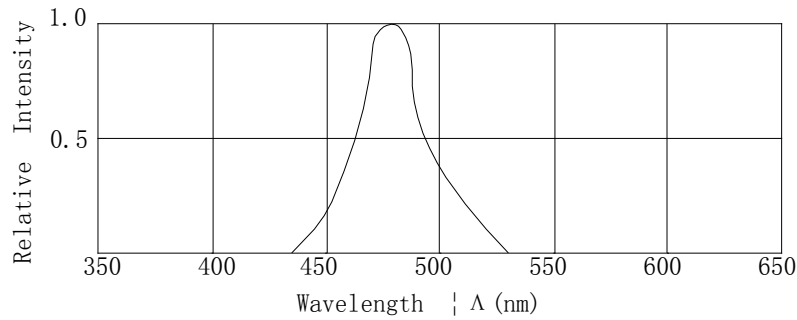


Fig.1 Relative Intensity VS. Wavelength

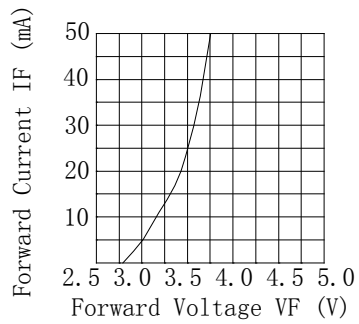


Fig.2 Forward Current vs. Forward Voltage

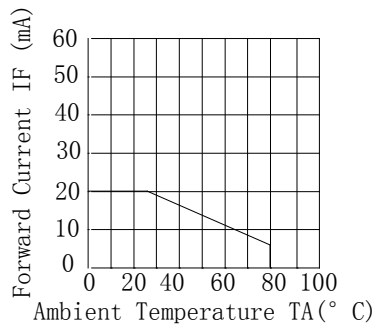


Fig.3 Forward Current Derating Curve

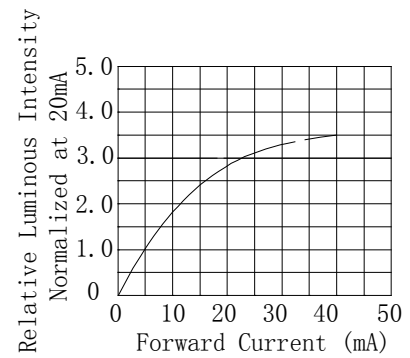


Fig.4 Relative Luminous Intensity vs. Forward Current

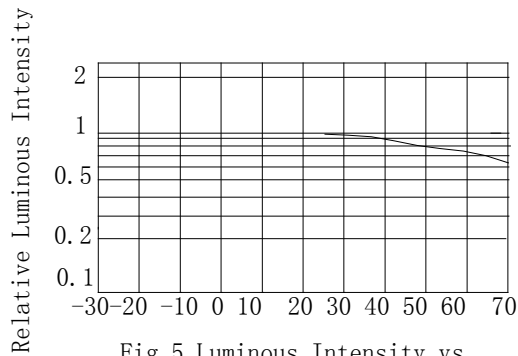


Fig.5 Luminous Intensity vs. Ambient Temperature

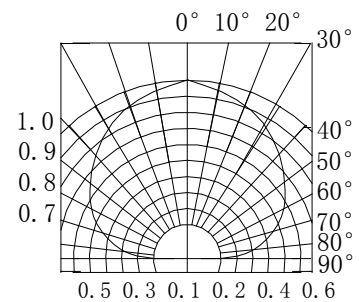


Fig.6 Spatial Distribution

**Bin Range Of Luminous Intensity**

Symbol	Bin Code	Min.	Max.	Unit	Condition
I <sub>v</sub>	T	300	450	mcd	I <sub>F</sub> =20mA
	U	450	720		
	V	720	1120		

**Bin Range Of Forward Voltage**

Symbol	Bin Code	Min.	Max.	Unit	Condition
V <sub>F</sub>	V0	2.8	3.0	V	I <sub>F</sub> =20mA
	V1	3.0	3.2		
	V2	3.2	3.4		
	V3	3.4	3.6		
	V4	3.6	3.8		

**Bin Range Of Dominate Wavelength**

Symbol	Bin Code	Min.	Max.	Unit	Condition
λ <sub>d</sub>	X	465	470	nm	I <sub>F</sub> =20mA
	Y	470	475		

**Notes:**

1. Tolerance of Luminous Intensity +/-20%
2. Tolerance of Forward Voltage +/-0.2V
3. Tolerance of the Dominate Wavelength +/- 2nm

Figure 1 is a graph showing the recommended soldering profile for 60/40 Sn/Pb solder. The y-axis represents Temperature (T) in degrees Celsius, ranging from 0 to 300. The x-axis represents Time (t) in seconds, ranging from 0 to 300. The profile shows a ramp up from 25°C to 217°C (melting point) at 120 s max, a dwell at 217°C, a ramp up to 255°C (boiling point) at 100 s max, a dwell at 255°C, and a ramp down at 6K/s (max). The recommended profile is shown as a solid line, and the maximum and minimum profiles are shown as dashed lines.

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.

Technical drawing of a mechanical part showing a cross-section. The drawing includes a solid line profile and a dashed line profile. Dimensions are indicated: a vertical dimension of 0.9, a horizontal dimension of 1.4, a central horizontal dimension of 10, and another horizontal dimension of 1.4.

Technical drawing of a 5-pin D-subminiature connector. The drawing includes a top view and a side view.

**Top View Dimensions:**

- Overall width:  $8.0^{+0.3}_{-0.0}$  mm
- Pin pitch:  $2.0 \pm 0.05$  mm
- Pin diameter:  $\varnothing 1.5 + 1.0$  mm
- Pin height:  $3.5 \pm 0.05$  mm
- Pin offset from center:  $1.35$  mm
- Pin offset from edge:  $4.0$  mm

**Side View Dimensions:**

- Overall height:  $1.75$  mm
- Pin height:  $3.05$  mm

**Other Features:**

- Progressive direction arrow pointing right.
- Polarity symbol indicating the positive terminal.

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 $I_F=20\text{mA}$ $T_a=\text{Under room temperature}$	1000Hrs	0/20
	High Temperature High Humidity	$T_a=+65^{\circ}\text{C}\pm 5^{\circ}\text{C}$ $\text{RH}=90\%-95\%$	240Hrs	0/20
	High 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 : $260^{\circ}\text{C}$ (Max.), within 5 seconds (Max.)	5Cycles	0/20

**Judgment criteria of failure for the reliability**

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	$V_F(\text{V})$	$I_F=20\text{mA}$	Over $U \times 1.2$
Reverse current	$I_R(\mu\text{A})$	$V_R=5\text{V}$	Over $U \times 2$
Luminous intensity	$I_v(\text{mcd})$	$I_F=20\text{mA}$	Below $S \times 0.5$

Note: 1.U means the upper limit of specified characteristics. S means initial value.

2.Measurment shall be taken between 2 hours after the test pieces have been returned to normal ambient conditions after completion of each test.