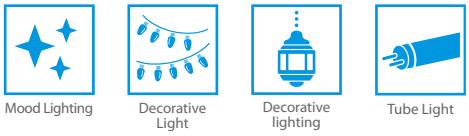
PLCC Series

3014 0.1W PINK

Datasheet



Introduction :

Ultra high luminous efficacy, combined with the flexibility in design due to its slim and miniature size, PLCC LED Series are optimized to be used as lighting for building.

Description :

- Best luminous and color uniformity
- Enables halogen and CDM replacement

Feature and Benefits :

- High luminous Intensity and high efficiency
- Based on Blue : InGaN technology
- Wide viewing angle : 120°
- Excellent performance and visibility
- Suitable for all SMT assembly methods
- IR reflow process compatible
- Environmental friendly; RoHS compliance

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Lighting Design Manufacturing Service

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General Information

Ordering Code Format

2	T	0 1	X 1	P X	x x	0 0 0	x x x
X1	X2	X3-X4	X5-X6	X7-X8	X9-X10	X11-X13	X14-X16

X1		X2		X3-X4		X5-X6		X7-X8	
Type		Component		Series		Wattage		Color	
2	Emitter	T	PLCC	01	3014	X1	0.1W	PX	Pink

X9-X10		X11-X13		X14-X16	
Internal code		PCB Board		Serial Number	
-	-	000	-	-	-

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Absolute Maximum Ratings

Absolute maximum ratings (T_a=25°C)

Parameter	Symbol	Value	Units
Forward Current	I_F	40	mA
Pulse Forward Current (tp<=100μs, Duty cycle=0.25)	I_{pulse}	100	mA
Reverse Current	I_R	10	uA
Reverse Voltage	V_R	5	V
LED Junction Temperature	T_J	125	°C
Operating Temperature	-	-40 ~ +85	°C
Storage Temperature	-	-40 ~ +125	°C
ESD Sensitivity (HBM)	V_B	2,000	V
Soldering Temperature	T_s	Reflow Soldering : 255~260°C/10~30sec Manual Soldering : 350°C/3sec	

Notes:
1. Proper current derating must be observed to maintain junction temperature below the maximum at all time.
2. LEDs are not designed to be driven in reverse bias.

Characteristics

Parameter		Symbol	Value	Units
Viewing Angle	(Typ.)	$2\Theta_{1/2}$	120	Degree
Forward Voltage	(Typ.)	V_F	3.2	V
Thermal resistance		-	40	°C/W
Target Color coordinate	(2T01X1PX18000001) (2T01X1PX18000002)	-	X:0.384 ; Y:0.321 X:0.485 ; Y:0.352	-
JEDEC Moisture Sensitivity		-	Level 2a **Floor Life** Conditions: ≤30°C / 60% RH **Soak Requirements(Standard)** Time (hours): 120+1/-0 Conditions: 60°C / 60% RH	-

Note:
$2\theta_{1/2}$ is the off-axis angle where the luminous intensity is half of the axial luminous intensity.

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Luminous Flux Characteristic

Luminous Flux Characteristics, I_F=30mA and T_J=25˚C

Color	Group	Min Luminous Flux(lm)	Max Luminous Flux(lm)	Forward Current(mA)	Order Code
Pink	30	8.7	9.8	30	2T01X1PX18000001
	34	9.8	11		
	38	11	12.1		
Deep Pink	30	8.7	9.8		2T01X1PX18000002
	34	9.8	11		
	38	11	12.1		

Note:
The luminous flux performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of ±10% on flux measurements.

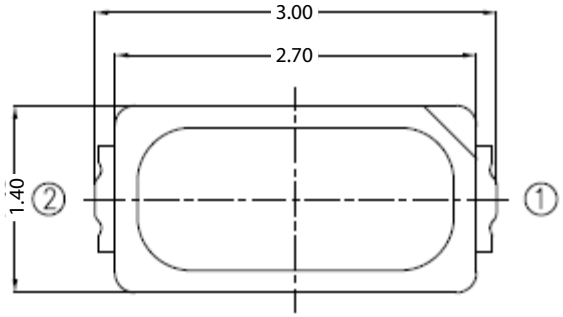
Voltage Bin Structure

Group	Min. Voltage (V)	Max. Voltage (V)
VA1	2.8	2.9
VB1	2.9	3.0
VC1	3.0	3.1
VA2	3.1	3.2
VB2	3.2	3.3
VC2	3.3	3.4
VA3	3.4	3.5
VB3	3.5	3.6

Note:
Forward voltage measurement allowance is ± 0.06V.

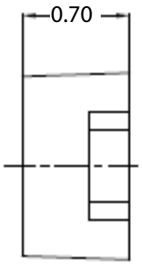
Mechanical Dimensions

Emitter Type Dimension

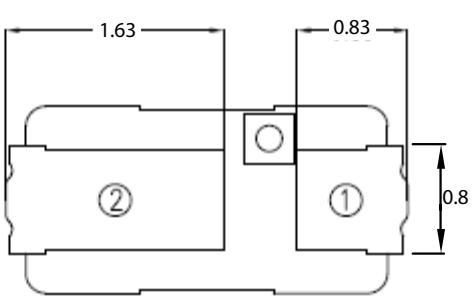


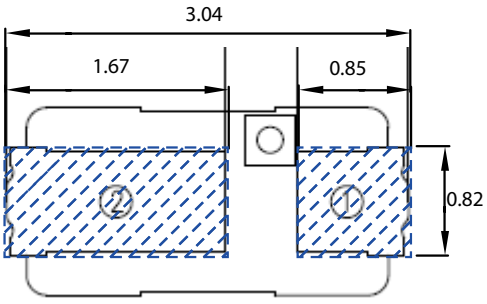
Circuit

Polarity



Solder Pad





Notes:
1. All dimensions are measured in mm.
2. Tolerance : ± 0.20 mm

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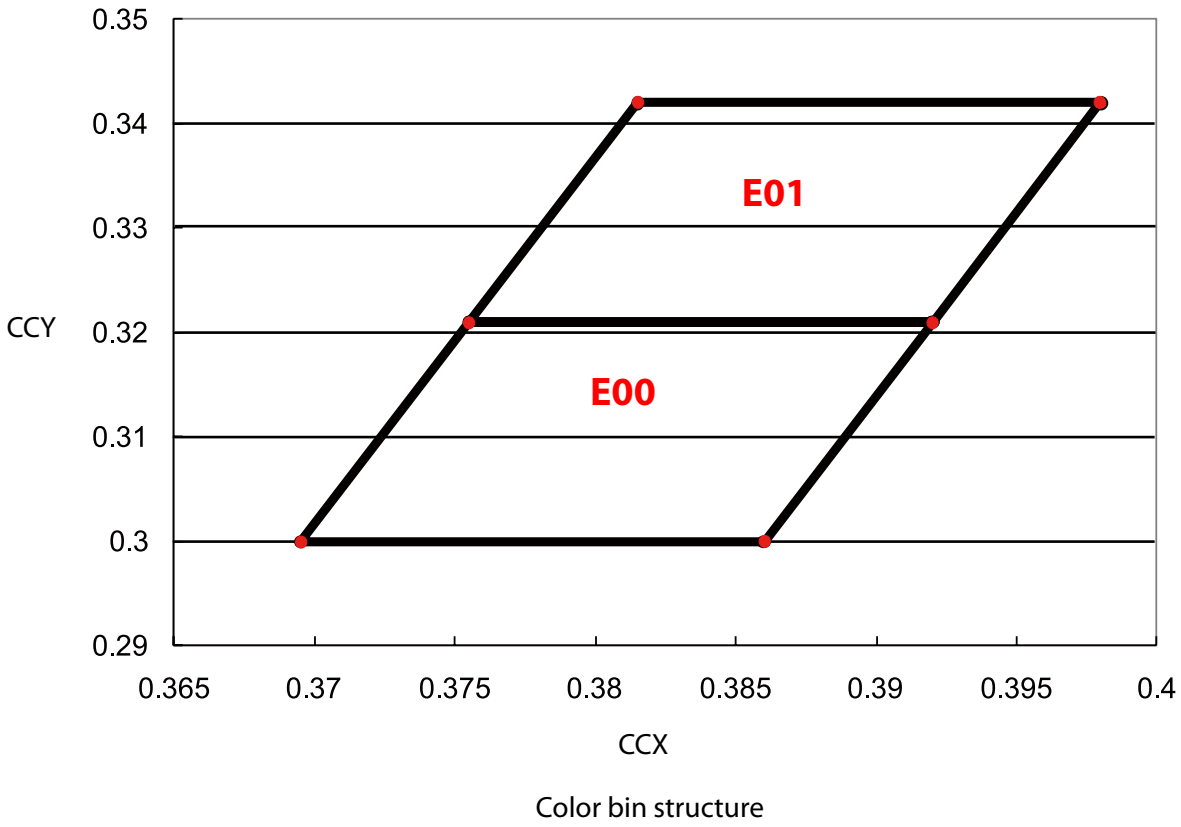
Color Bins

2T01X1PX18000001



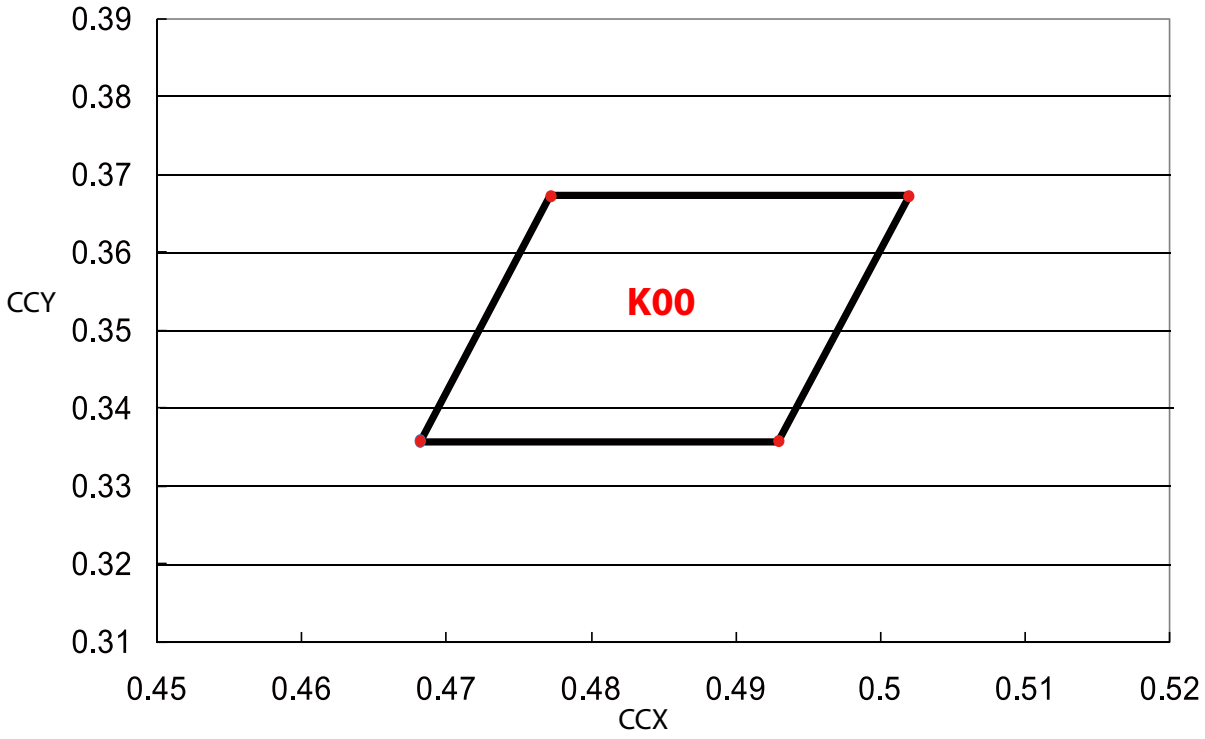
Color bin structure

PINK Bin Coordinate

Group	CIE_X	CIE_Y
E00	0.3755	0.3210
	0.3920	0.3210
	0.3695	0.3000
	0.3860	0.3000
E01	0.3755	0.3210
	0.3815	0.3420
	0.3980	0.3420
	0.3920	0.3210

Note:
CIE_x/y tolerance: ±0.005

2T01X1PX18000002



Color bin structure

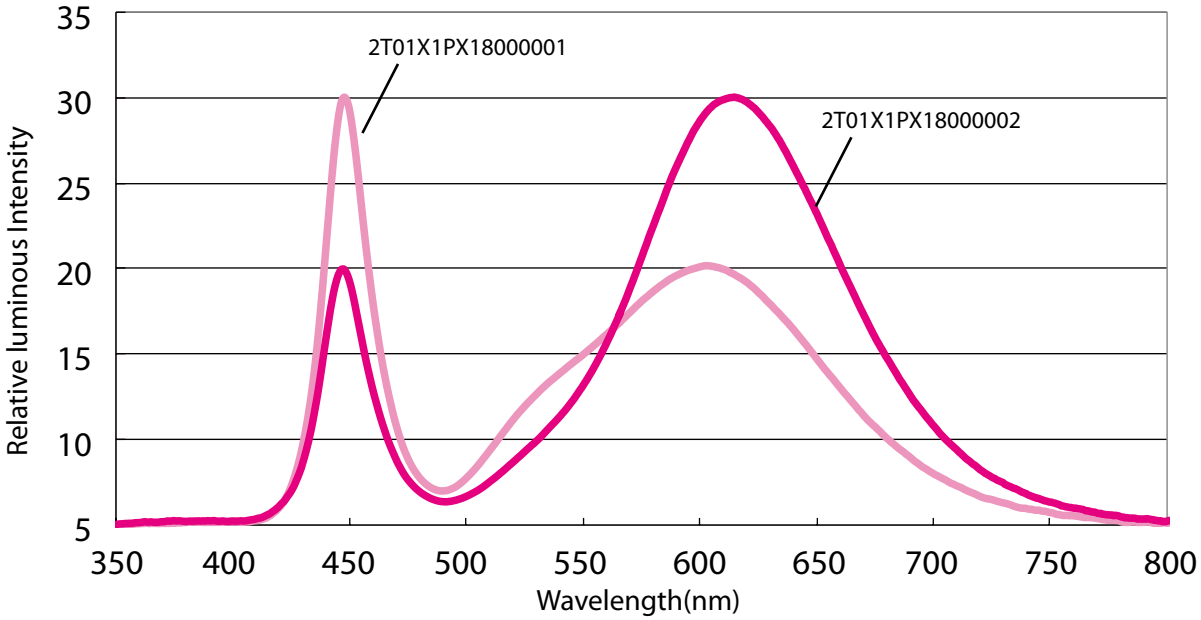
PINK Bin Coordinate

Group	CIE_X	CIE_Y
K00	0.4682	0.3357
	0.4772	0.3672
	0.5020	0.3672
	04930	0.3357

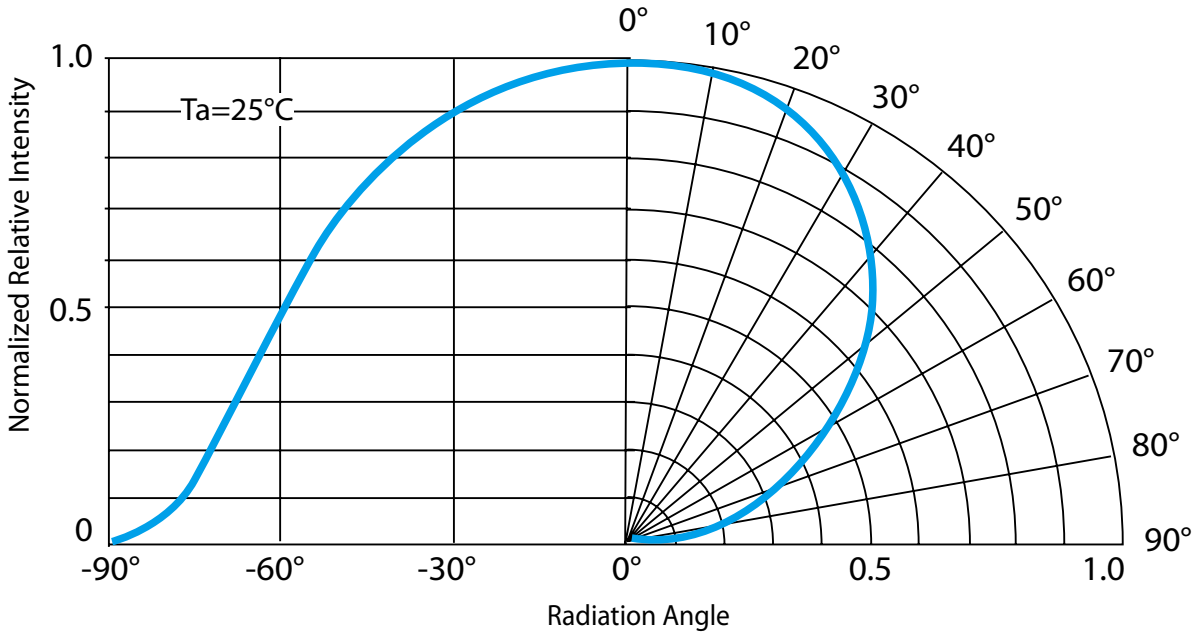
Note:
CIE_x/y tolerance: ±0.005

Characteristic curve

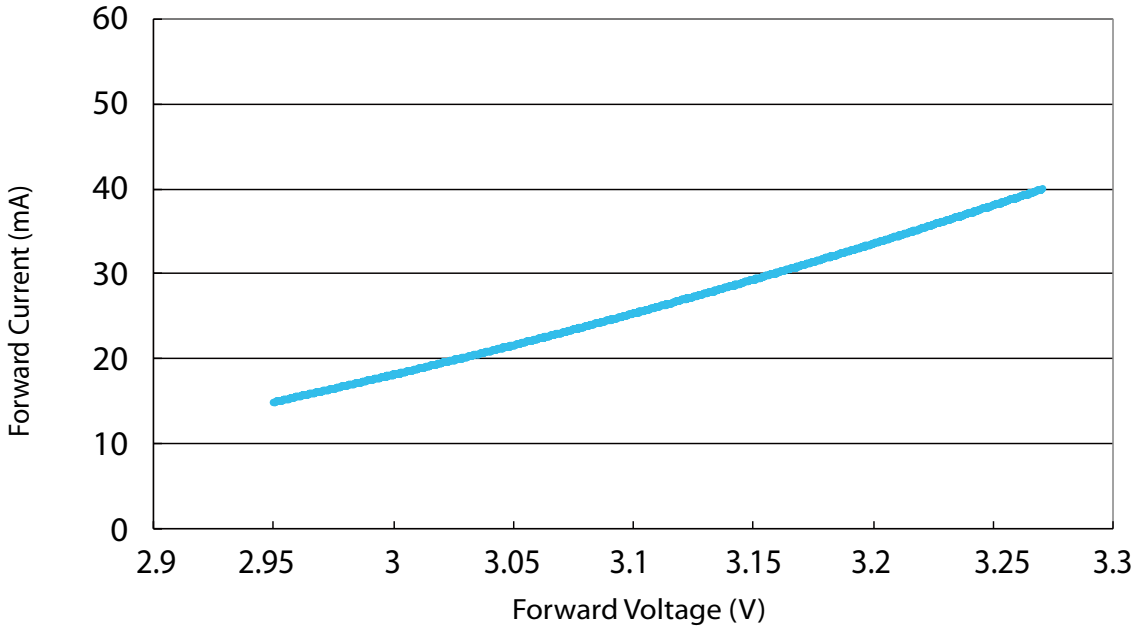
Color Spectrum



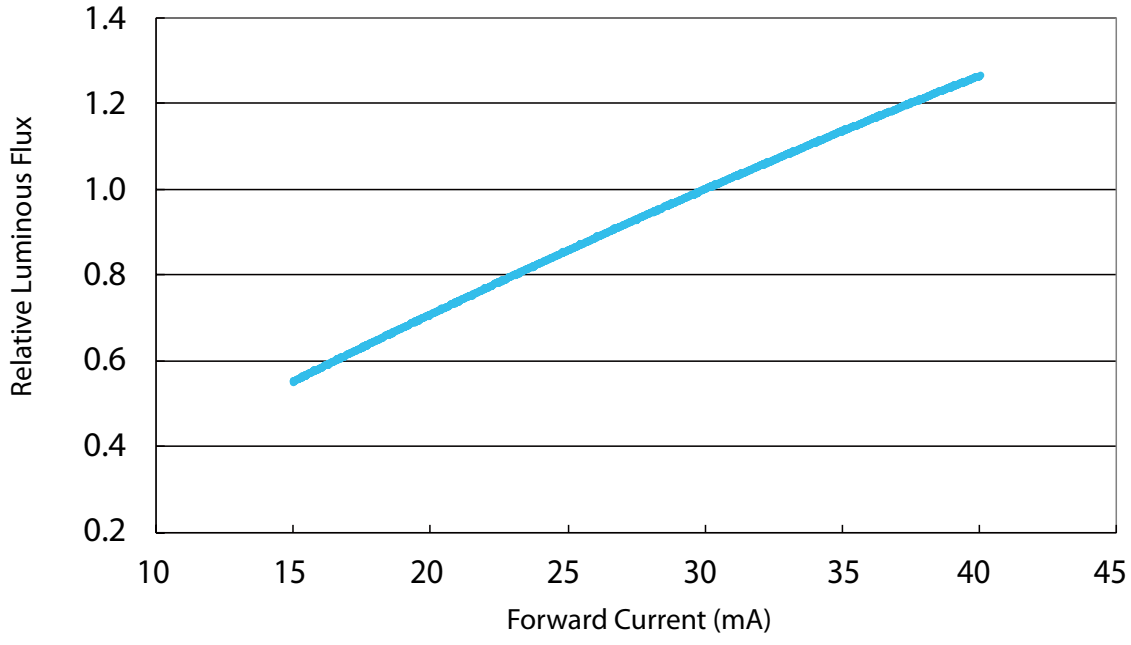
Beam Pattern



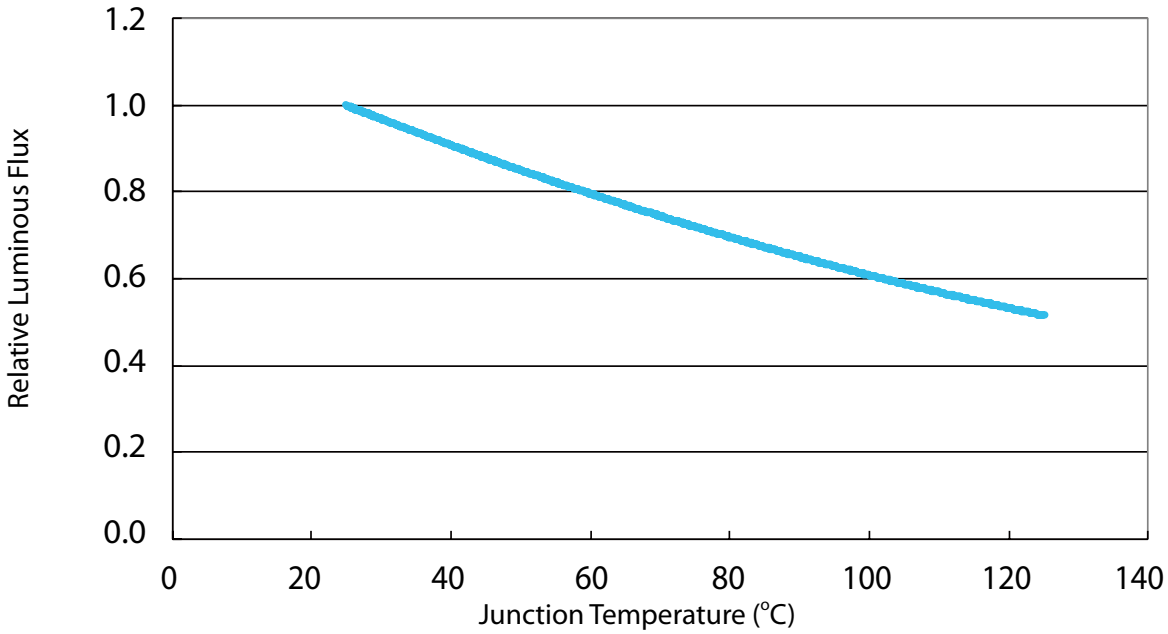
Forward Current vs. Forward Voltage



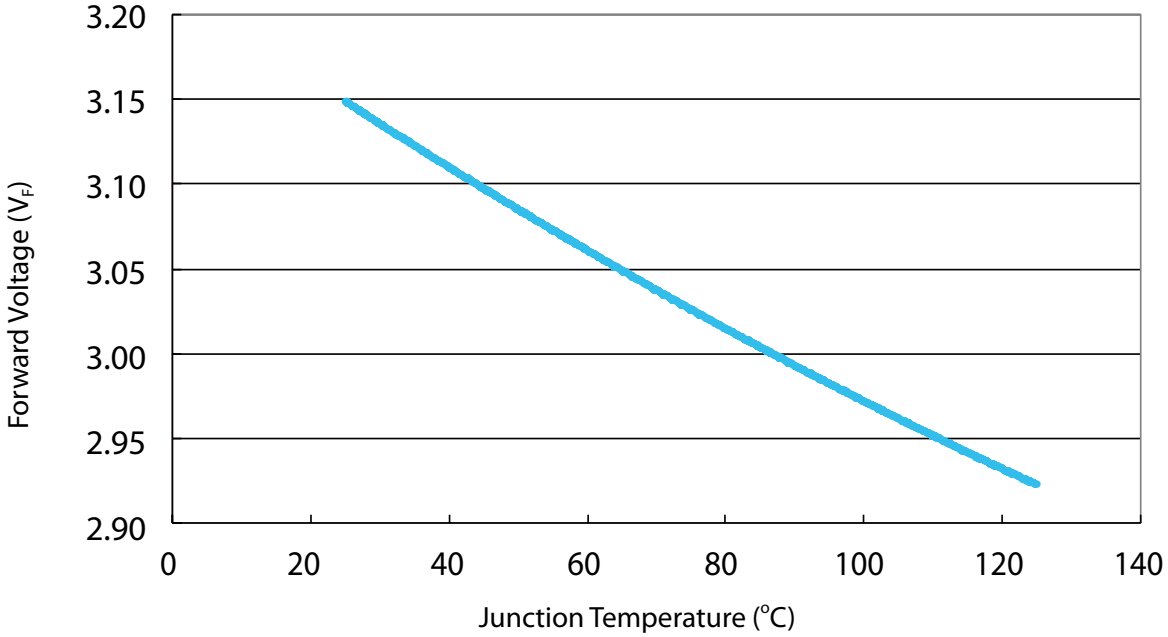
Relative Luminous Flux vs. Forward Current



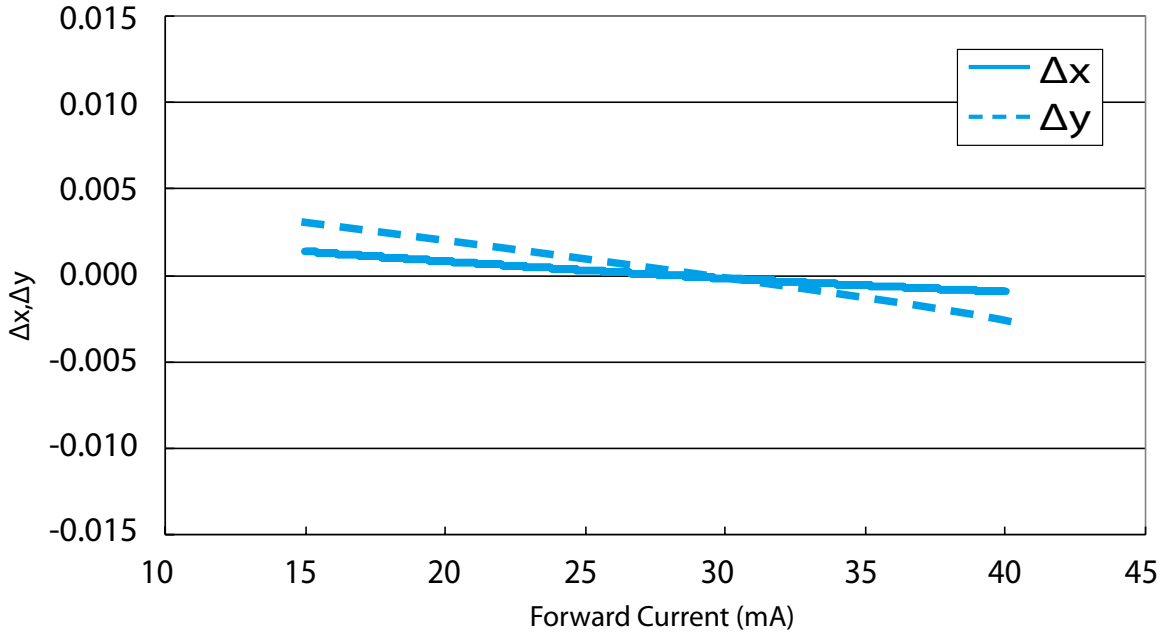
Relative Luminous Flux vs. Junction Temperature



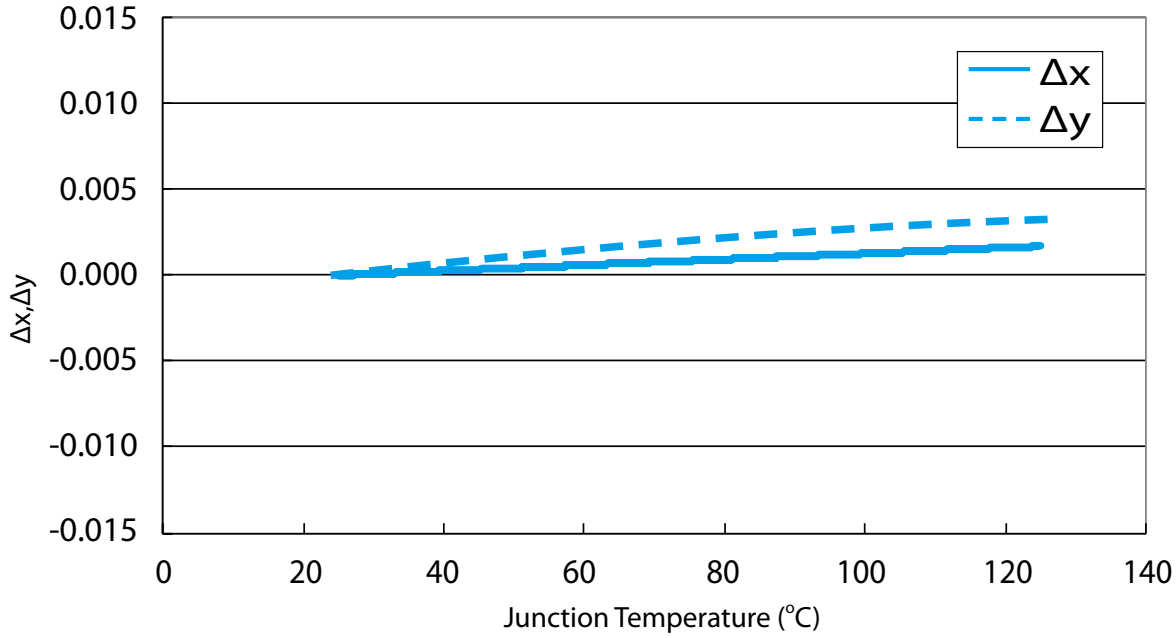
Forward Voltage vs. Junction Temperature



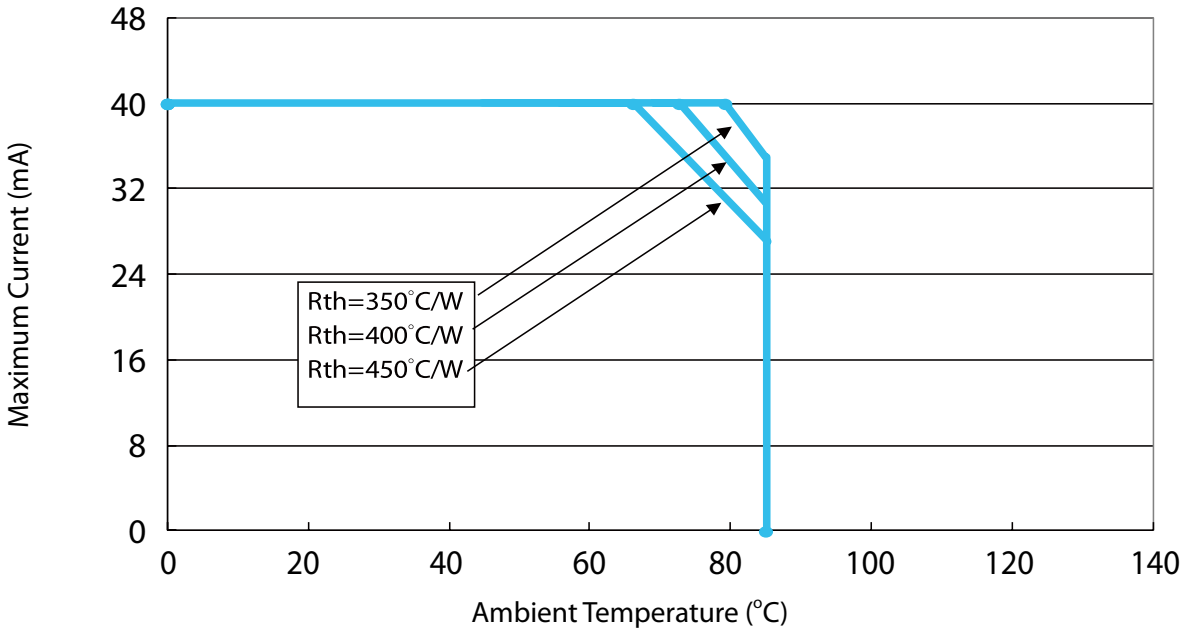
Δx,Δy vs. Forward Current



Δx,Δy vs. Junction Temperature



Maximum Current vs. Ambient Temperature



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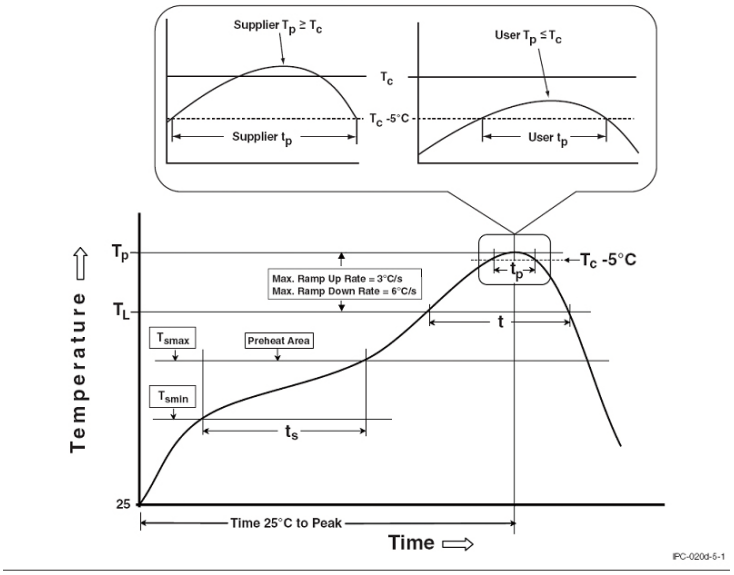
Reflow Profile

The following reflow profile is from IPC/JEDEC J-STD-020D which provided here for reference.



Reflow Profiles

Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat & Soak Temperature min (Tsmin) Temperature max (Tsmax) Time (Tsmin to Tsmax) (ts)	150 °C 200 °C 60-120 seconds
Average ramp-up rate (Tsmax to Tp)	3 °C/second max.
Liquidous temperature (TL) Time at liquidous (tL)	217 °C 60-150 seconds
Peak package body temperature (Tp)*	255 °C ~260 °C *
Classification temperature (Tc)	260 °C
Time (tp)** within 5 °C of the specified classification temperature (Tc)	30** seconds
Average ramp-down rate (Tp to Tsmax)	6°C/second max.
Time 25°C to peak temperature	8 minutes max.

Notes:
1. * Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.
2. ** Tolerance for time at peak profile temperature (tp) is defined as a supplier minimum and a user maximum.

Reliability

NO .	Test Item	Test Condition	Remark
1	Temperature Cycle	-40°C~100°C 30, 30, mins	100 Cycle
2	Thermal Shock	-40°C~100°C 15, 15 mins ≦10 sec	100 Cycle
3	Resistance to Soldering Heat	T_{SOL}=260°C, 30 sec	3 times
4	Moisture Resistance	25°C~65°C 90% RH 24 hrs / 1 cycle	10 Cycle
5	High-Temperature Storage	T_A=100°C	1,000 hrs
6	Humidity Heat Storage	T_A=85°C RH=85%	1,000 hrs
7	Low-Temperature Storage	T_A=-40°C	1,000 hrs
8	Operation Life test	25°C	1,000 hrs
9	High Temperature Operation Life test	85°C	1,000 hrs
10	High Humidity Heat Life Test	85°C, 85%RH	1,000 hrs
11	ON/OFF Test	30 sec ON, 30 sec OFF	1.5W times

Failure Criteria

Item	Criteria for Judgment	
	Min.	Max.
Lumen Maintenance	85%	-
Δu'v'	-	0.006
Forward Voltage	-	Initial Data x 1.1
Reverse Current	-	10 μA
Resistance to Soldering Heat	No dead lamps or visual damage	

Cautions

LED avoids being stored and lighted in the environment containing sulfur. Some materials, such as seals, printing ink, enclosure and adhesives, may contain sulfur, avoiding the exposure in acid or halogen environment.

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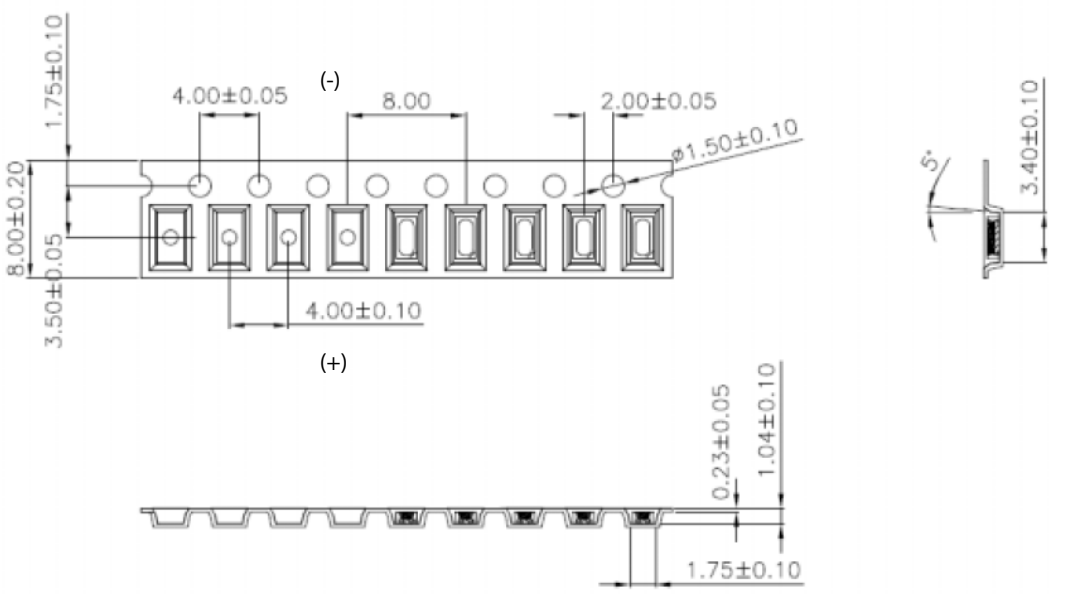
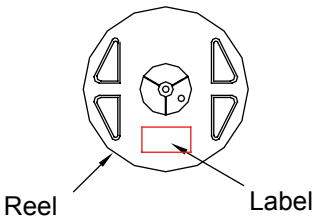
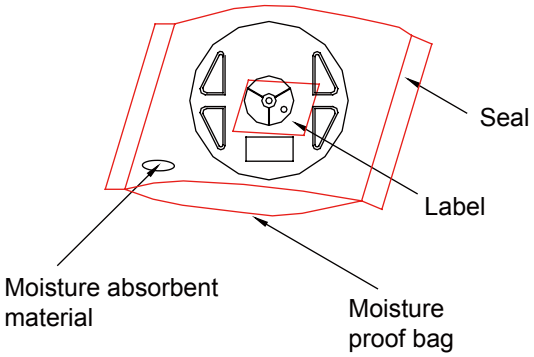
Product Packaging Information





Taping reel dimensions



Package & Label

Item	Quantity	Total	Dimensions(mm)
Reel	4,000pcs	4,000pcs	R=178
Carton	50 reels	200,000pcs	353*254*256
Starting with 50pcs empty, and 50pcs empty at the last			

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Revision History

Versions	Description	Release Date
1	Establish order code information	2013/01/11
2	1. Add the Color BIN&Reliability 2. Add Order Code 3. Revise Emitter dimension & Characteristic curve 4. Update the name of datasheet 5. Revise Luminous flux characteristic	2014/05/19
3	1. Add JEDEC Moisture Sensitivity 2. Update Luminous flux characteristic	2014/05/23
4	Revise Reliability	2014/08/22
5	Add CIE_x/y tolerance	2015/01/09
6	1. Update front page to new pattern 2. Add cautions of reliability 3. Revise the luminous flux characteristic	2017/06/22

About Edison Opto

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at www.edison-opto.com

www.edison-opto.com

For general assistance please contact:
service@edison-opto.com.tw

For technical assistance please contact:
LED.Detective@edison-opto.com.tw