



# TOYO LED ELECTRONICS LIMITED

Unit 10-11, 19/F, Metro Loft, 38 Kwai Hei Street, Kwai Chung, N.T., Hong Kong  
Tel : (852) 2540 7288 Fax : (852) 2517 1797  
http://www.toyo-led.com E-mail : sales@toyo-led.com



## P/N:TY-L3020PW1(1.3)

3020Package3.0\*2.0mm TOP SMD Series

### ✧ Features:

- 3.0\*2.0\*1.3mm
- Mono-color type
- Soldering methods :All SMT assembly methods
- Comply ROHS standard



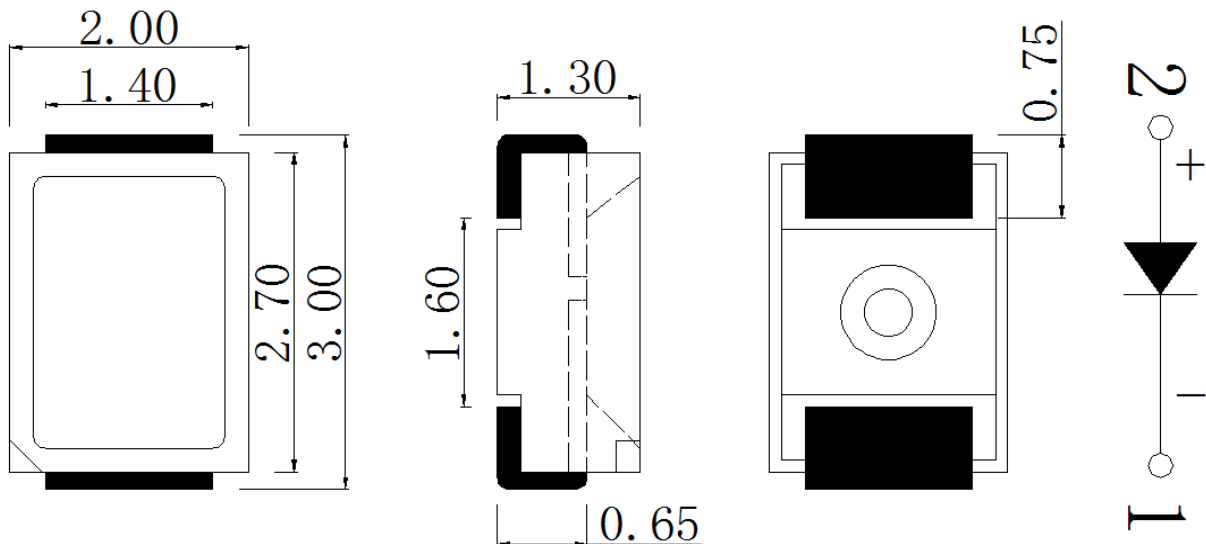
### ✧ Description

The White source color devices are made with InGaN on sapphireLight 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[unit];
2. Tolerance is  $\pm 0.1\text{mm}(0.004")$  unless other specified;
3. Specifications are subject to change without notice.



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Part No.	Emitted Color	Lens Color	Chip Material
TY-L3020PW1(1.3)	White	Yellow	InGaN

### ◇ Absolute Maximum Ratings(Ta=25°C)

Item	Symbol	Maximum	Unit
Power Dissipation	PD	100	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>	100	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	T <sub>opr</sub>	-35 to+85	°C
Storage Temperature Range	T <sub>stg</sub>	-40 to+100	°C
Lead Solder Temperature	T <sub>sol</sub>	Reflow Soldering : 260 °C for 5 sec. Hand Soldering : 350 °C for 3 sec.	

### ◇ Electrical/Optical Characteristics(Ta=25°C)

Item	Symbol	Condition	Min.	Typ.	Max	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	2.8	3.2	---	V
Luminous Intensity	I <sub>V</sub>	I <sub>F</sub> =20mA	950	1800	--	mcd
Chromaticity Coordinates	X	I <sub>F</sub> =20mA	--	0.31	--	--
	Y		--	0.30	--	--
Viewing Angle	2θ <sub>1/2</sub>	I <sub>F</sub> =20mA	---	120	---	Deg
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	---	---	10	uA



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### ◇ Typical Electro-Optical Characteristics Curves

FIG. 1 Forward Current Vs. Forward Voltage

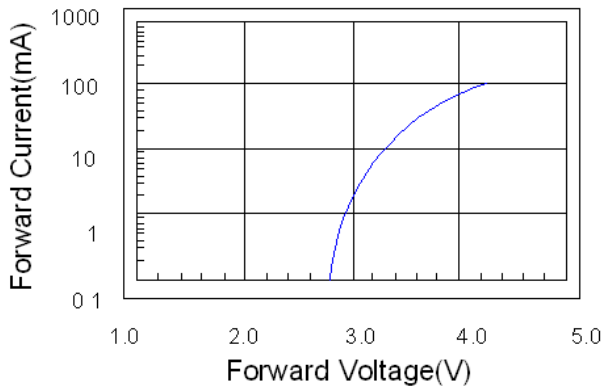


FIG. 2 Relative Intensity Vs. Forward Current

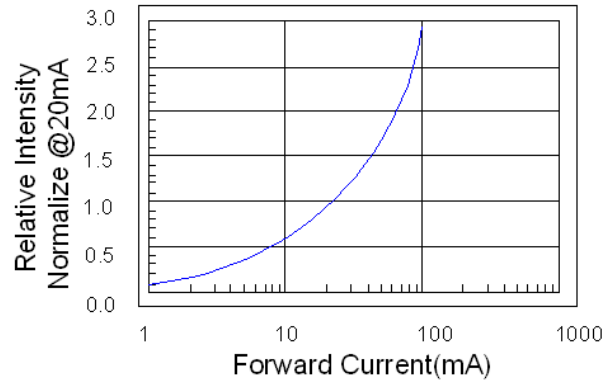


FIG. 3 Forward Voltage Vs. Temperature

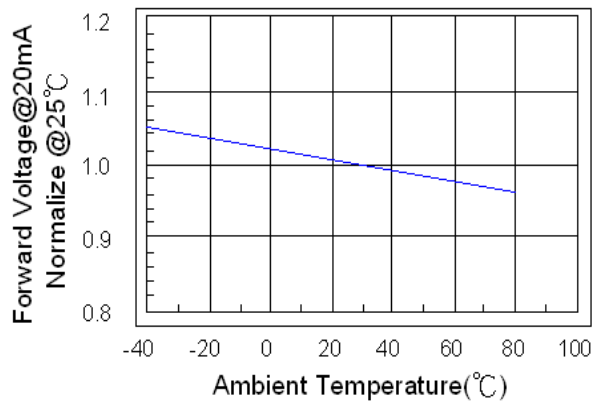


FIG. 4 Relative Intensity Vs. Temperature

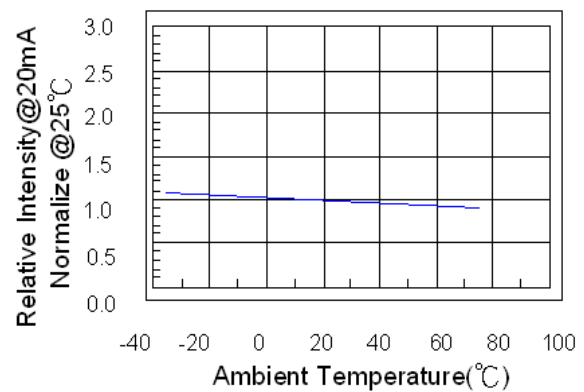
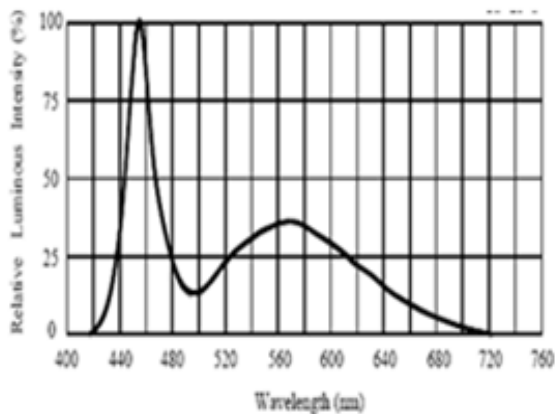


FIG. 5 Relative Intensity Vs. Wavelength





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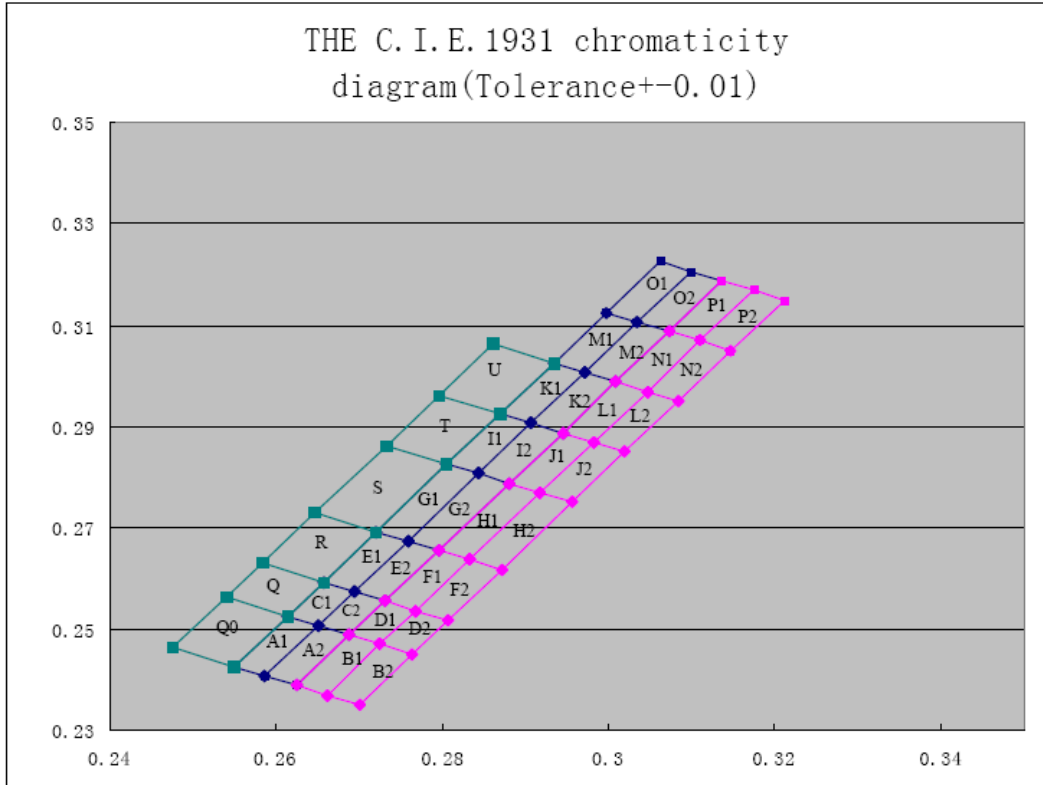
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Chromaticity Coordinates:



K1	0.287	0.2925	L1	0.2983	0.2869
	0.2934	0.3025		0.2945	0.2888
	0.2972	0.3007		0.3009	0.2988
	0.2908	0.2907		0.3047	0.2969
K2	0.2908	0.29065	L2	0.2983	0.2869
	0.2972	0.3007		0.3047	0.2969
	0.3009	0.2988		0.3084	0.295
	0.2945	0.2888		0.302	0.285
M1	0.2934	0.3025	N1	0.3009	0.2988
	0.2998	0.3125		0.3073	0.3088
	0.3036	0.3107		0.3111	0.3069
	0.2972	0.3007		0.3047	0.2969
M2	0.2972	0.3007	N2	0.3047	0.2969
	0.3036	0.3107		0.3111	0.3069
	0.3073	0.3088		0.3148	0.305
	0.3009	0.2988		0.3084	0.295
O1	0.2998	0.3125	P1	0.3073	0.3088
	0.3062	0.3225		0.3137	0.3188
	0.31	0.3207		0.3175	0.3169
	0.3036	0.3107		0.3111	0.3069
O2	0.3036	0.3107	P2	0.3111	0.3069
	0.31	0.3207		0.3175	0.3169
	0.3137	0.3188		0.3212	0.315
	0.3073	0.3088		0.3148	0.305



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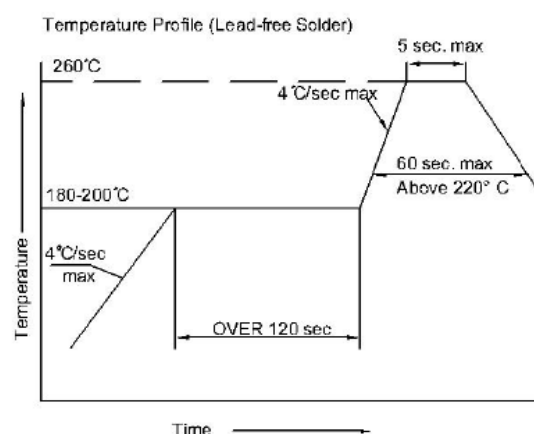
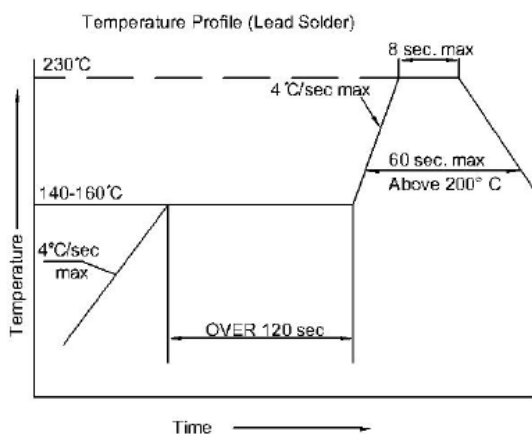
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## ◇ Reliability Test Items And Conditions

NO.	Item	Test Condition	Test Hr/cycle/time	Sample Q'ty	Ac/Re
1	Reflow	TEMP:260±5°C; Min.5Sec	6 min	22pcs	0/1
2	Temperature Cycle	H:+100°C 30mins To(5mins) L:-40°C 30mins	100cycles	22pcs	0/1
3	Thermal Shock	H:+100°C 15mins L:-40°C 15mins	500 cycles	22pcs	0/1
4	Low Temperature Storage	TEMP:-40°C	1000hrs	22pcs	0/1
5	DC Operating Life	IF=20MA	1000hrs	22pcs	0/1
6	High Temperature High Humidity	85°C 85%R.H.	1000hrs	22pcs	0/1

## ◇ SMT Reflow Soldering Instructions

Number of reflow process shall be than 2 times and cooling  
 Process to normal temperature is required between first and second  
 soldering process





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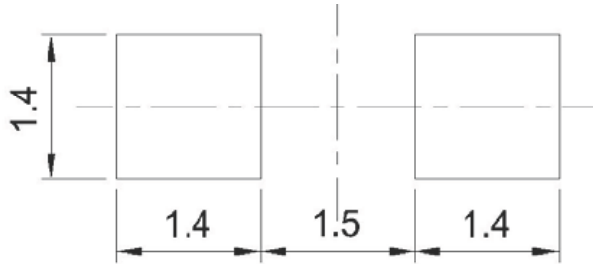
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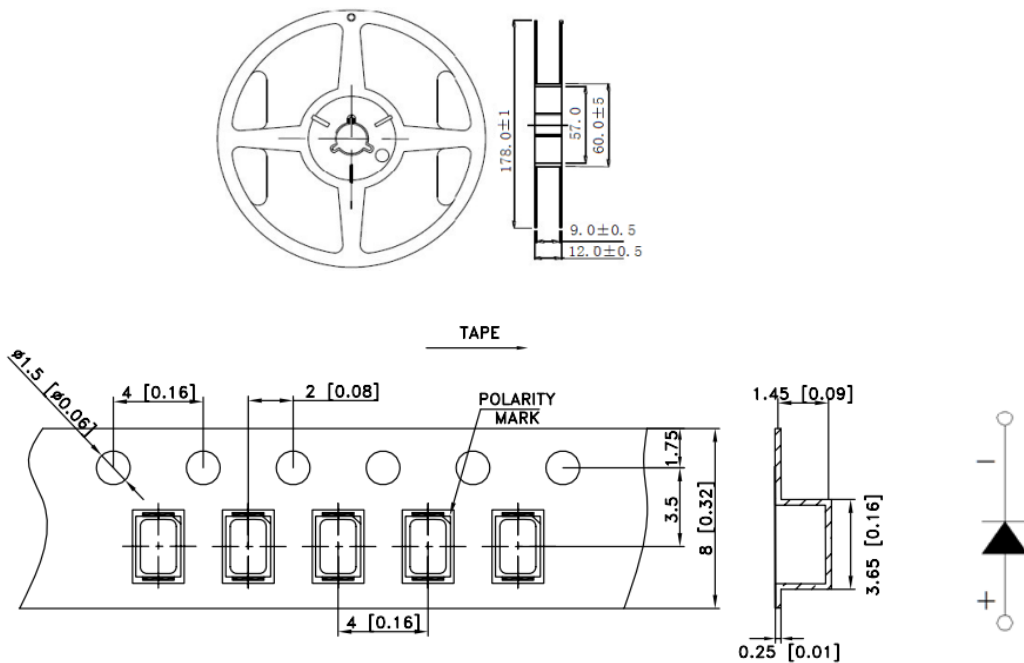
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### Recommended Soldering Pad Dimensions



### Tape Specification:3,000pcs/Reel



### Package Label

<b>SMD LED</b>	
PART NO: _____	QA Pass
LOT NO : _____	
Q' TY : _____	
VF : _____ IV : _____	
TC : _____ BIN: _____	Pb
DATE : _____	
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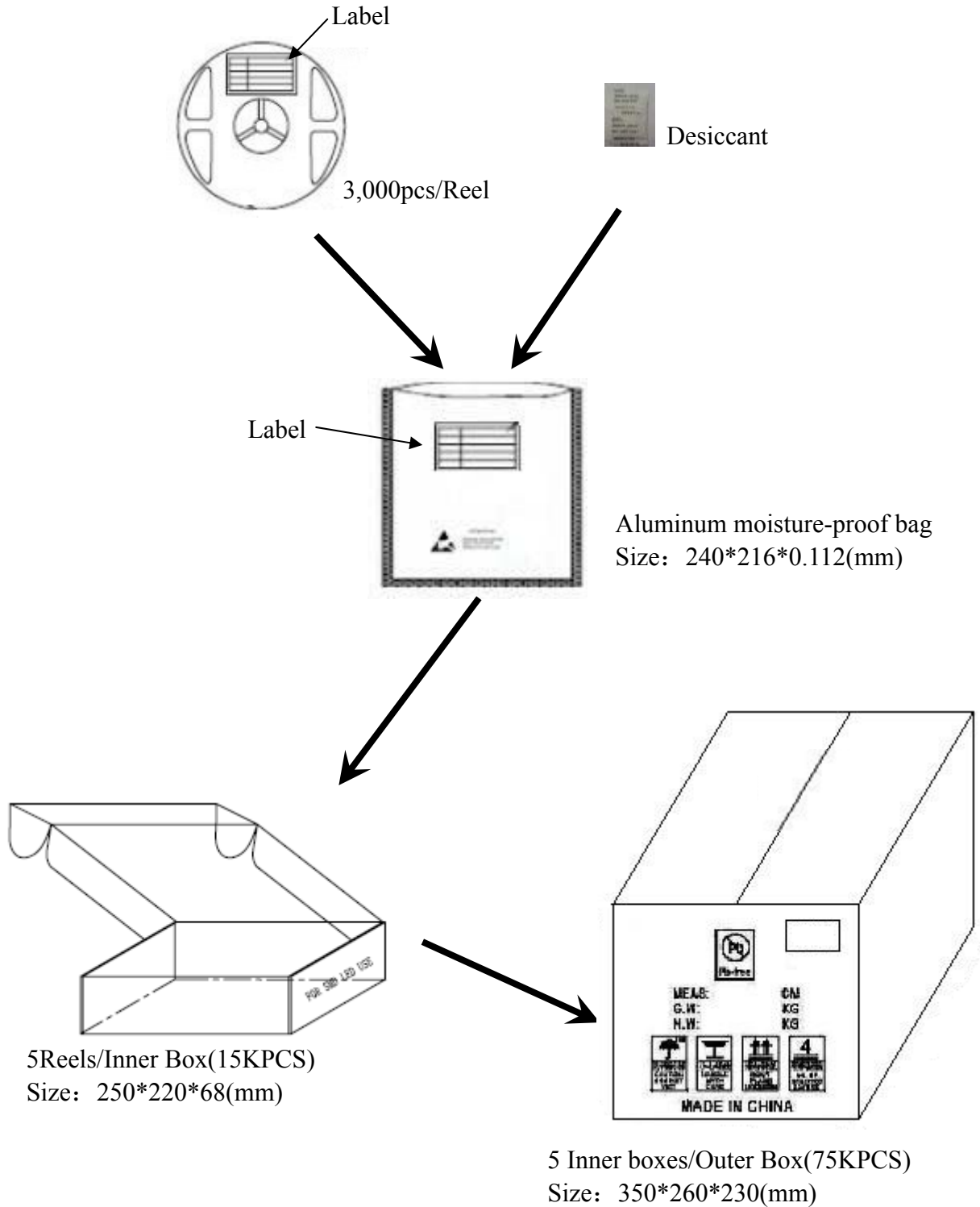
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## ❖ Package & Shipping Instructions





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## REVISION HISTORY

DATE	REVISION CONTENTS	VERSION
2018-08-24	New	A