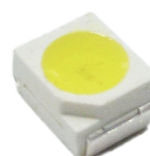


PLCC Series

ET-3528x-1F1W

Datasheet



Features :

- High luminous Intensity and high efficiency
- 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 and Outdoor Displays
- Backlighting (illuminated advertising, general lighting)
- Interior Automotive Lighting



Lighting Design Manufacturing Service

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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 backlight for LCD display and portable computers.

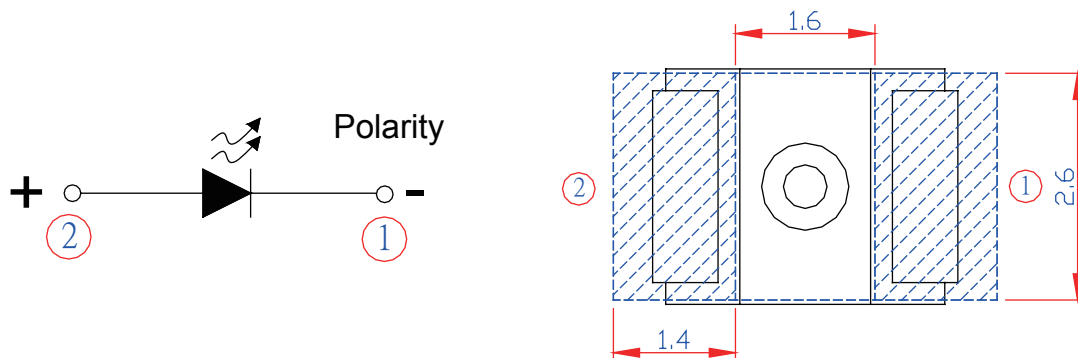
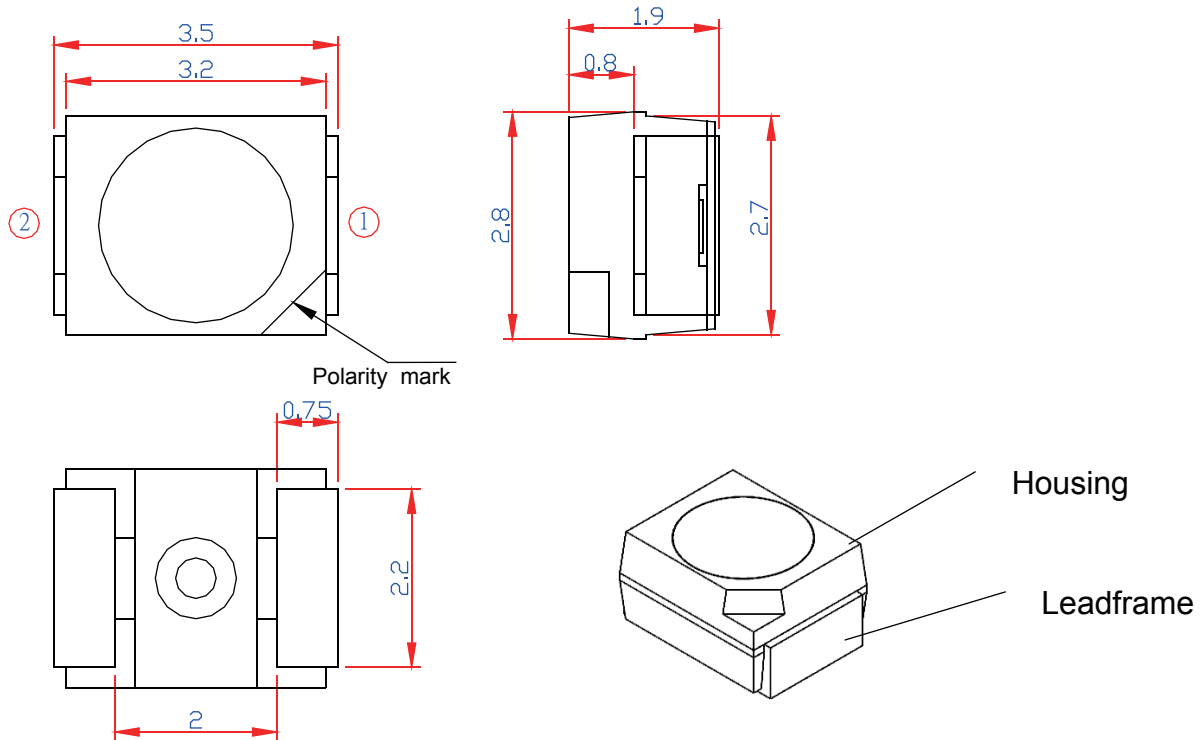
Product Nomenclature

The following table describes the available color, power, and lens type. For more flux and forward voltage information, please consult the Bin Group document.

Table 1. PLCC 3528 series Nomenclature

ET		3528		W	-	1	F	1	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	--	--
				H	Neutral White				
				X	Warm White				
X7 Feature									
Code	Type								
W	White surface								

Mechanical Dimensions



Notes:

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

Absolute Maximum Ratings

The following table describe absolute maximum ratings of PLCC 3528 series.

Table 2. Absolute maximum ratings for PLCC 3528 series

Parameter	Rating	Units	Symbol
Forward Current	30	mA	I_F
Pulse Forward Current ($t_p \leq 100\mu s$, Duty cycle=0.25)	100	mA	-
Reverse Current ($V_R=5V$)	2	mA	I_R
Forward Voltage	3.8	V	V_F
LED Junction Temperature	125	$^{\circ}C$	T_J
Operating Temperature	-40 ~ +100	$^{\circ}C$	-
Storage Temperature	-40 ~ +125	$^{\circ}C$	-
Soldering Temperature	255~260	$^{\circ}C$	-
Manual Soldering at 350 $^{\circ}C$ (Max.)	3	Sec	-

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.
3. t_p : Pulse width time

Luminous Intensity Characteristic

The following table describes luminous intensity of PLCC 3528 series.

Table 3 . Luminous Flux characteristics at $I_f=20\text{mA}$ and $T_a=25^\circ\text{C}$ for PLCC 3528 series

Part Name	Color	Luminous Flux (lm)			Luminous Intensity Typ.(mcd)	Forward Current (mA)
		Group	Min.	Max.		
ET-3528W-1F1W	Cool White	L23	6.44	6.72	2,600	20
		L24	6.72	7.00		
		L25	7.00	7.28		
		L26	7.28	7.56		
		L27	7.56	7.84		
		L28	7.84	8.12		
ET-3528H-1F1W	Neutral White	L22	6.16	6.44	2,500	20
		L23	6.44	6.72		
		L24	6.72	7.00		
		L25	7.00	7.28		
		L26	7.28	7.56		
		L27	7.56	7.84		
ET-3528X-1F1W	Warm White	L28	7.84	8.12	2,100	20
		L18	5.04	5.32		
		L19	5.32	5.60		
		L20	5.60	5.88		
		L21	5.88	6.16		
		L22	6.16	6.44		
		L23	6.44	6.72		
		L24	6.72	7.00		
		L25	7.00	7.28		

Note:

Luminous intensity is measured with an accuracy of $\pm 10\%$

Characteristics

Optical Characteristics

The following table describes luminous intensity of PLCC 3528 series.

Table 4 . Optical characteristics at $I_f=20\text{mA}$ and $T_a=25^\circ\text{C}$ for PLCC 3528

Part Name	Color	V_f (V)			CRI	Viewing Angle (Degree)
		Min.	Typ.	Max.		
ET-3528W-1F1W	Cool White	2.8	--	3.8	70	120
ET-3528H-1F1W	Neutral White	2.8	--	3.8	75	120
ET-3528X-1F1W	Warm White	2.8	--	3.8	80	120

Notes:

1. Forward Voltage is measured with an accuracy of $\pm 0.1\text{V}$
2. CRI is measured with an accuracy of ± 5

Electrical Characteristics

Table 5 . Electrical characteristics at $I_f=20\text{mA}$ and $T_a=25^\circ\text{C}$ for PLCC 3528

Part Name	Color	CCT(K)		Forward Current (mA)	Thermal Resistance ($^\circ\text{C/W}$)
		Min.	Max.		
ET-3528W-1F1W	Cool White	5,000	5,600	20	180
ET-3528H-1F1W	Neutral White	3,800	5,000	20	180
ET-3528X-1F1W	Warm White	2,670	3,800	20	180

Note:

Color Temperature is measured with an accuracy of $\pm 5\%$

Characteristic Curve

Beam Pattern Diagram

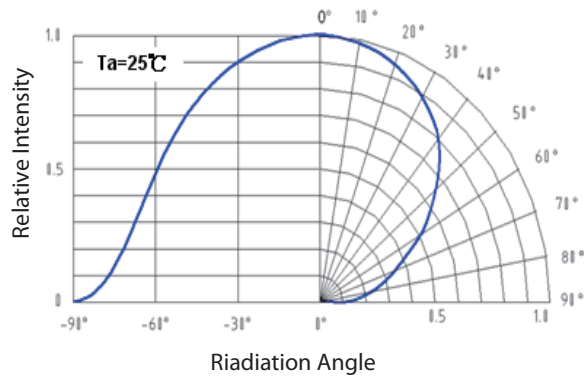


Figure 3. Beam pattern diagram for PLCC 3528 series

Luminous Flux & Wavelength

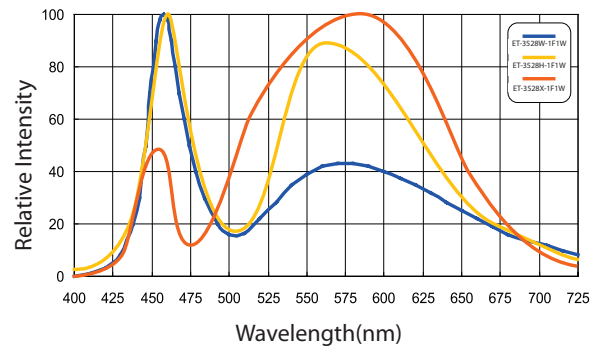


Figure 4. Wavelength & relative intensity for PLCC 3528 series

Luminous Flux & Temperature

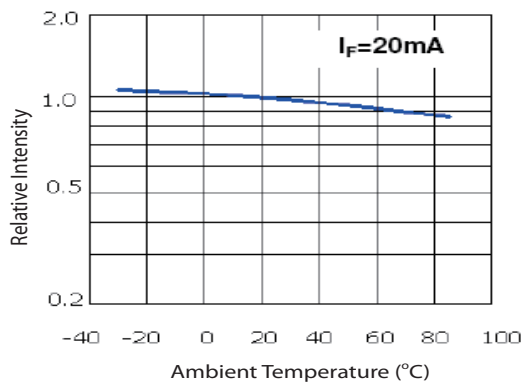


Figure 5. Ambient temperature & relative intensity for PLCC 3528 series

Forward Voltage & Forward Current

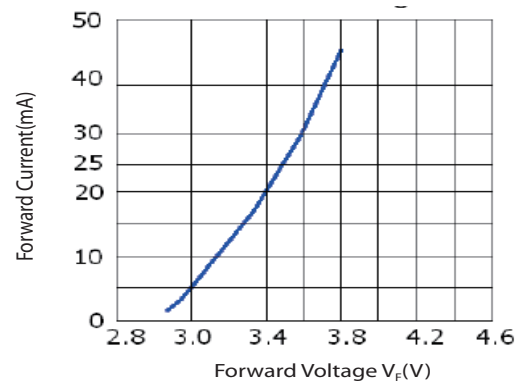


Figure 6. Forward current & forward voltage for PLCC 3528 series

Forward Current & Temperature

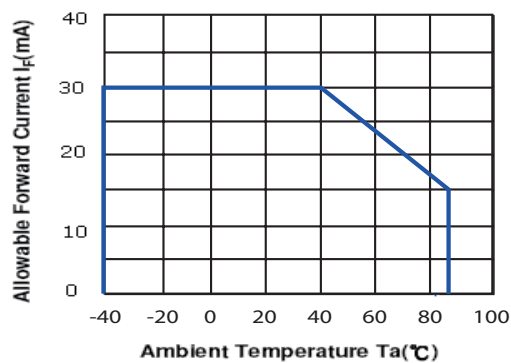


Figure 7. Ambient temperature & forward current for PLCC 3528 series

Luminous Flux & Forward Current

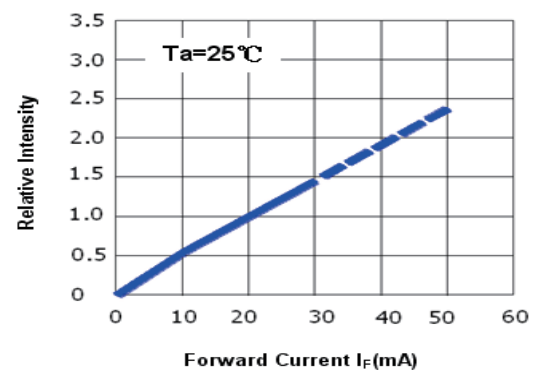


Figure 8. Forward current & relative intensity for PLCC 3528 series

Product Packaging Information

Tapeing Reel

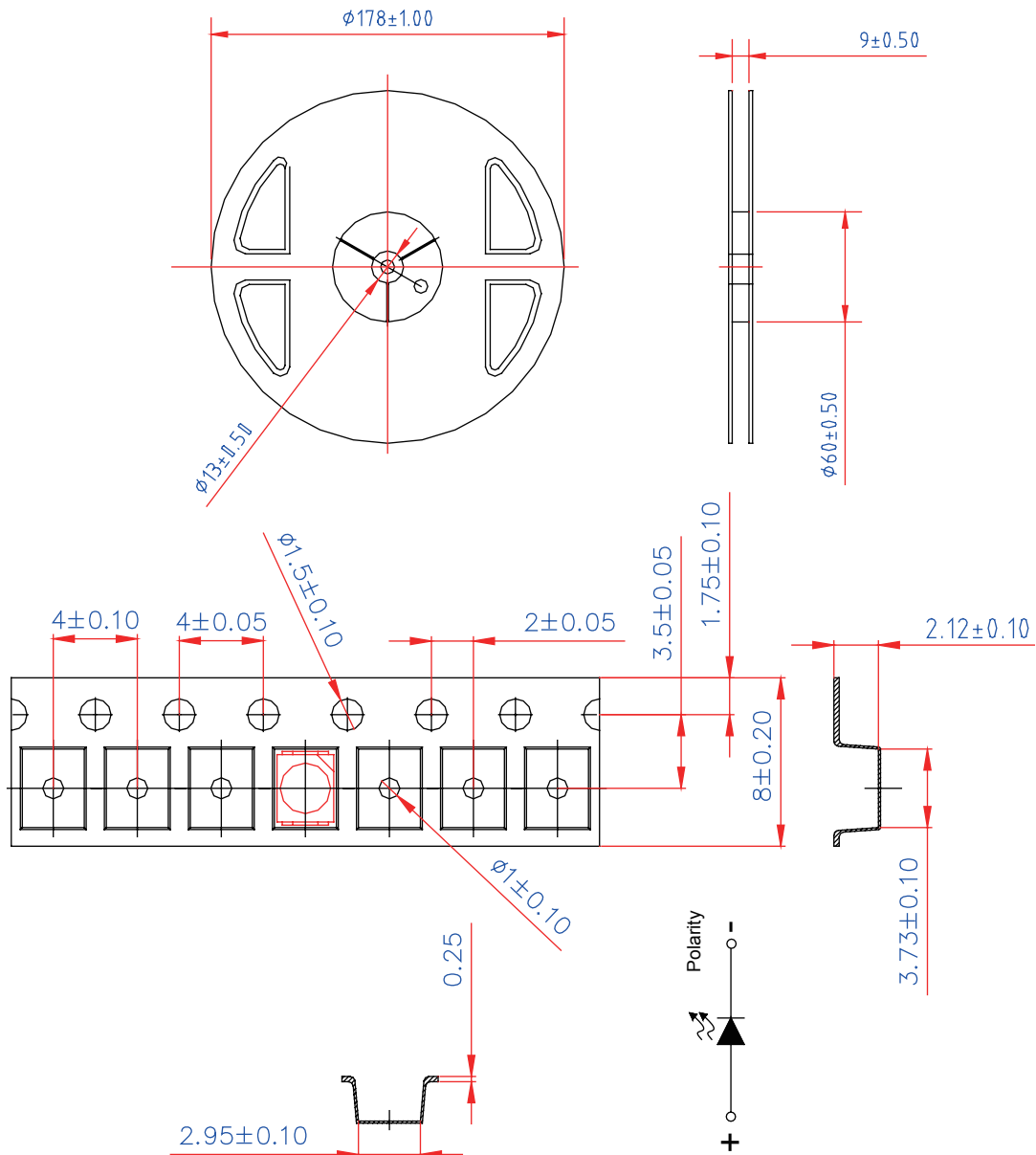


Figure 9. Taping reel dimensions

Packaging

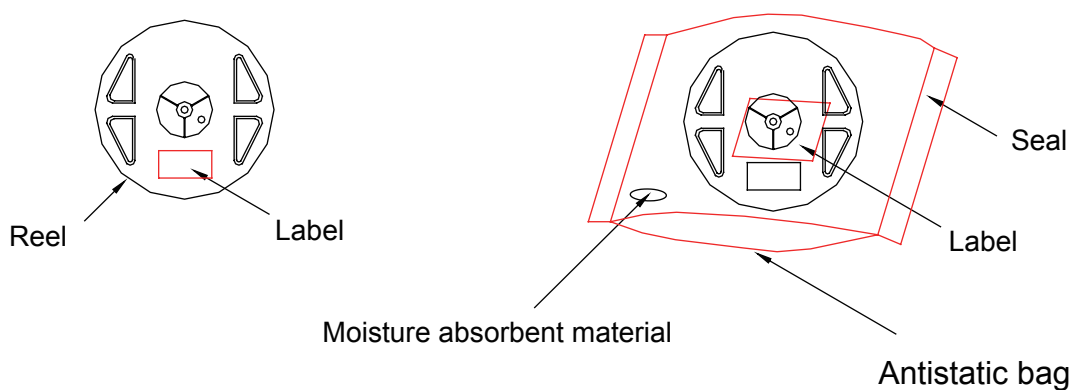


Figure 10. Taping reel dimensions

Package Label


EDISON OPTO CORPORATION
 Customer P/N: XX-XXXXXXXX:XXXXX
 P/N: XX-XXXXX-XXXX

 Group: XX-XX-XX

 Lot No: XXXXXXXX QTY: xxxPCS

 Color: XXXXXXXX QC: _____

RoHS
 Directive Compliance

Figure 11. Package label

Table 6. Package dimensions and quantity

Item	Quantity	Total	Dimensions(mm)
Reel	2,000pcs	2,000pcs	Diameter=178
Box	5 reels	10,000pcs	240*235*67
Carton	5 boxes	50,000pcs	353*254*256

Revision History

Table 7. Revision history of PLCC ET-3528x-1F1W series datasheet

Version	Description	Release Date
5	1. Update the layout of datasheet 2. Update dimensions of emitter 3. Update the luminous intensity with bin group	2011/08/01
6	1. Update the Luminous Intensity Characteristic	2012/10/02

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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