



## TOYO LED ELECTRONICS LIMITED

Room 1610, Hong Kong Plaza, 188 Connaught Road West, Hong Kong.

Tel : (852) 2540 7288  
http://www.toyo-led.com

Fax : (852) 2517 1797  
E-mail : sales@toyo-led.com



**P/N: TY-3528UR1-600**

3.5 \* 2.8mm TOP SMD Series

# SPECIFICATION FOR CUSTOMER APPROVAL

**P/N:TY-3528UR1-600**

DATE : December 18, 2015

PREPARED BY : Chen Li fen

CONFIRMED BY : Yan guo liang

**PLEASE CONFIRM & SIGN BACK THIS SHEET TO US**

**CUSTOMER:** \_\_\_\_\_

**APPROVAL BY:** \_\_\_\_\_

(COMPANY CHOP)

(SIGNATURE)



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### ◆ Features:

- 3.5mm×2.8mm SMT LED , 1.90mm thickness
- PLCC-2 package
- White package
- Suitable for all SMT assembly and solder process
- Available on tape and reel



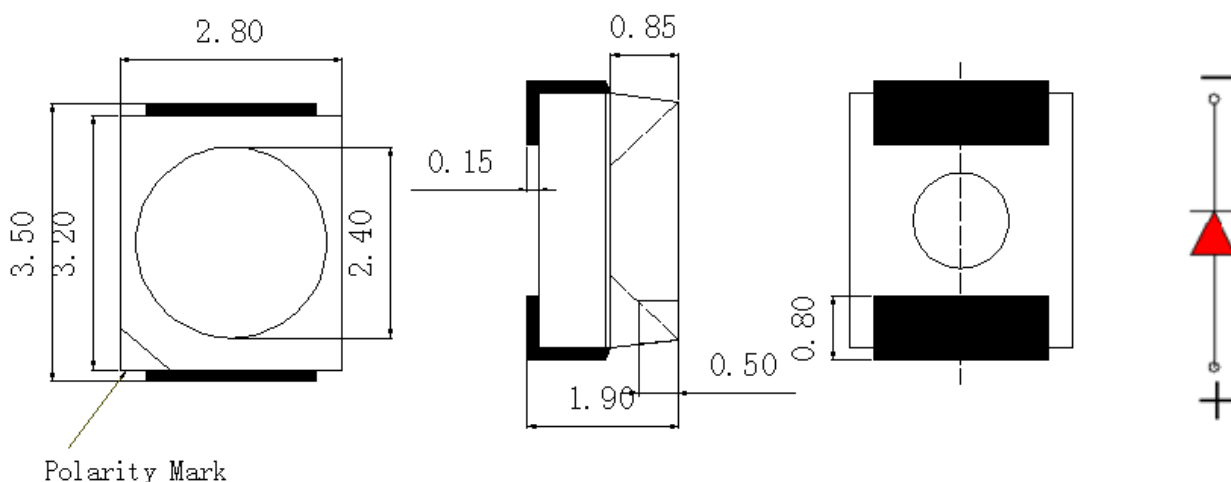
### ◆ Description

The Red source color devices are made with AlGaInP on sapphire Light Emitting Diode.

### ◆ Application

- Optical indicator
- Indicator and backlighting in telephone and fax
- Flat backlight for LCD,switch and symbol
- Light pipe application
- General use

### ◆ Package Dimensions



### NOTES :

1. All dimensions are in millimeter;
2. Tolerance is  $\pm 0.2$ mm unless other specified;
3. Specifications are subject to change without notice.



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Part No.	Emitted Color	Len's Color	Chip Material
TY-3528UR1-600	Red	Water clear	AlGaInP

### ✧ Absolute Maximum Ratings(Ta=25 )

Item	Symbol	Maximum	Unit
Power Dissipation	PD	60	mW
Continuous Forward Current	I <sub>Fmax</sub>	30	mA
Peak Forward Current(1/10 Duty Cycle 0.1ms Pulse Width)	I <sub>FP</sub>	150	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	T <sub>opr</sub>	-40 to+85	
Storage Temperature Range	T <sub>stg</sub>	-40 to+85	

### ✧ Electrical/Optical Characteristics(Ta=25 )

Item	Symbol	Condition	Min.	Typ.	Max	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	1.8	2.1	2.4	V
Luminous Intensity	I <sub>V</sub>	I <sub>F</sub> =20mA	300	600	---	mcd
Wavelength	λ	I <sub>F</sub> =20mA	620	625	635	nm
Viewing Angle	2θ <sub>1/2</sub>	I <sub>F</sub> =20mA	--	120	--	Deg
Capacitance	C	V <sub>F</sub> =0V, f=1MHZ	--	110	--	pF
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	--	5	10	uA



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## ◇ Typical Electro-Optical Characteristics Curves

FIG. 1 Forward Current Vs. Forward Voltage

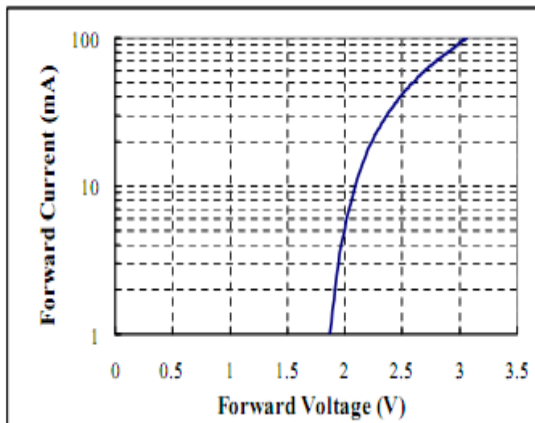


FIG. 2 Relative Intensity Vs. Forward Current

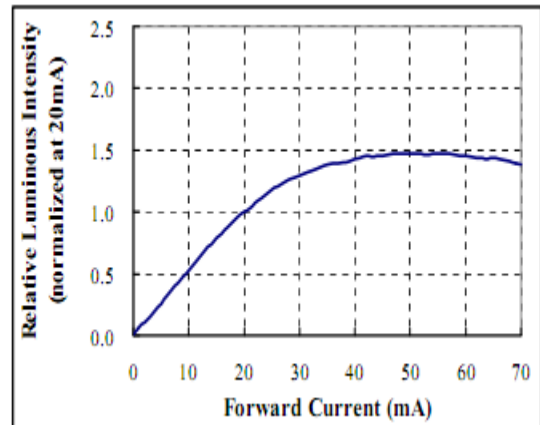


FIG. 3 Forward Voltage Vs. Temperature

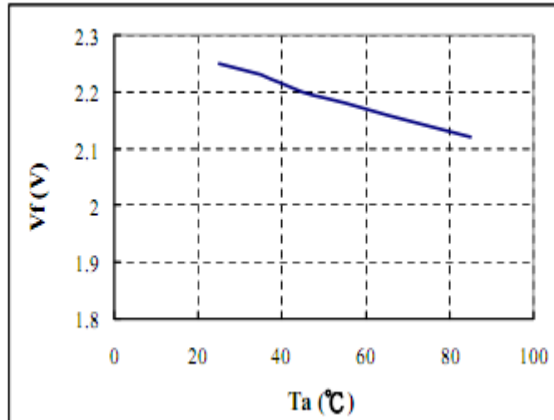


FIG. 4 Relative Intensity Vs. Temperature

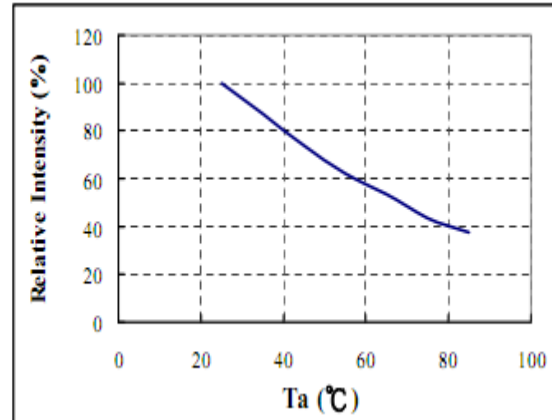
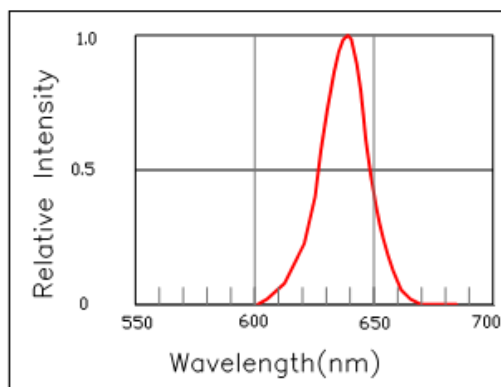


FIG. 5 Relative Intensity Vs. Wavelength





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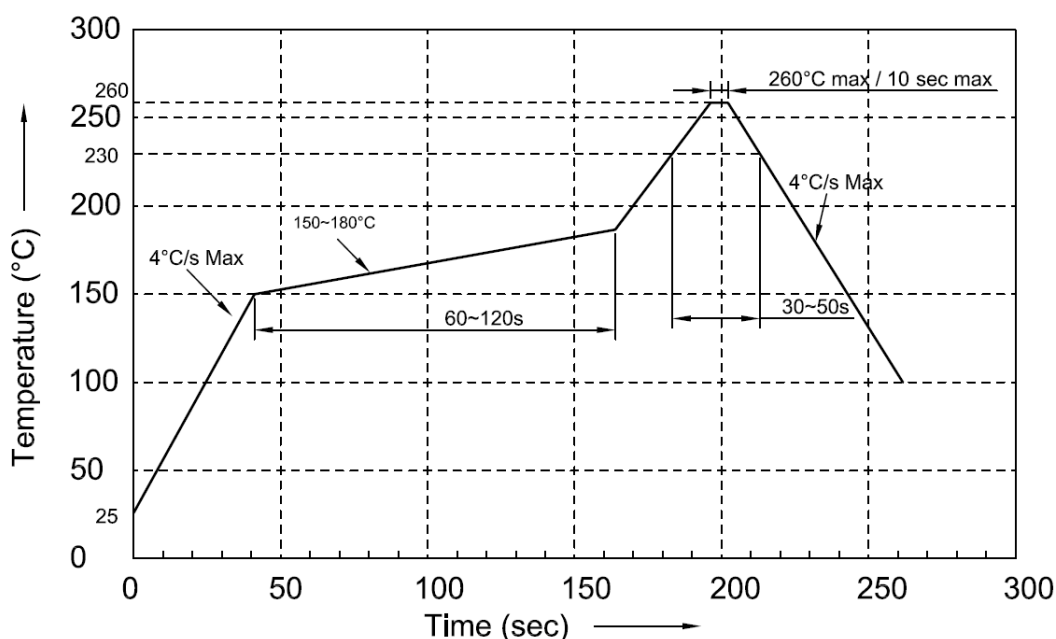
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### ◇ Reliability Test Items And Conditions

NO.	Item	Test Condition	Test Hr/cycle/time	Sample Q'ty	Ac/Re
1	Reflow	TEMP:260±5 ; Min.5Sec	6 min	22pcs	0/1
2	High Temperature Storage	TEMP: 85	1000hrs	22pcs	0/1
3	Low Temperature Storage	TEMP:-40	1000hrs	22pcs	0/1
4	DC Operating Life	IF=20MA	1000hrs	22pcs	0/1
5	High Humidity	85%R.H.	1000hrs	22pcs	0/1

### ◇ SMT Reflow Soldering Instructions



Notes:

1. We recommend the reflow temperature 245±5 .The maximum soldering temperature should be limited to 260 for 10s (max).
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.



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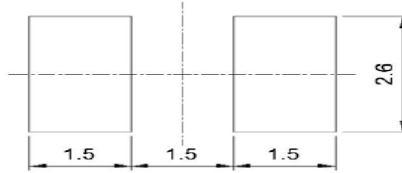
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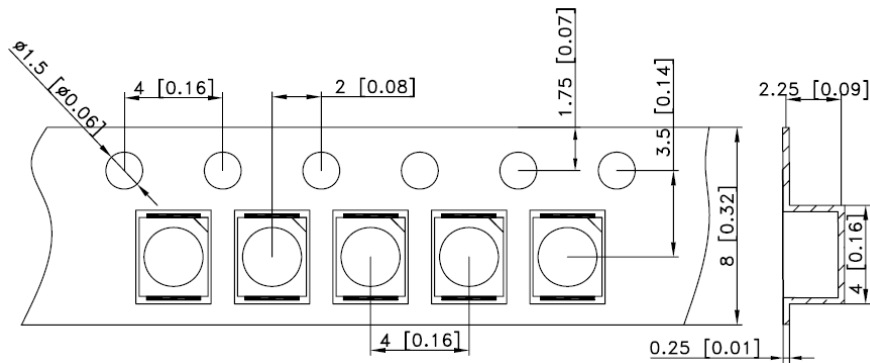
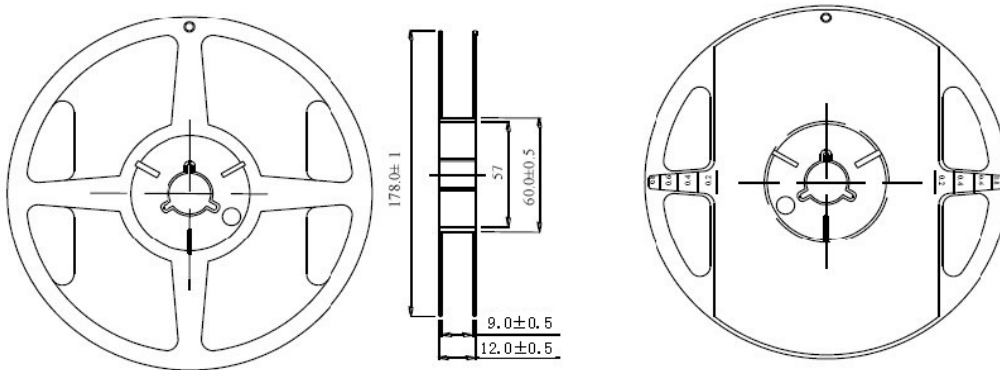
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### ❖ Recommended Soldering Pad Dimensions



### ❖ Tape Specification: 2,000PCS per reel



### ❖ Package Label

<b>SMD LED</b>	
PART NO: _____	QA Pass
LOT NO : _____	
Q' TY : _____	
VF : _____ IV : _____	
WL : _____ BIN: _____	Pb
DATA : _____	
<b>TOYO LED ELECTRONICS LIMITED</b> Website: <a href="http://www.toyo-led.com">http://www.toyo-led.com</a> E-mail: <a href="mailto:sales@toyo-led.com">sales@toyo-led.com</a>	



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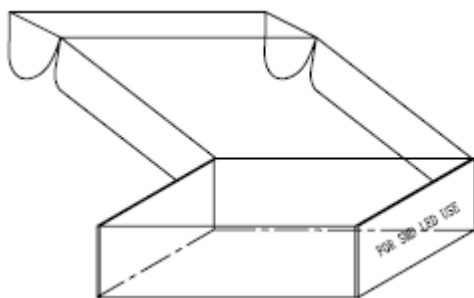
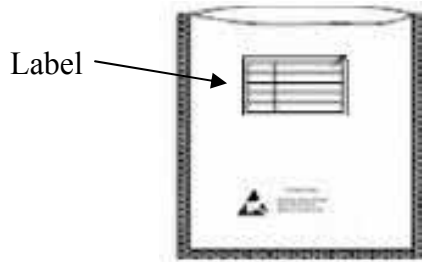
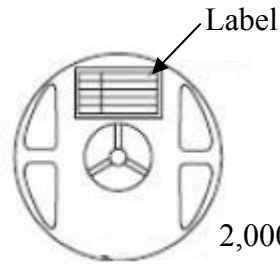
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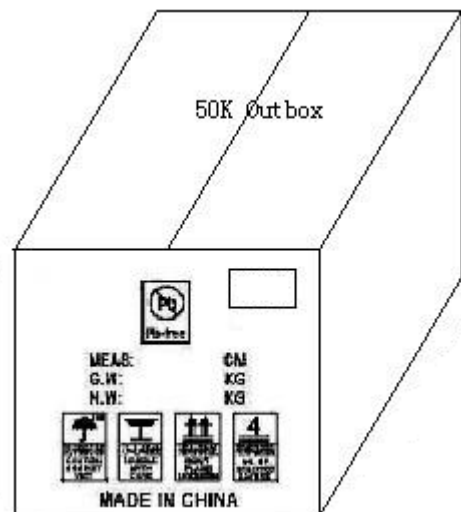
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## ❖ Package & Shipping Instructions



5Reels/Inner Box (10KPCS)  
Size : 250\*220\*68(mm)



5 Inner boxes/Outer Box (50KPCS)  
Size : 350\*260\*230(mm)