

## T-1 (3mm) SOLID STATE LAMP

Part Number: WP7104VW1C



**ATTENTION** OBSERVE PRECAUTIONS FOR HANDLING **ELECTROSTATIC** DISCHARGE SENSITIVE **DEVICES** 

### **Features**

- Low power consumption.
- Popular T-1 diameter package.
- General purpose leads.
- Reliable and rugged.
- Long life solid state reliability.
- Available on tape and reel.
- RoHS compliant.

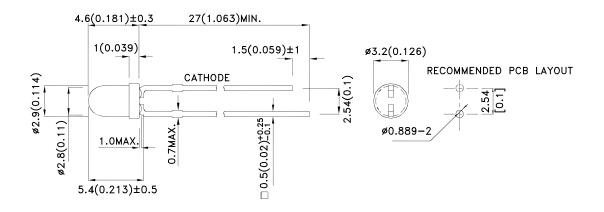
### **Descriptions**

- The source color devices are made with InGaN Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.

White

- It is recommended to use a wrist band or antielectrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

### **Package Dimensions**



- 1. All dimensions are in millimeters (inches).
- 2. Tolerance is ±0.25(0.01") unless otherwise noted.
- 3. Lead spacing is measured where the leads emerge from the package.
  4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

SPEC NO: DSAJ9211 **REV NO: V.6B** DATE: SEP/06/2014 PAGE: 1 OF 7 APPROVED: WYNEC CHECKED: Allen Liu DRAWN: L.Q.Xie ERP: 1101026724







### **Selection Guide**

Part No.	Dice	Lens Type	lv (mcd) [2] @ 20mA		Viewing Angle [1]
		2.	Min.	Тур.	201/2
WP7104VW1C	7104VW1C White (InGaN)		3600	6000	34°

### Notes:

- 1.  $\theta$ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
- 2. Luminous intensity/ luminous Flux: +/-15%.
- 3. Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

### Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Тур.	Max.	Units	Test Conditions
VF [1]	Forward Voltage	White	3.3	4.0	V	IF=20mA
lR	Reverse Current	White		50	uA	V <sub>R</sub> = 5V
X [2]	Characticity Coordinates	White	0.31			
Y [2]	Chromaticity Coordinates		0.31			
С	Capacitance	White	100		pF	VF=0V;f=1MHz

- Notes:

  1. Forward Voltage: +/-0.1V.

  2. Measurement tolerance of the chromaticity coordinates is ±0.02.

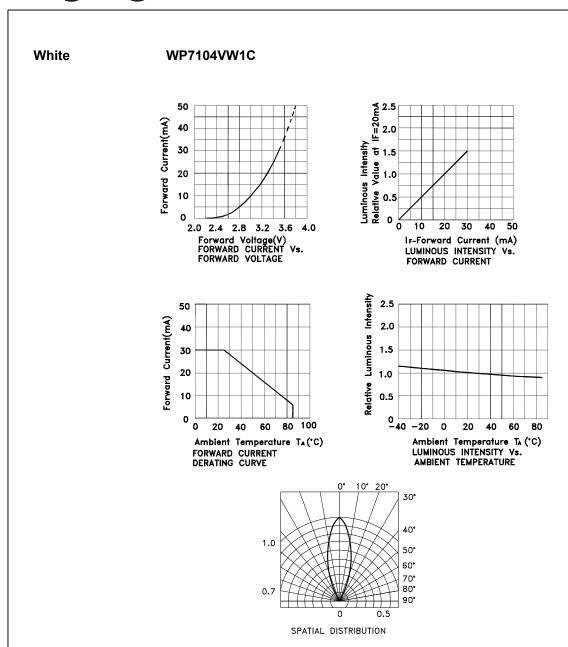
  \*\*Transport and/or operating temperature higher than 3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

### Absolute Maximum Ratings at TA=25°C

Parameter	White	Units		
Power dissipation	120	mW		
DC Forward Current	30	mA		
Peak Forward Current [1]	100	mA		
Reverse Voltage	5	V		
Operating/Storage Temperature	-40°C To +85°C			
Lead Solder Temperature [2]	260°C For 3 Seconds			
Lead Solder Temperature [3]	260°C For 5 Seconds			

- 1. 1/10 Duty Cycle, 0.1ms Pulse Width.
- 2. 2mm below package base.
- 3. 5mm below package base.

SPEC NO: DSAJ9211 **REV NO: V.6B** DATE: SEP/06/2014 PAGE: 2 OF 7 APPROVED: WYNEC **CHECKED: Allen Liu** DRAWN: L.Q.Xie ERP: 1101026724

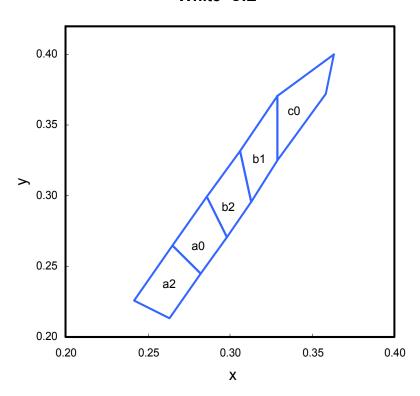


SPEC NO: DSAJ9211 REV NO: V.6B DATE: SEP/06/2014 PAGE: 3 OF 7

APPROVED: WYNEC CHECKED: Allen Liu DRAWN: L.Q.Xie ERP: 1101026724

### WP7104VW1C

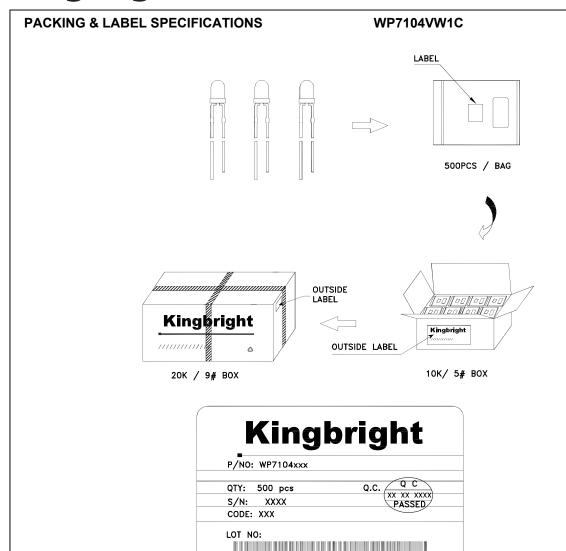




	x	у		x	у		x	у
a2	0.263	0.213	а0	0.282	0.245	b2	0.298	0.271
	0.282	0.245		0.298	0.271		0.313	0.296
	0.265	0.265		0.286	0.299		0.306	0.332
	0.242	0.226		0.265	0.265		0.286	0.299
b1	0.313	0.296	c0	0.329	0.325			
	0.329	0.325		0.358	0.372			
	0.329	0.371		0.363	0.400			
	0.306	0.332		0.329	0.371			

Notes: Shipment may contain more than one chromaticity regions. Orders for single chromaticity region are generally not accepted. Measurement tolerance of the chromaticity coordinates is ±0.02.

DATE: SEP/06/2014 PAGE: 4 OF 7 SPEC NO: DSAJ9211 **REV NO: V.6B** APPROVED: WYNEC **CHECKED: Allen Liu** DRAWN: L.Q.Xie ERP: 1101026724



### Terms and conditions for the usage of this document

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.

**RoHS** Compliant

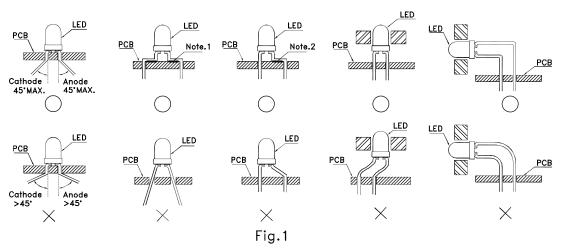
- 2.The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
- 3. When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues.
- 4. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance.
- 5. The contents and information of this document may not be reproduced or re-transmitted without permission by Kingbright.
- 6.All design applications should refer to Kingbright application notes available at <a href="http://www.KingbrightUSA.com/ApplicationNotes">http://www.KingbrightUSA.com/ApplicationNotes</a>

 SPEC NO: DSAJ9211
 REV NO: V.6B
 DATE: SEP/06/2014
 PAGE: 5 OF 7

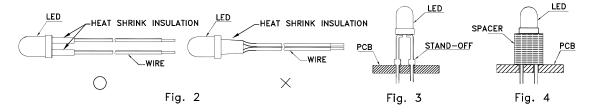
 APPROVED: WYNEC
 CHECKED: Allen Liu
 DRAWN: L.Q.Xie
 ERP: 1101026724

### **PRECAUTIONS**

1. The lead pitch of the LED must match the pitch of the mounting holes on the PCB during component placement. Lead—forming may be required to insure the lead pitch matches the hole pitch. Refer to the figure below for proper lead forming procedures. (Fig. 1)



- "( )" Correct mounting method "imes" Incorrect mounting method
- 2. When soldering wire to the LED, use individual heat—shrink tubing to insulate the exposed leads to prevent accidental contact short—circuit. (Fig.2)
- 3. Use stand—offs (Fig.3) or spacers (Fig.4) to securely position the LED above the PCB.

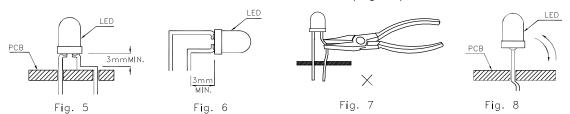


- 4. Maintain a minimum of 3mm clearance between the base of the LED lens and the first lead bend. (Fig. 5 and 6)
- 5. During lead forming, use tools or jigs to hold the leads securely so that the bending force will not be transmitted to the LED lens and its internal structures. Do not perform lead forming once the component has been mounted onto the PCB. (Fig. 7)

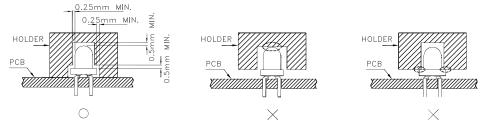
SPEC NO: DSAJ9211
APPROVED: WYNEC

REV NO: V.6B CHECKED: Allen Liu DATE: SEP/06/2014 DRAWN: L.Q.Xie PAGE: 6 OF 7 ERP: 1101026724

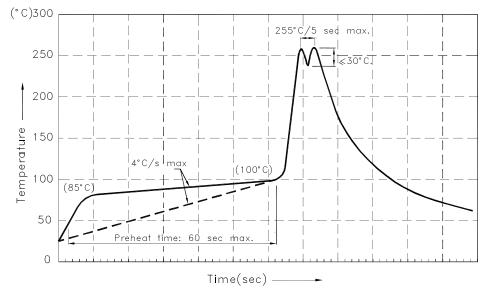
6. Do not bend the leads more than twice. (Fig. 8)



7. During soldering, component covers and holders should leave clearance to avoid placing damaging stress on the LED during soldering.



- 8. The tip of the soldering iron should never touch the lens epoxy.
- 9. Through—hole LEDs are incompatible with reflow soldering.
- 10. If the LED will undergo multiple soldering passes or face other processes where the part may be subjected to intense heat, please check with Kingbright for compatibility.
- 11. Recommended Wave Soldering Profiles:



### Notes:

- 1.Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
- 2.Peak wave soldering temperature between 245°C  $\sim$  255°C for 3 sec (5 sec max).
- $3.\mbox{Do}$  not apply stress to the epoxy resin while the temperature is above  $85^{\circ}\mbox{C}.$
- 4.Fixtures should not incur stress on the component when mounting and during soldering process. 5.SAC 305 solder alloy is recommended.
- 6.No more than one wave soldering pass.

 SPEC NO: DSAJ9211
 REV NO: V.6B
 DATE: SEP/06/2014
 PAGE: 7 OF 7

 APPROVED: WYNEC
 CHECKED: Allen Liu
 DRAWN: L.Q.Xie
 ERP: 1101026724