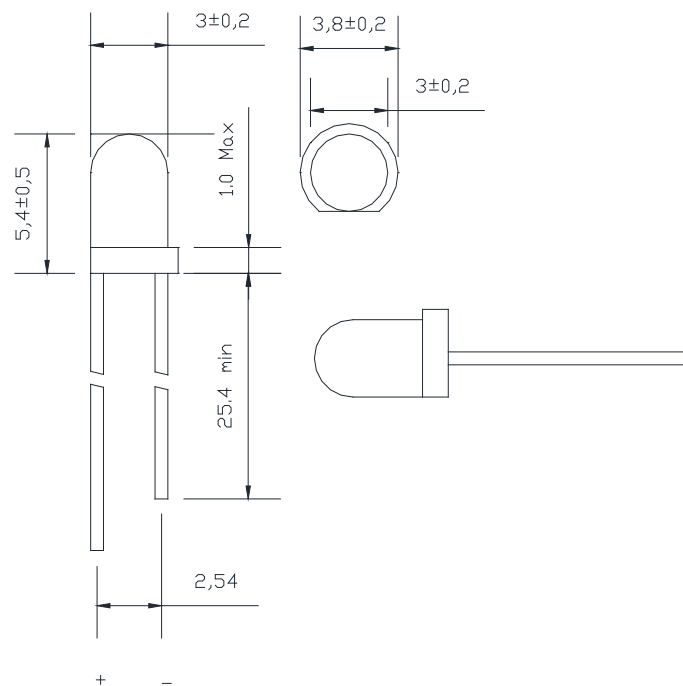


Features

- 3mm DIA LED Lamp
- Low Power Consumption
- High Efficiency
- Various Colors and Viewing Angle
- Long Solid State Reliability
- Package: 1000pcs/Packing

Applications

- Indicator

Package Dimensions**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.01") unless otherwise noted.
3. Protruded Resin under flange is 1.0mm(0.04") max.
4. Specifications are subject to change without notice.



Selection Guide

Part No	Lens Type	Dice	Emitted Color
FDL-3521PW-TWCLHC	Green	InGaN	Ice Blue

Electrical / Optical Characteristics At Ta=25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Iv	Luminous Intensity	1000	5000		mcd	IF=20mA
2θ1/2	Viewing Angle		45		deg	
x	Chromaticity Coordinates		0.3		nm	IF=20mA
y			0.3			
VF	Forward Voltage	2.5	2.8	3.7	V	IF=20mA
IR	Reverse Current			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
2. The chromaticity coordinates(x,y) is derived form 1931 CIE chromaticity diagram.
3. The chromaticity coordinates(x,y) guarantee should be added±0.02 tolerance.

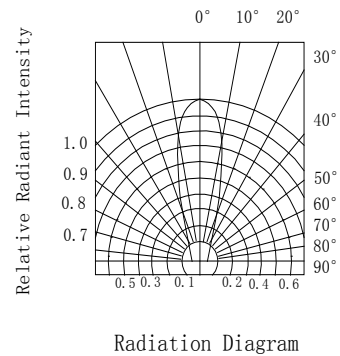
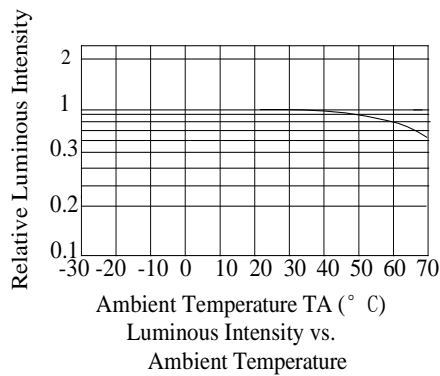
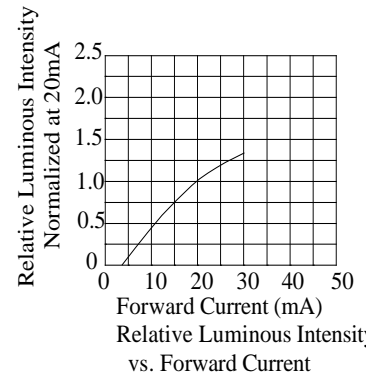
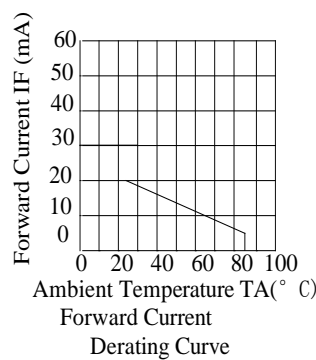
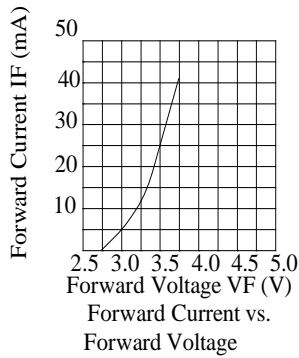
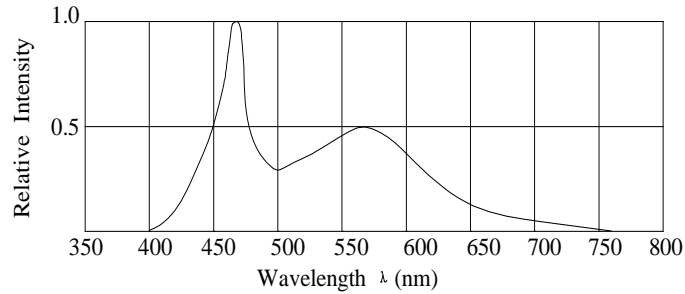
Absolute Maximum Ratings At Ta=25°C

Parameter	Ice Blue	Unit
Power Dissipation	70	mW
Peak Forward Current	100	mA
Continuous Forward Current	30	mA
Dreading Linear From25°C	0.25	mA/°C
Reverse Voltage	5	V
Electrostatic Discharge Threshold(HBM)	1000	V
Operating Temperature Range	-40°C to + 80°C	
Storage Temperature Range	-55°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



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.

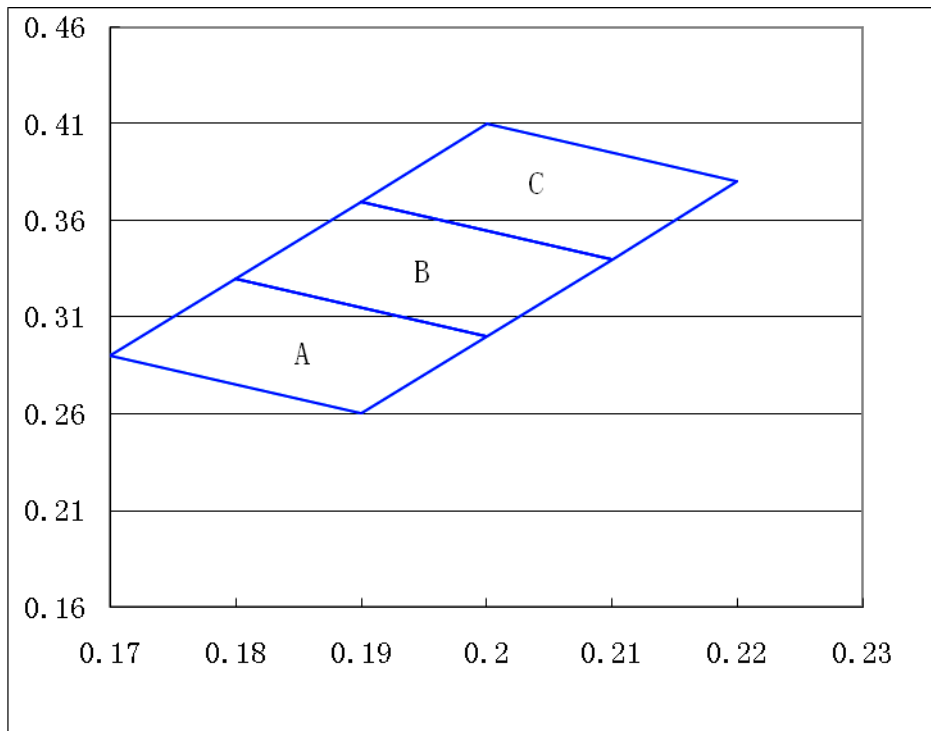


Chromaticity Coordinates Specifications for Bin Grading (+/-0.02)

IF=5mA

BIN	X	Y	X	Y	X	Y	X	Y
A	0.19	0.26	0.17	0.29	0.18	0.33	0.2	0.3
B	0.2	0.3	0.18	0.33	0.19	0.37	0.21	0.34
C	0.21	0.34	0.19	0.37	0.2	0.41	0.22	0.38

CIE Chromaticity Diagram (+/-0.02)





Reliability Test Items Conditions

Classification	Test Item	Test Conditions	Test hours	Result
Endurance Test	Operation Life	Connect with a power if=2mA Ta=Under room temperature	1000Hrs	0/20
	High Temperature High Humidity	Ta=+ 65°C±5°C RH=90%-95%	240Hrs	0/20
	High 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 failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V _F (V)	I _F =2mA	Over U×1.2
Reverse current	I _R (μA)	V _R =5V	Over U×2
Luminous intensity	I _v (mcd)	I _F =2mA	Below S×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.