

**Surface Mounted Chip LED**
**Model No. : CL-SP155UHRUYG**
**■ Features :**

- Compatible with automatic placement equipment
- Compatible with reflow solder process

**■ Applications :**

- Automotive\_Telecommunication
- Indicators
- LCD Back-lights
- Illuminations

**Absolute Maximum Ratings**
**( Ta=25°C )**

Item	Symbol	Maximum	Unit
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
Derating Linear From 25°C		0.4	mA/°C
Operating Temperature Range	Topr	-30 to +80	°C
Storage Temperature Range	Tstg	-40 to +85	°C

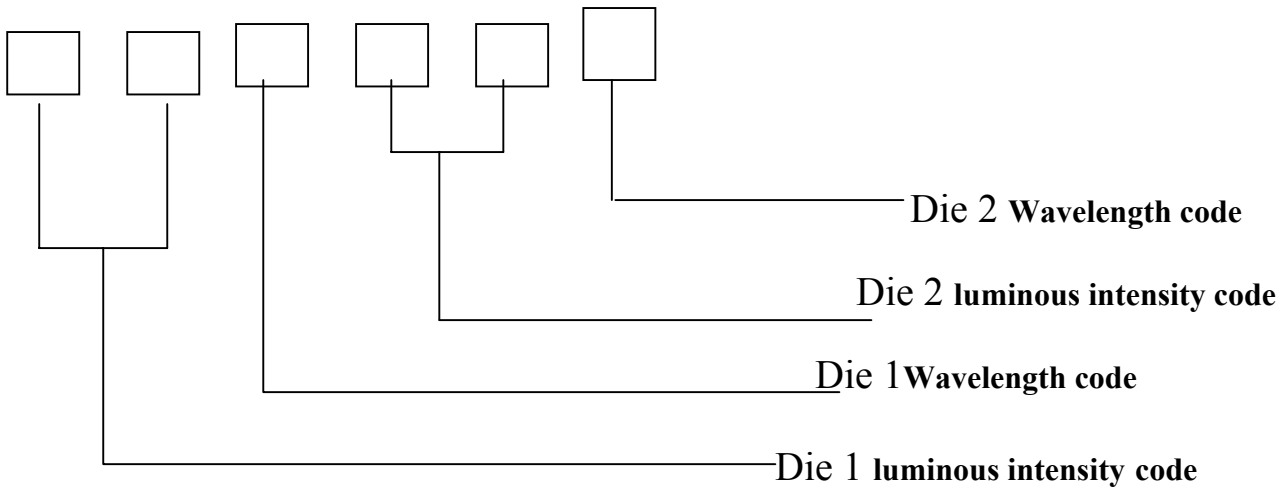
**Electrical / Optical Characteristics**
**( Ta=25°C )**

Chip			Lens Appearance	Absolute Maximum Rating			Electro-optical Data (At 20mA)				Viewing Angle 2θ 1/2 (deg)
Emitted Color	λ <sub>P</sub> (nm)	λ <sub>D</sub> (nm)		Δλ (nm)	Pd (mW)	If (mA)	Vf(V)		Iv(mcd)		
	Typ.	Max.					Min.	Typ.			
Ultra High Red	645	631	Water Clear	15	78	30	2.1	2.6	90	108	130°
Ultra Yellow Green	575	574		20	78	30	2.1	2.6	40	68	

ISSUE	DIMENSION NO :	VERSION :	DATE :
		A	2007/10/25
	APPROVAL :	CHECK :	EDIT :

◆ Packing coding principle

Notice: Bin code: luminous intensity / wavelength.



◆ The Luminous Intensity Grade of Ultra High Red Chip-LED Products

● Test Condition : @ 20mA

Part No.	Luminous Intensity (I <sub>v</sub> )		
	Typ.,mcd	Range,mcd	Bin code
UHR	108	90/108	K2
		108/130	L1
		130/156	L2

Dominant Wavelength Grade of Ultra High Red Chip-LED Products

● I type @ 20mA

BIN	Range
1	623/640

◆ The Luminous Intensity Grade of Ultra Yellow Green Chip-LED Products

● Test Condition : @ 20mA

Range,mcd	Bin code
40/48	H2
48/57	J1
57/68	J2
68/81	K1
81/97	K2

Dominant Wavelength Grade of Ultra Yellow Green Chip-LED Products

● I type @ 20mA

BIN	Range
1	570/572
2	572/574
3	574/576

◆ **Descriptions :**

- The Chip-LED Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature application, etc.

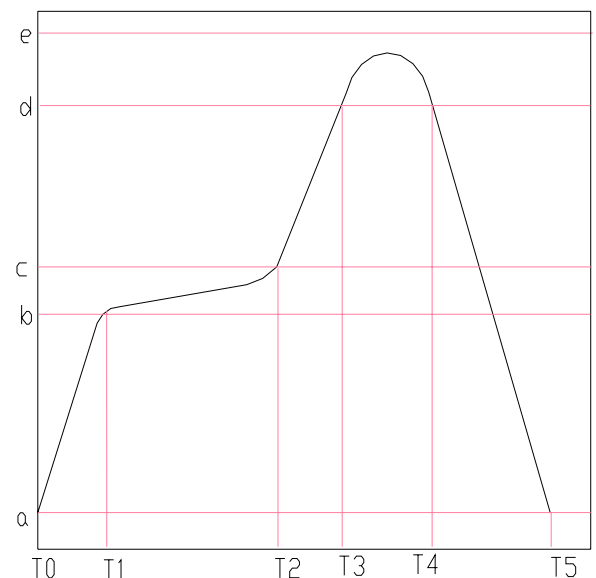
◆ **Reliability Test Items And Conditions :**

NO.	Item	Test Conditions	Test Hours / Cycle	Sample Q'ty	Ac / Re
1	Solder Heat	TEMP : 260°C±5°C	5 sec	36 pcs	0 / 1
2	Temperature Cycle	H : +100°C 30min. ∫ 5min. L : -40°C 30min.	50 cycle	36 pcs	0 / 1
3	Thermal Shock	H : +100°C 5min. ∫ 10sec L : -40°C 5min.	50 cycle	36 pcs	0 / 1
4	High Temperature Storage	TEMP : 100°C	1000 hrs	36 pcs	0 / 1
5	Low Temperature Storage	TEMP : -40°C	1000 hrs	36 pcs	0 / 1
6	DC Operating Life	I <sub>F</sub> = 20mA	1000 hrs	36 pcs	0 / 1
7	High Temperature / High Humidity	85°C / 90~95%R.H.	1000 hrs	36 pcs	0 / 1

◆ **Reflow Temp. / Time : :**

Please refer to the following figure :

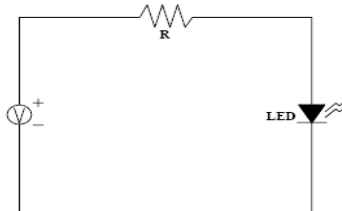
Temp.(°C)		Time(Sec)	
a	25	T0~T1	Max. 3°C/sec
b	150	T1~T2	90~130 sec
c	200	T2~T3	Max. 3°C/sec
d	220	T3~T4	Max. 30~50 sec
e	250		
		T4~T5	Max. -3°C/sec
Blet Speed		70~90 cm/min	



◆ **Precautions For Use :**

- Over - current - proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change ( Burn out will happen )



- Storage

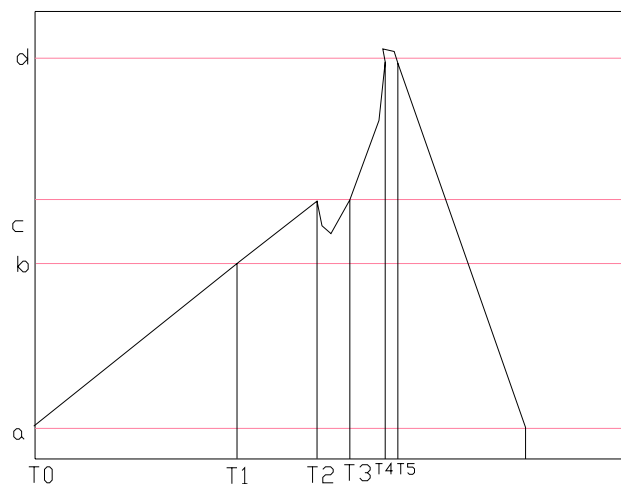
1. The operation of temperature and R.H. are :  $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$  , R.H.60% Max..
2. Once the package is opened, the products should be used within 72 hrs. Otherwise, they should be kept in a dampproof box with desiccating reagent. Considering the tape life, we suggest our customers to use our products within 1 year ( from production date ) .
3. It's recommended to bake before soldering when the package is unsealed after 72 hrs. The condition is :  $80^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for 24hrs.

◆ **Soldering Iron :**

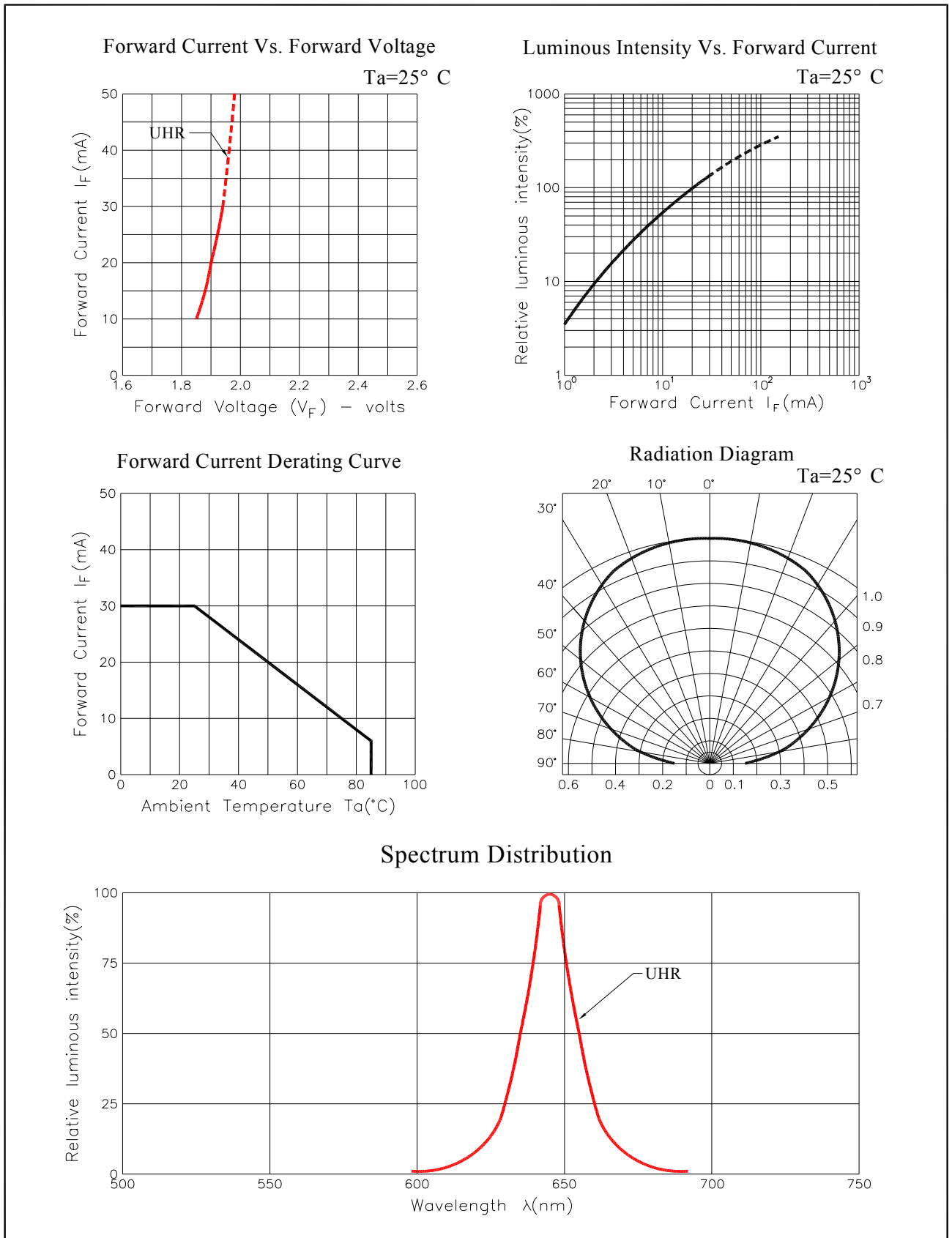
- Temperature at tip of iron :  $300^{\circ}\text{C}$  Max. ( 25W Max. )
- Soldering time :  $5 \pm 1\text{sec}$ .

◆ **Wave Soldering Temp. / Time :**

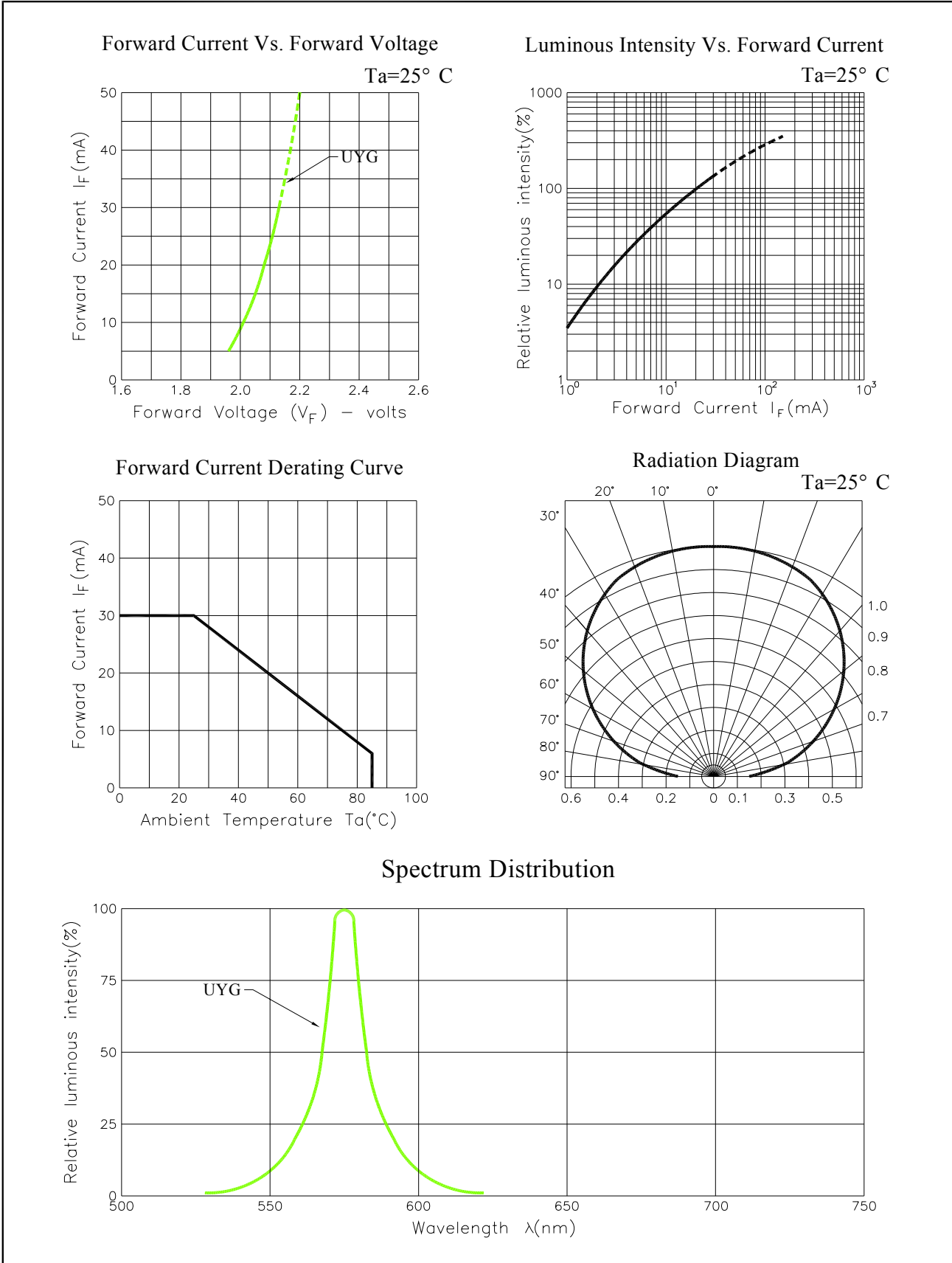
Temp.( $^{\circ}\text{C}$ )		Time(Sec)	
a	25	T1~T2	$60 \pm 20$
b	$130 \pm 10$	T2~T3	
c	185	T3~T6	
d	$250 \pm 3$	T4~T5	$3 \pm 2$



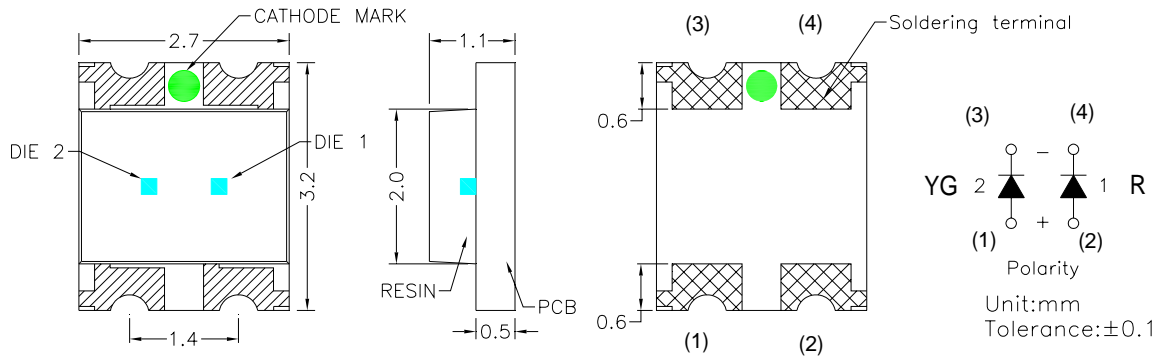
## ◆ Typical Electro-Optical Characteristic Curves:



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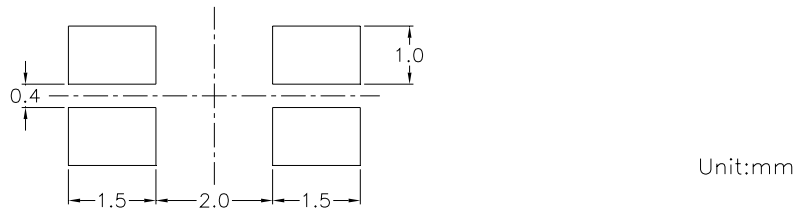


◆ Package Dimensions of Device



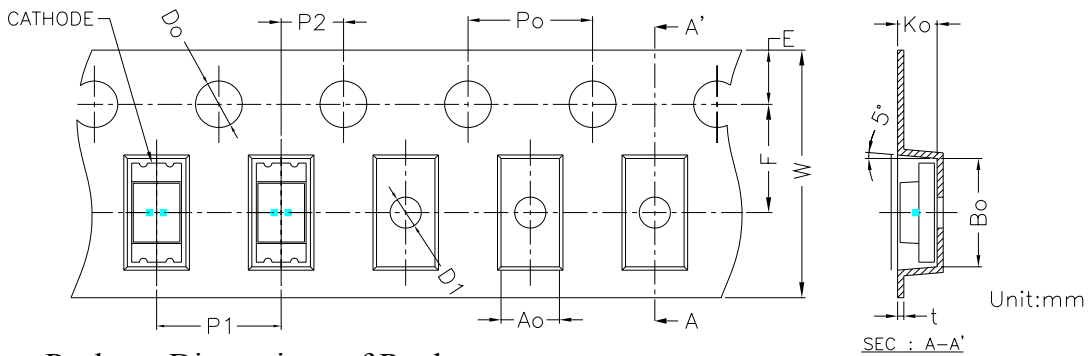
1. Soldering terminal may shift in x, y direction.
2. Polarity referring onto the cathode mark is reversed on the URUR/HRHR/SRSR

◆ Recommended Soldering Pad Dimensions

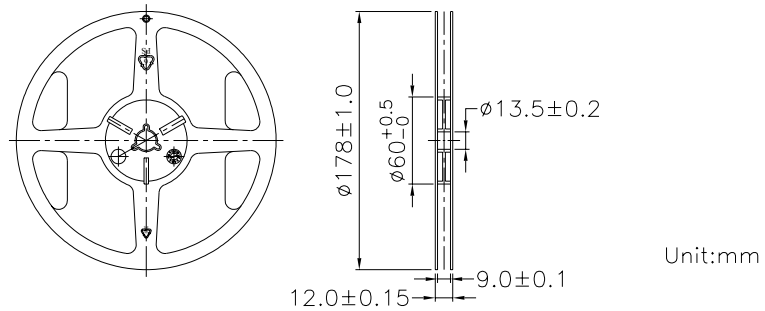


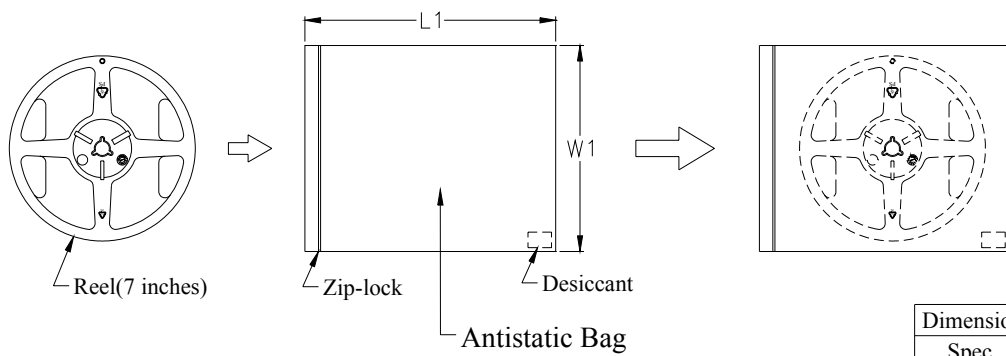
◆ Tape Specification : 3000pcs Per Reel

Packing Size													
Item	W	P1	E	F	Do	D1	Po	10Po	P2	Ao	Bo	Ko	t
Spec.	8.00	4.00	1.75	3.50	1.50	1.00	4.00	40.00	2.00	2.80	3.35	1.35	0.22
Tolerance	±0.20	±0.10	±0.10	±0.05	+0.10 -0.00	±0.05	±0.05	±0.20	±0.05	±0.10	±0.10	±0.10	±0.05



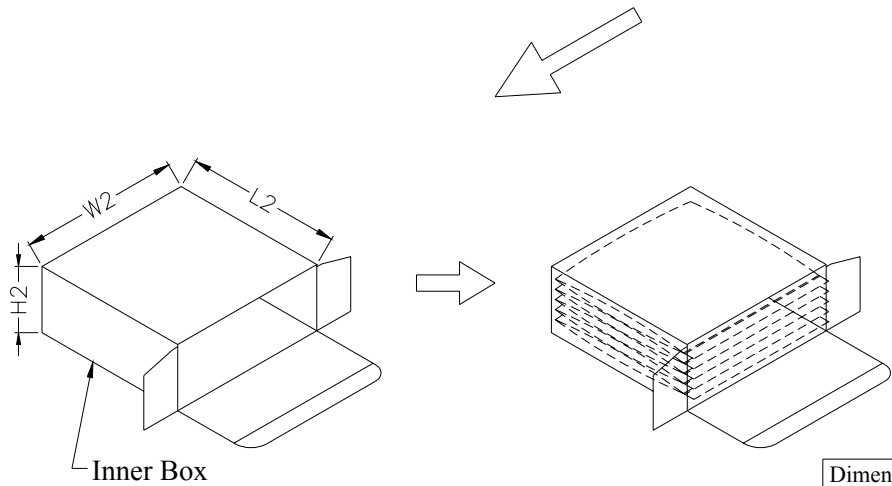
◆ Package Dimensions of Reel :





Dimension	L1	W1
Spec.	203.0	198.0

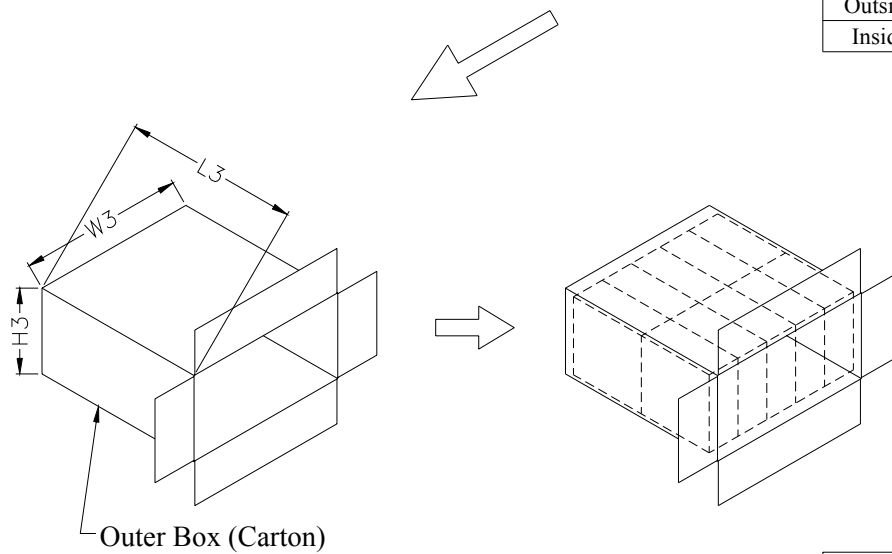
Unit : mm



5 Reels per Box

Dimension	L2	W2	H2
Outside	200.0	205.0	85.0
Inside	193.7	198.7	78.7

Unit : mm



10 Boxes per Carton

Dimension	L3	W3	H3
Outside	448.0	424.0	220.0
Inside	433.4	409.4	205.4

Unit : mm