Lighting Design Manufacturing Service

www.edison-opto.com

PLCC Series

ET-5050x-31xW Datasheet

Features :

- High Luminous Intensity
- Based on Blue/Green : InGaN, Red : AlGaInP technology
- Wide viewing angle : 120°
- Excellent performance and visibility
- Suitable for all SMT assembly methods
- IR reflow process compatible
- Environmental friendly; RoHS compliance

Typical Applications

- Signal and Symbol Luminaire
- Indoor Displays
- Backlighting (illuminated advertising, general lighting)
- Interior Automotive Lighting

 version : 1

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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.

Product Nomenclature

The following table describes the available color, package size, and chip quantity.

Table 1. PLCC 5050 series Nomenclature

ET	5050	B	-	3	1	3	W
X1	X2	X3		X4	X5	X6	X7

X1 LED Item		X2 Module		X3 Emitting Color		X4 Chip Quantity		X5~X6 Serial No.	
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type
ET	Edison Top LED	3528	3.5x2.8mm	W	Cool White	1	1pcs	--	--
		5050	5.0x5.0mm	H	Neutral White	3	3pcs		
				X	Warm White	A	0.5W		
				R	Red	B	1W		
				A	Amber(615nm)				
				Y	Yellow(590nm)				
				T	True Green				
				B	Blue				
				RTB	RGB 3chips				

X7 Feature	
Code	Type
W	White surface
B	Black surface
D	Black housing

Mechanical Dimensions

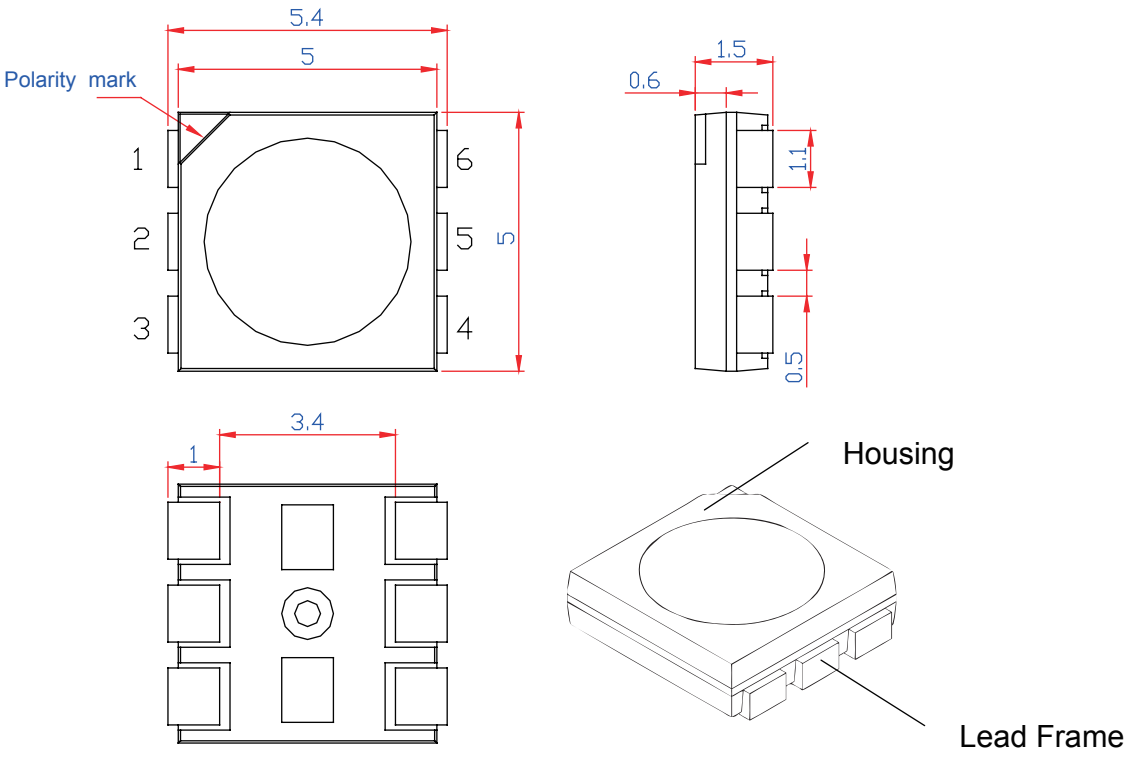

Figure 1. PLCC 5050 series Dimension

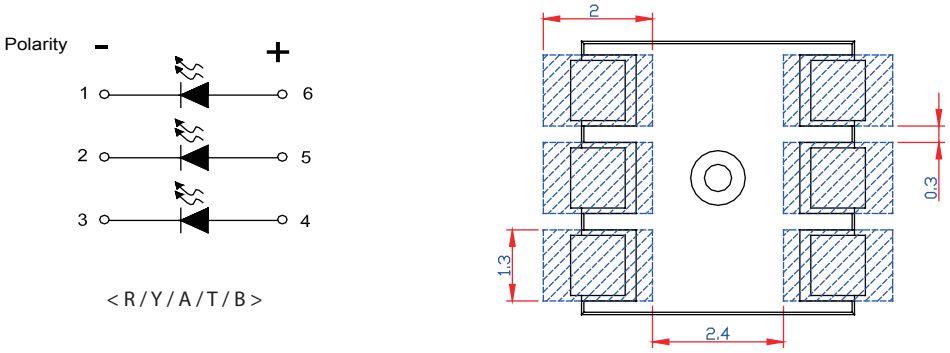

Figure 2. PLCC 5050 series circuit diagram and recommended soldering pad

Notes:
1. All dimensions are measured in mm.
2. Tolerance : ± 0.2 mm

Absolute Maximum Ratings

The following table describe absolute maximum ratings of PLCC 5050 series.

Table 2. Absolute maximum ratings for PLCC 5050 series

Parameter	Rating (R)/(A)/(Y)	Rating (T)/(B)	Unit	Symbol
Forward Current	35	30	mA	I_F
Pulse Forward Current (tp≤100μs, Duty cycle=0.25)	80	100	mA	
Reverse Current (per die)	10	10	uA	I_R
Reverse Voltage	5	5	V	V_R
Forward Voltage	2.8	3.7	V	V_F
LED Junction Temperature	115		°C	T_J
Operating Temperature	-30 ~ +85		°C	
Storage Temperature	-40 ~ +100		°C	
Soldering Temperature	255~260		°C	
Manual Soldering at 350°C(Max.)	3		Sec	

Notes:
1. Above values are based on 1-chip performanc
2. Proper current derating must be observed to maintain junction temperature below the maximum at all time.
3. LEDs are not designed to be driven in reverse bias.
4. tp: Pulse width time

Luminous Intensity Characteristic

The following table describes luminous intensity of PLCC 5050 series.

Table 3. Luminous intensity characteristics at I_F=20mA/chip and T_a=25°C for PLCC 5050 series

Part Name	Color	Luminous intensity(mcd)		Luminous Flux Typ.(lm)
		Min.	Min.	
ET-5050R-311W	Red	ZI	1450	4.2~5.0
		ZJ	1750	
ET-5050A-311W	Amber	ZI	1450	4.2~5.0
		ZJ	1750	
ET-5050Y-311W	Yellow	ZI	1450	4.2~5.0
		ZJ	1750	
ET-5050T-313W	True Green	ZL	2650	8.5~10.2
		ZM	3250	
ET-5050B-313W	Blue	ZG	850	2.5~3.4
		ZH	1150	

Note:
Luminous intensity is measured with an accuracy of ± 10%

Characteristics

Optical Characteristics

Table 4 . Optical characteristics at I_F=20mA/chip and Ta=25°C for PLCC 5050

Part Name	Color	Wavelength (nm)			Viewing Angle (Degree)
		Min.	Typ.	Max.	
ET-5050R-311W	Red	620	625	630	120
ET-5050A-311W	Amber	610	615	620	120
ET-5050Y-311W	Yellow	585	590	595	120
ET-5050T-313W	True Green	520	525	535	120
ET-5050B-313W	Blue	460	470	475	120

Note:
Wavelength is measured with an accuracy of ± 1nm

Electrical Characteristics

Table 5 . Electrical characteristics at I_F=20mA/chip and Ta=25°C for PLCC 5050

Part Name	Color	V_F (V)			Unit
		Min.	Typ.	Max.	
ET-5050R-311W	Red	1.8	--	2.8	V
ET-5050A-311W	Amber	1.8	--	2.8	V
ET-5050Y-311W	Yellow	1.8	--	2.8	V
ET-5050T-313W	True Green	2.8	--	3.7	V
ET-5050B-313W	Blue	2.8	--	3.7	V

Note:
Forward Voltage is measured with an accuracy of ± 0.1V

Characteristic Curve

Spectrum

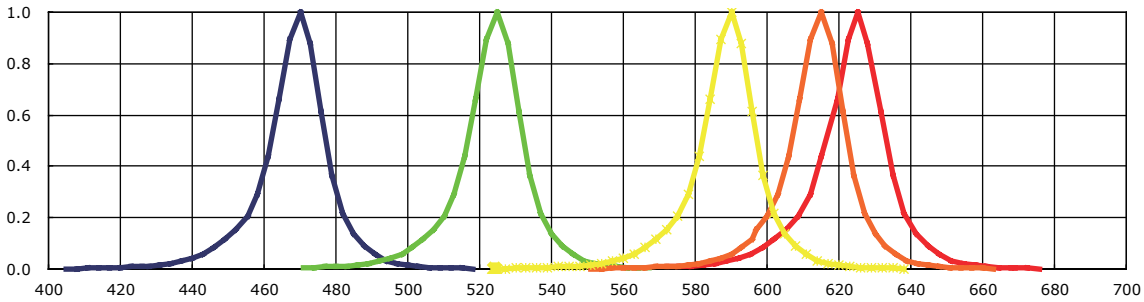

Figure 3. Wavelength & relative intensity for PLCC 5050 series

Radiation Diagram

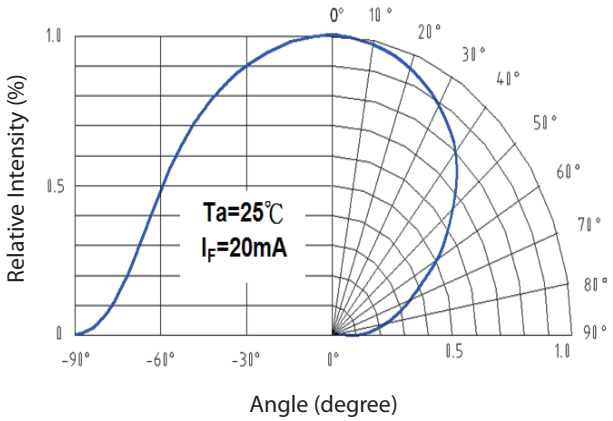

Figure 4. Beam pattern diagram for PLCC 5050 series

Ambient Temperature & Forward Current

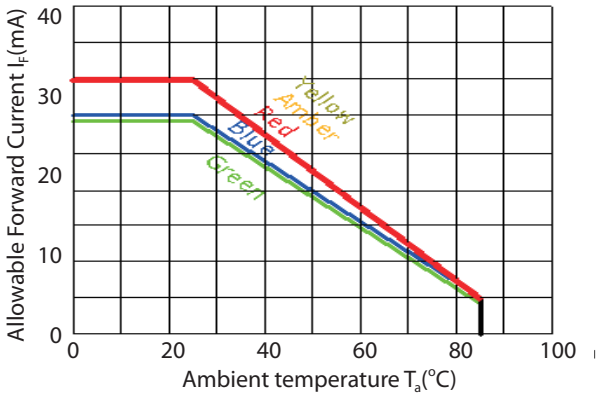

Figure 5. Ambient temperature & forward current for PLCC 5050 series

Luminous Flux & Forward Current

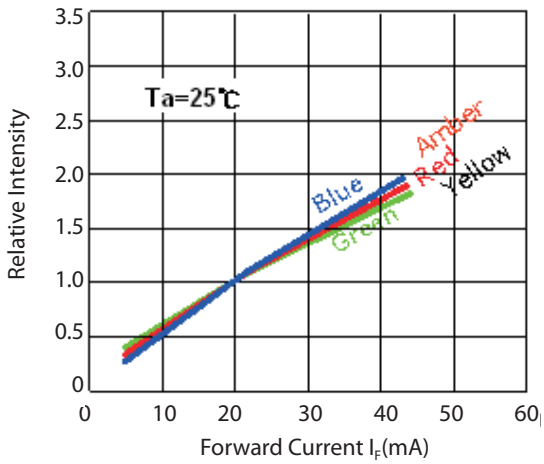

Figure 6. Forward current & relative intensity for PLCC 5050 series

Forward Voltage & Forward Current

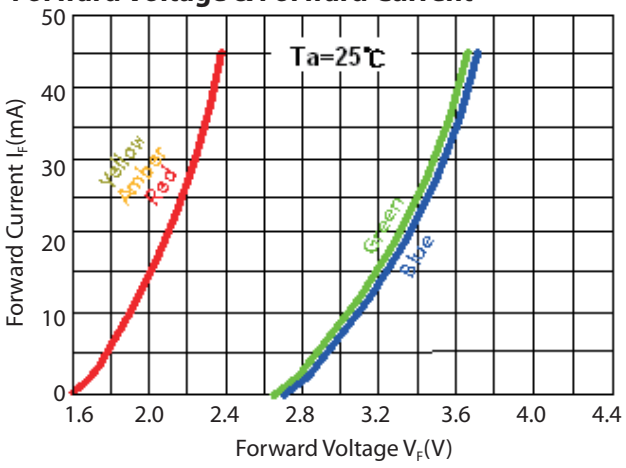

Figure 7. Forward voltage & forward current for PLCC 5050 series

Product Packaging Information

Taping Reel

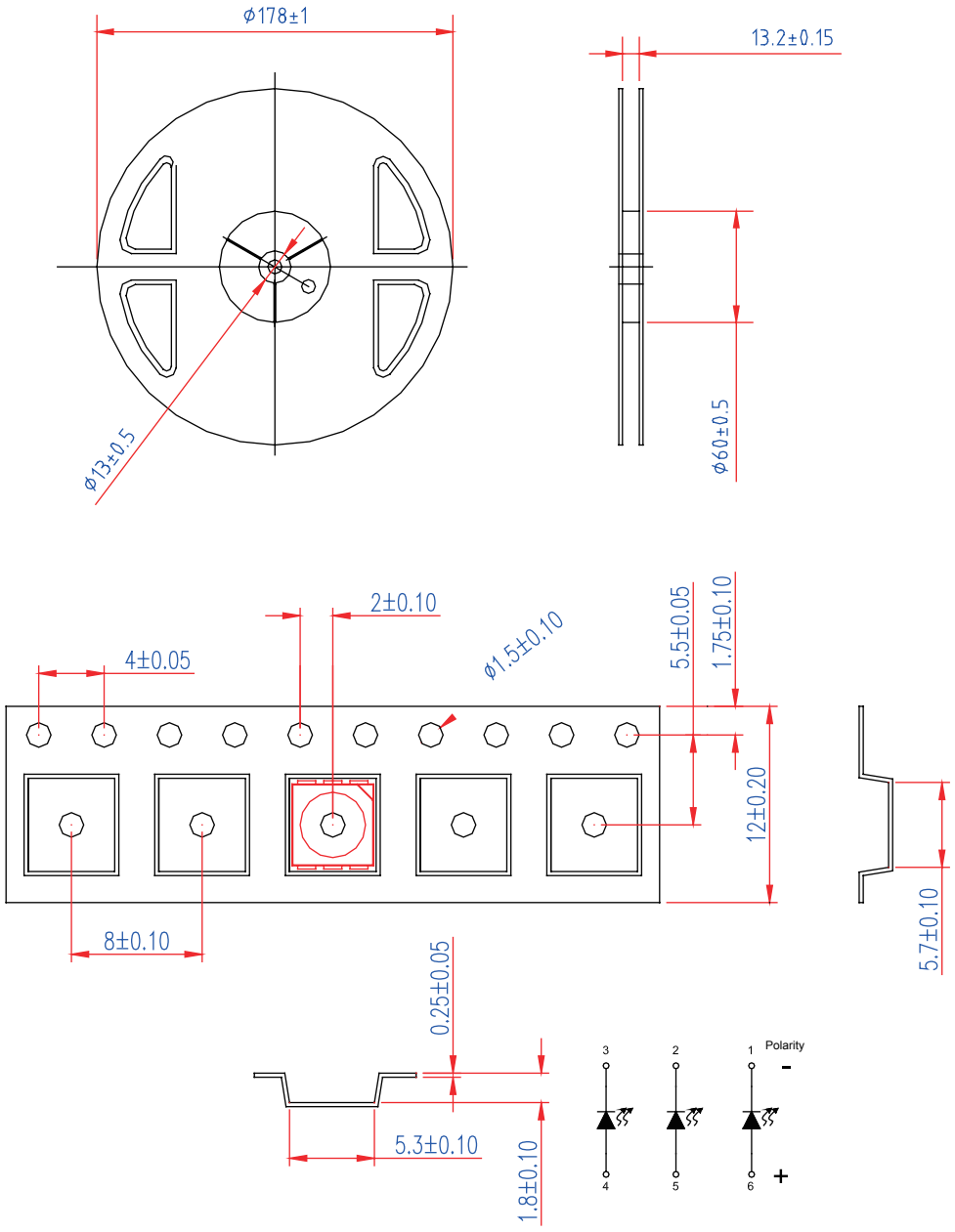

Figure 8. Taping reel dimensions

Packaging

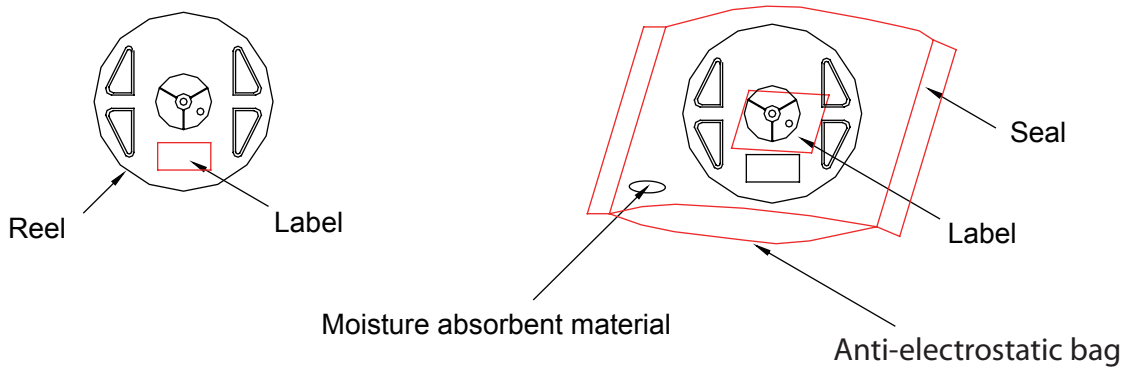

Figure 9. Packaging diagram

Package Label

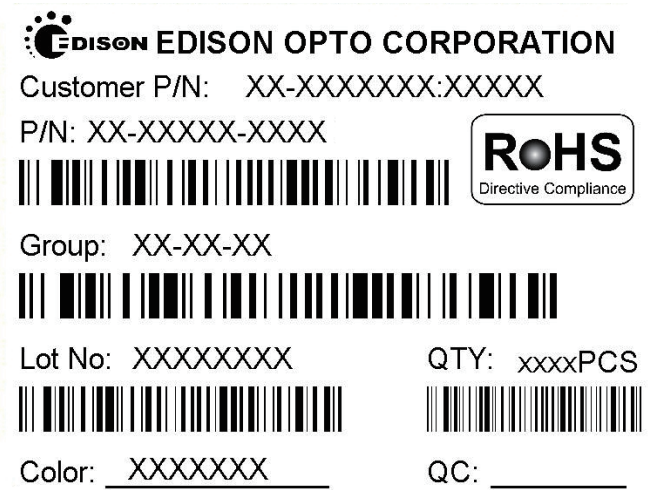

Figure 10. Package label

Table 6. Package dimensions and quantity

Item	Quantity	Total	Dimensions(mm)
Reel	1,000pcs	1,000pcs	Diameter=178
Box	5 reels	5,000pcs	240*235*67
Carton	10 boxes	50,000pcs	500*260*355

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Revision History

Table 7. Revision history of PLCC ET-5050x-31xW series datasheet

Version	Description	Release Date
1	1. Establish a datasheet	2011.08.16

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

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