EDISON
Lighting Design Manufacturing Service

PLCC Series

PLCC 3528 0.06W UV Datasheet

Features :

- High luminous Intensity and high efficiency
- Based on Ultraviolet : InGaN / GaInP technology
- Excellent performance
- Suitable for all SMT assembly methods
- IR reflow process compatible
- Environmental friendly; RoHS compliance

EDISON
Lighting Design Manufacturing Service

Table of Contents

Lighting Design Manufacturing Service

General Information

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 signboard.

Ordering Code Format

2	T	0 3	Y 6	V 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	03	3528	Y6	0.06W	VX	Ultraviolet

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

EDISON
Lighting Design Manufacturing Service

Absolute Maximum Ratings

Absolute maximum ratings (T_a=25°C)

Parameter	Symbol	Value	Units
Forward Current	I_F	20	mA
Pulse Forward Current (tp<=100μs, Duty cycle=0.25)	I_{pulse}	30	mA
Reverse Current	I_R	10	uA
Reverse Voltage	V_R	5	V
LED Junction Temperature	T_J	115	°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.)	$2\Theta_{1/2}$	125	Degree
Forward Voltage	(Typ.)	V_F	5	V
Thermal resistance		-	170	°C/W
Wavelength		-	389-401	nm
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:
1. $2\theta_{1/2}$ is the off-axis angle where the luminous intensity is half of the axial luminous intensity.
2. Color Rendering index CRI tolerance: ±2.

Radiant Flux

Radiometric Power, I_F=20mA and T_J=25˚C

Color	Group	Min. Radiant Flux (mW)	Max. Radiant Flux (mW)	Forward Current(mA)	Order Code
Ultraviolet	AA	5	10	20	2T03Y6VX00000002
	AB	10	15		
	AC	15	20		
	AB	20	25		

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

Voltage Bin Structure

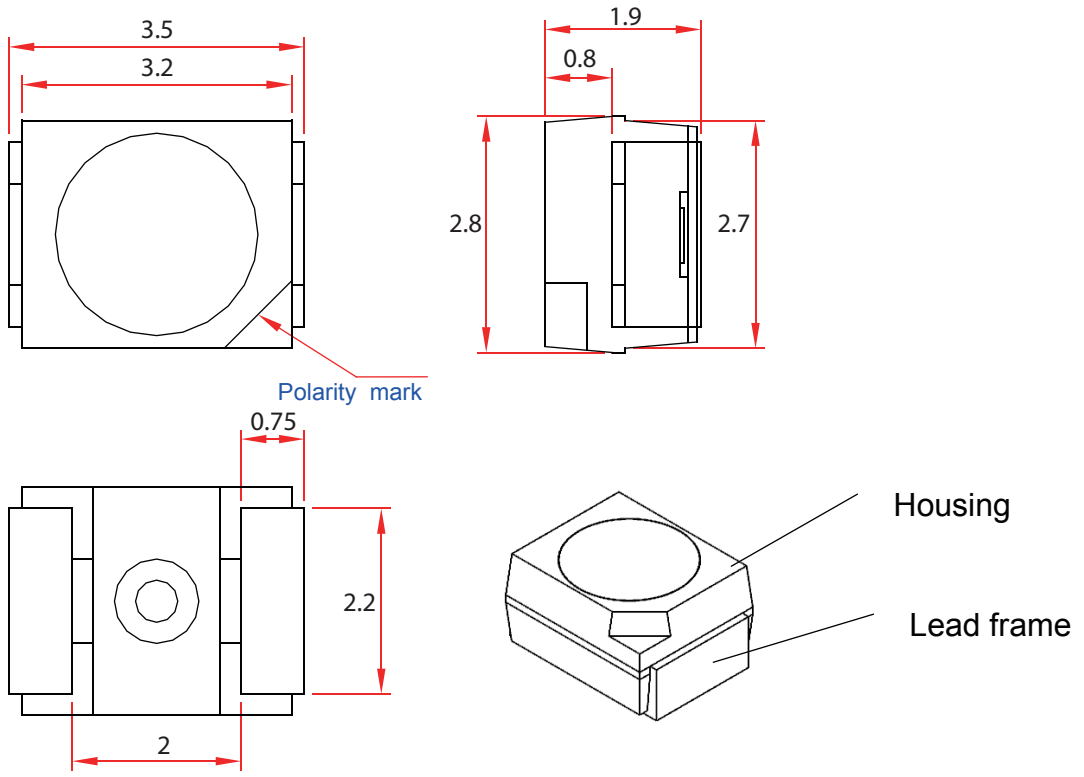
Group	Min. Voltage (V)	Max. Voltage (V)
V02	3.1	3.4
V03	3.4	3.7
V04	3.7	4.0

Note:
Forward voltage measurement allowance is ± 0.1V.

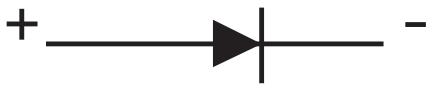
Lighting Design Manufacturing Service

Mechanical Dimensions

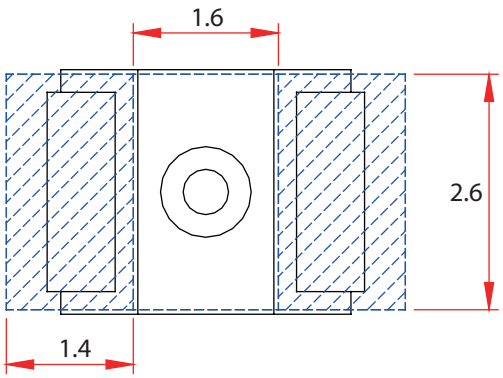
Emitter Type Dimension



Circuit



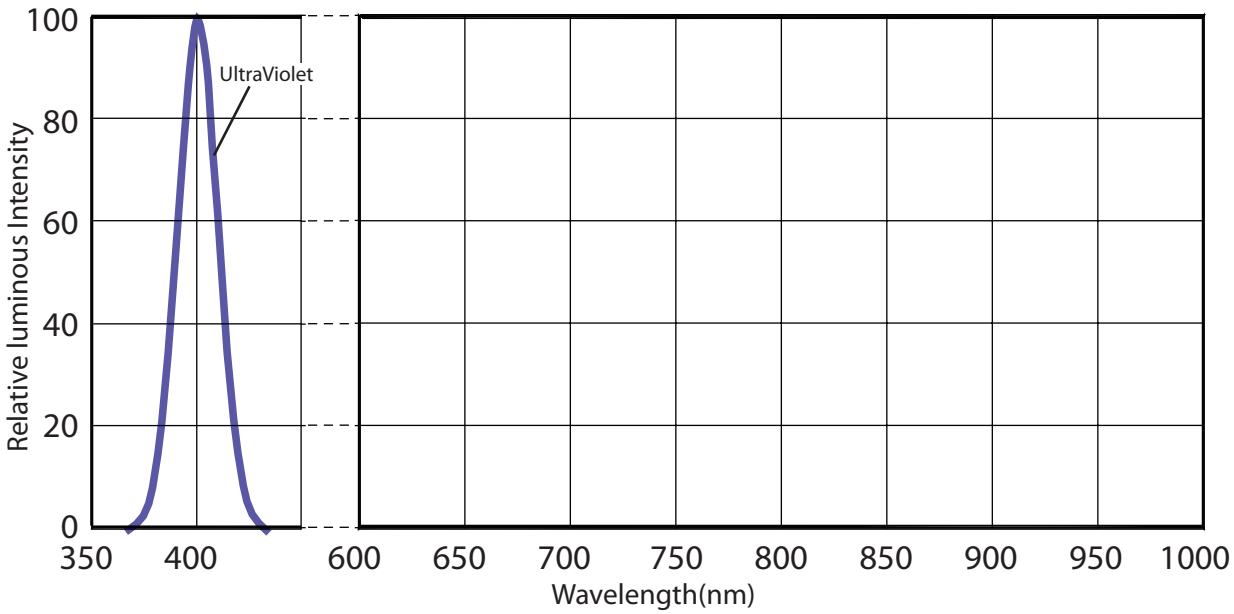
Solder Pad



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

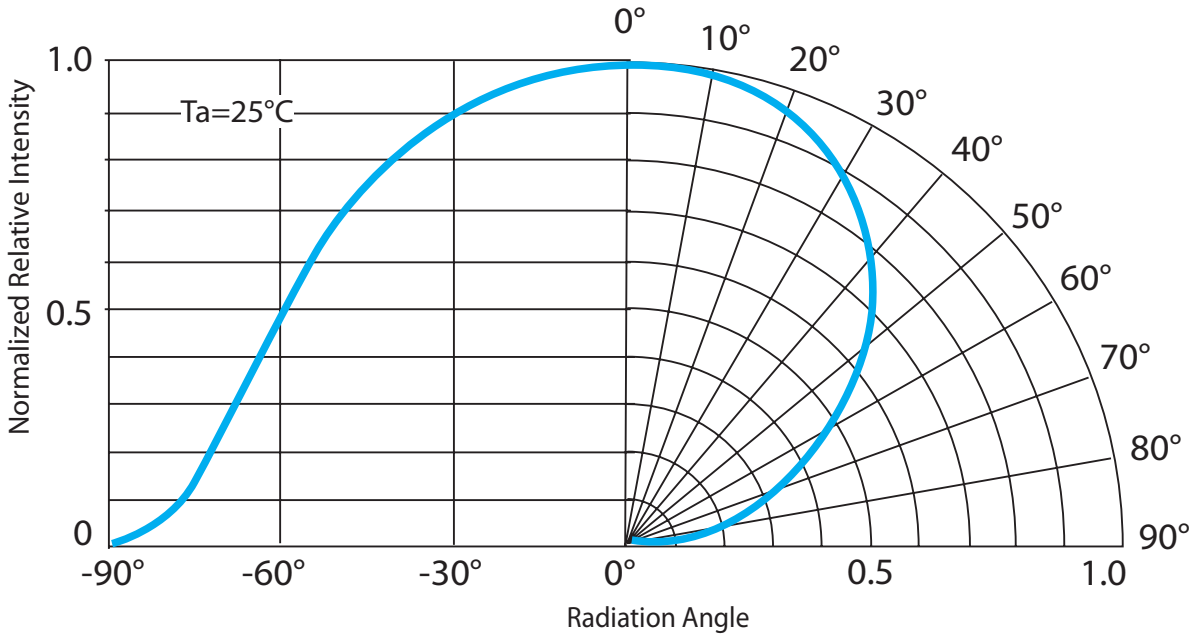
Characteristic curve

Color Spectrum



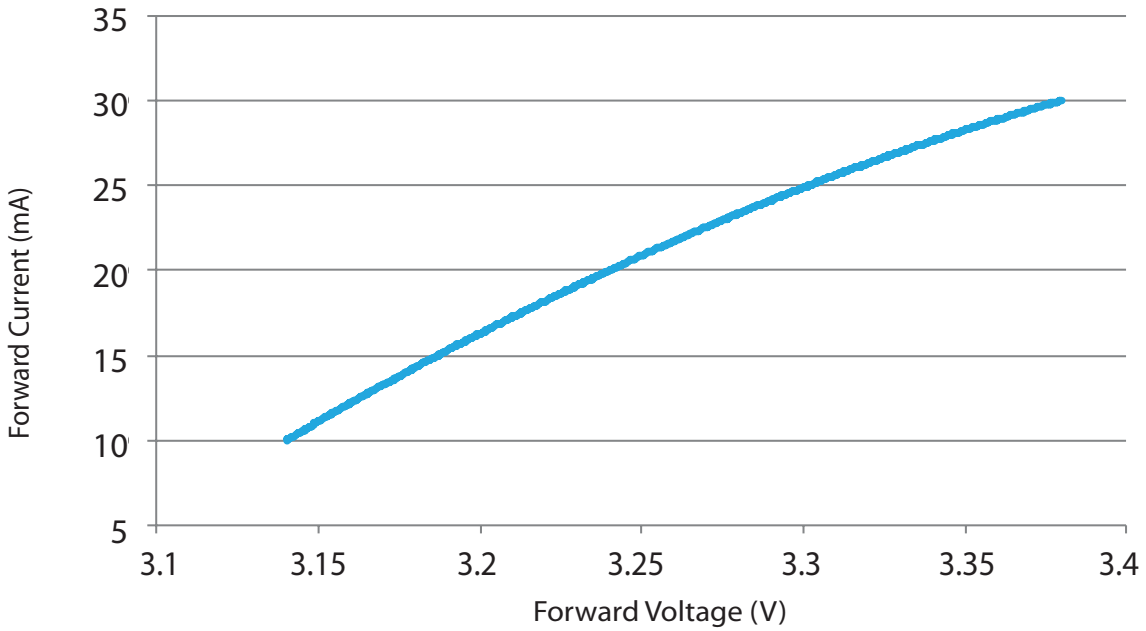
Color Spectrum at a typical CCT for PLCC 3528 0.06W UV

Beam Pattern



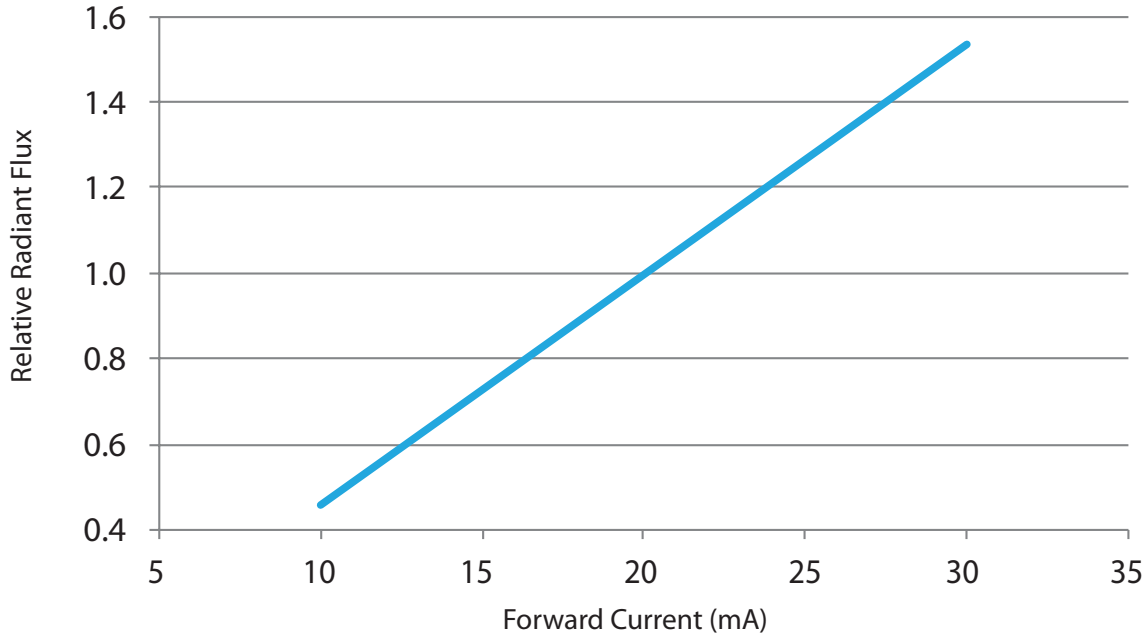
Beam pattern diagram for PLCC series

Forward Current vs. Forward Voltage



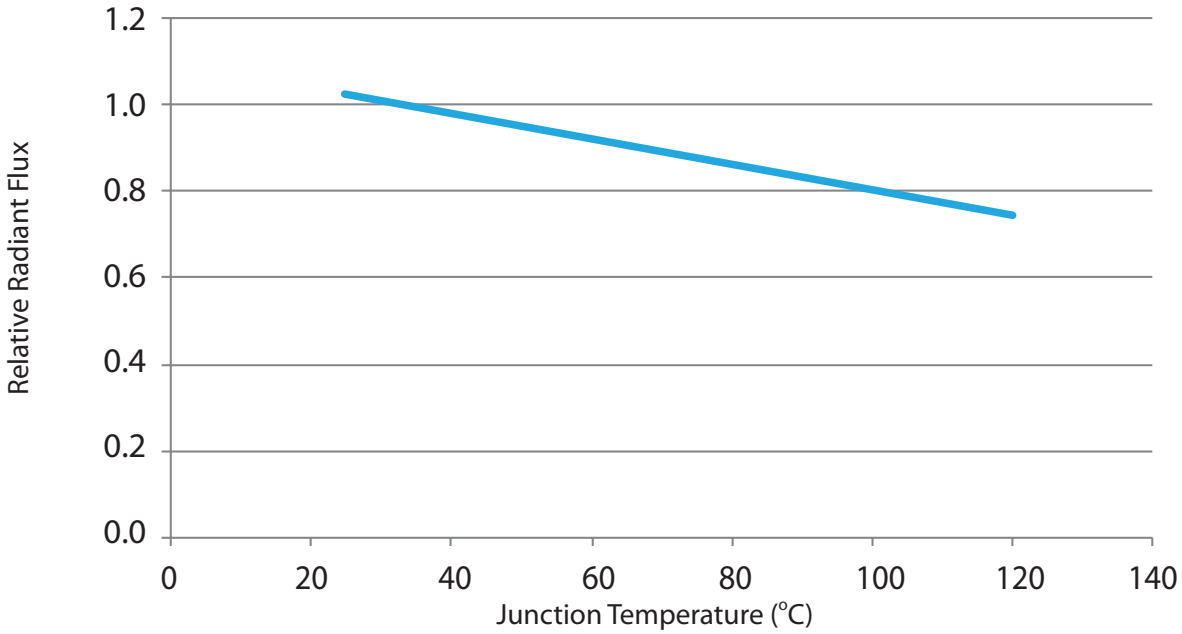
Forward Current vs. Forward Voltagefor PLCC 3528 0.06W UV

Relative Radiant Flux vs. Forward Current



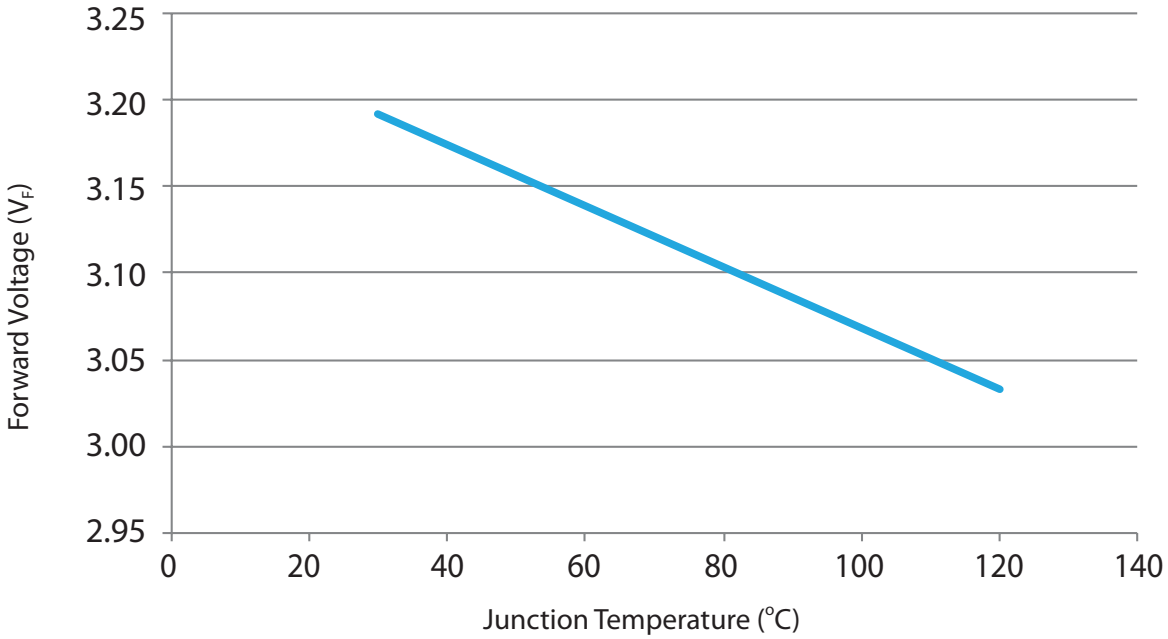
Relative Radiant Flux vs. Forward Current for PLCC 3528 0.06W UV

Relative Radiant Flux vs. Junction Temperature



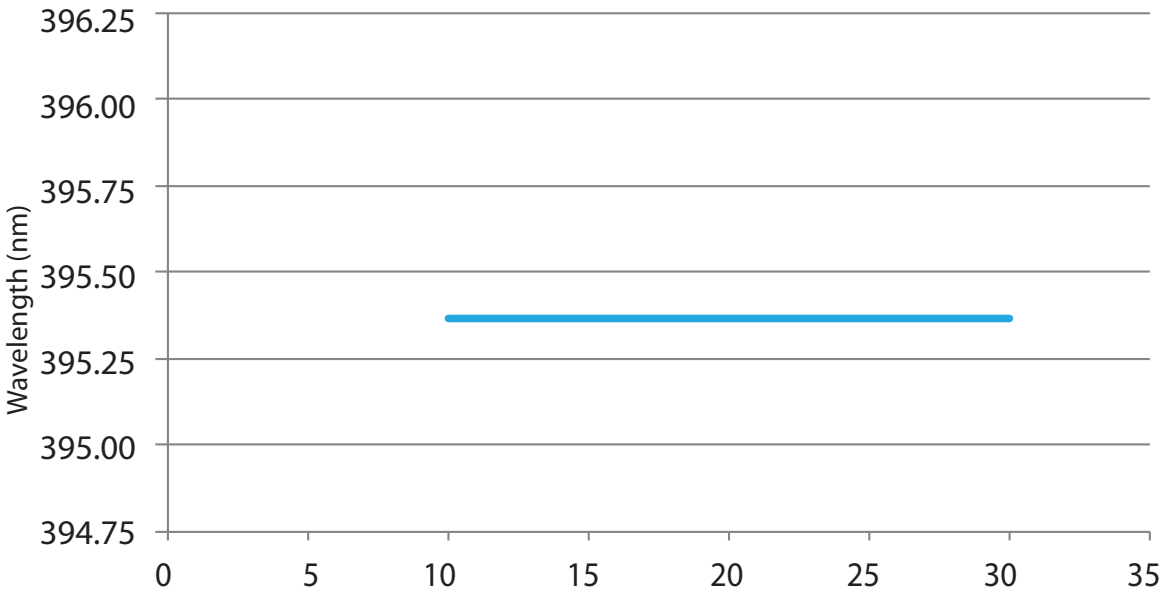
Relative Radiant Flux vs. junction temperature for PLCC 3528 0.06W UV

Forward Voltage vs. Junction Temperature



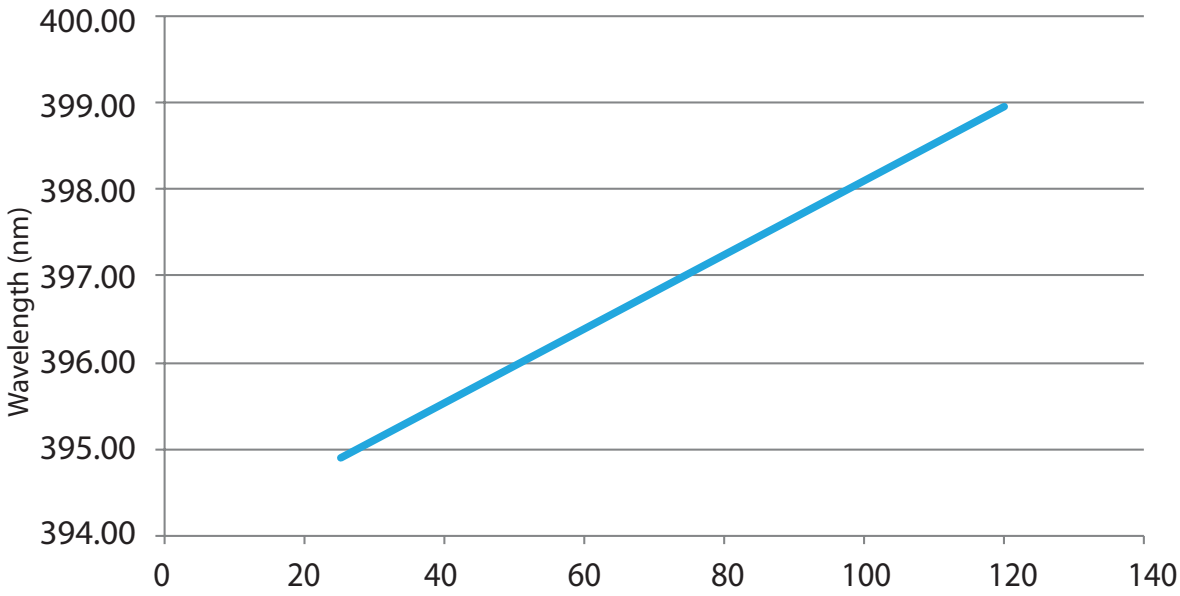
Forward voltage vs. junction temperature for PLCC 3528 0.06W UV

Wavelength vs. Forward Current



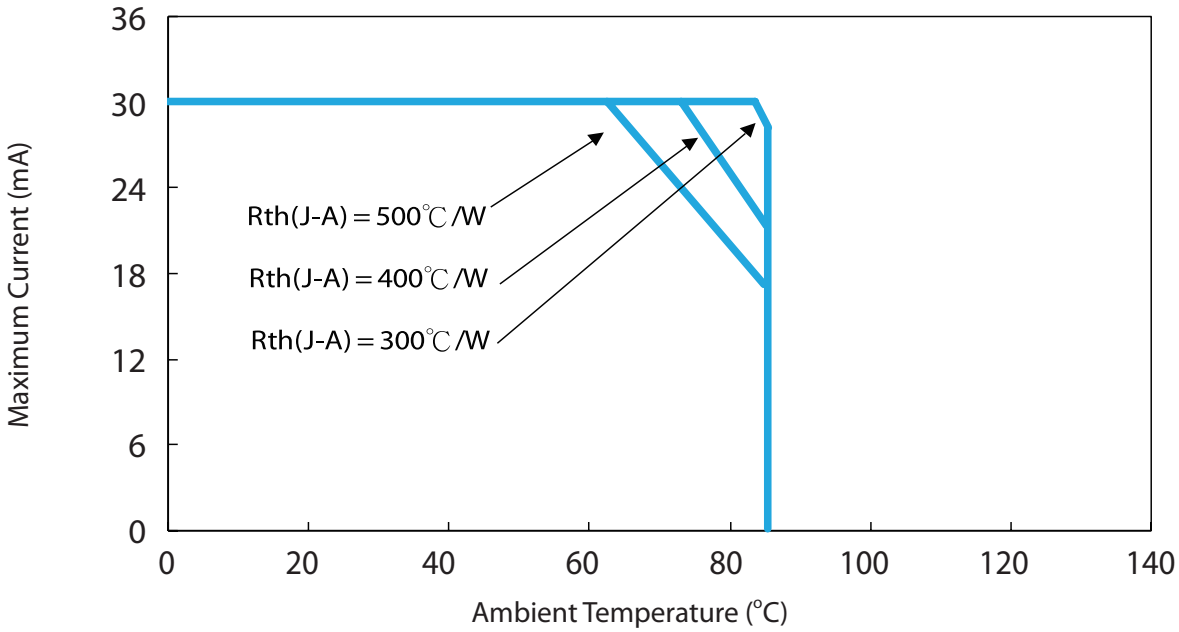
Wavelength vs. Forward Current for PLCC 3528 0.06W UV

Wavelength vs. Junction Temperature



Wavelength vs. junction temperature for PLCC 3528 0.06W UV

Maximum Current vs. Ambient Temperature

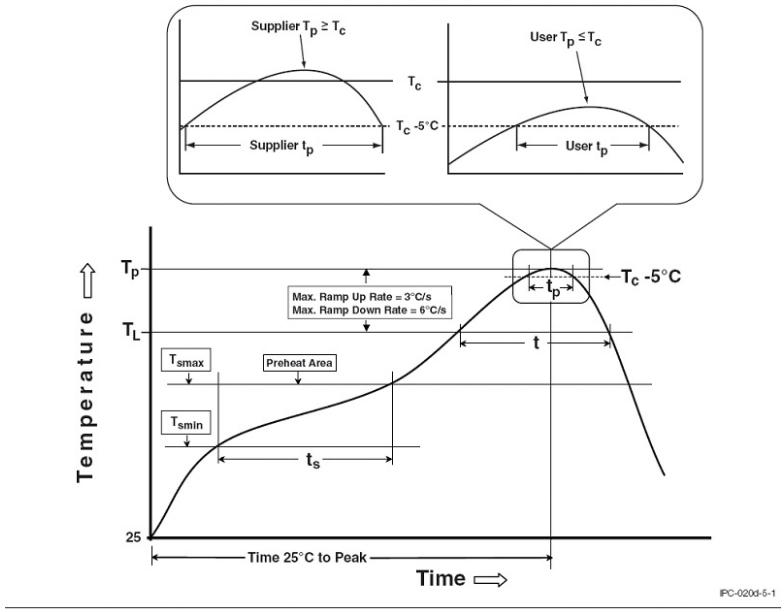


Maximum Current vs. Ambient Temperature for PLCC 3528 0.06W UV

Lighting Design Manufacturing Service

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

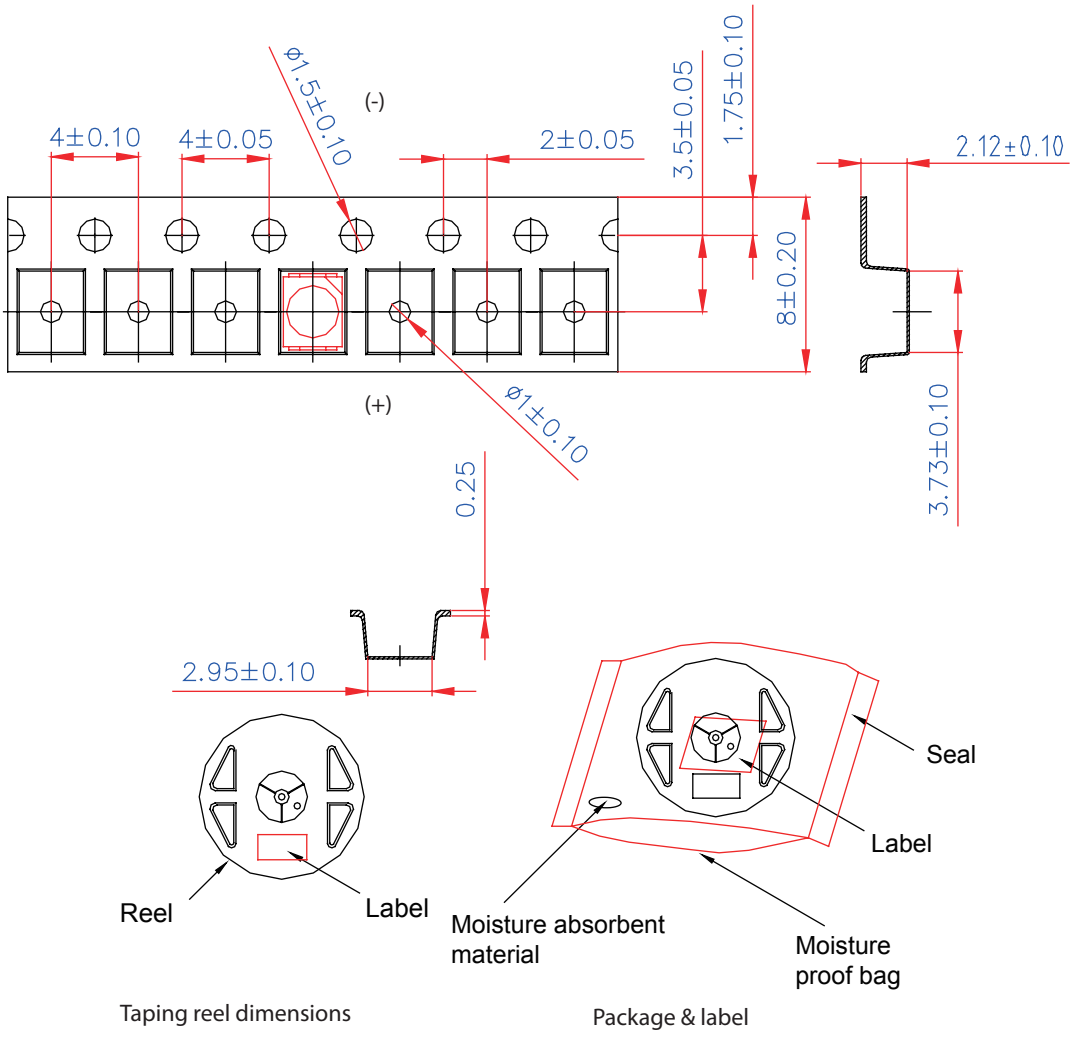
NO .	Test Item	Test Condition	Remark
1	Temperature Cycle	-40°C~100°C 30, 30, mins	100 Cycle
2	Thermal Shock	-40°C~100°C 15, 15 mins ≦10 sec	100 Cycle
3	Resistance to Soldering Heat	T_{SOL}=260°C, 30 sec	3 times
4	Moisture Resistance	25°C~65°C 90% RH 24 hrs / 1 cycle	10 Cycle
5	High-Temperature Storage	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	

EDISON
Lighting Design Manufacturing Service

Product Packaging Information



Taping reel dimensions

Package & label

Item	Quantity	Total	Dimensions(mm)
Reel	2,000pcs	2,000pcs	R=178
Box	5 Reels	10,000pcs	240*235*67
Carton	5 boxes	50,000pcs	353*254*256
Starting with 50pcs empty,and 50pcs empty at the last			

EDISON
Lighting Design Manufacturing Service

Revision History

Versions	Description	Release Date
1	Establish order code information	2014/05/13
2	Revise Reliability	2014/08/22

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