

Surface Mounted Chip LED

Model No. : CL-SP155UHRUHY

■ 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 _{FP}	100	mA
Reverse Voltage	V _R	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

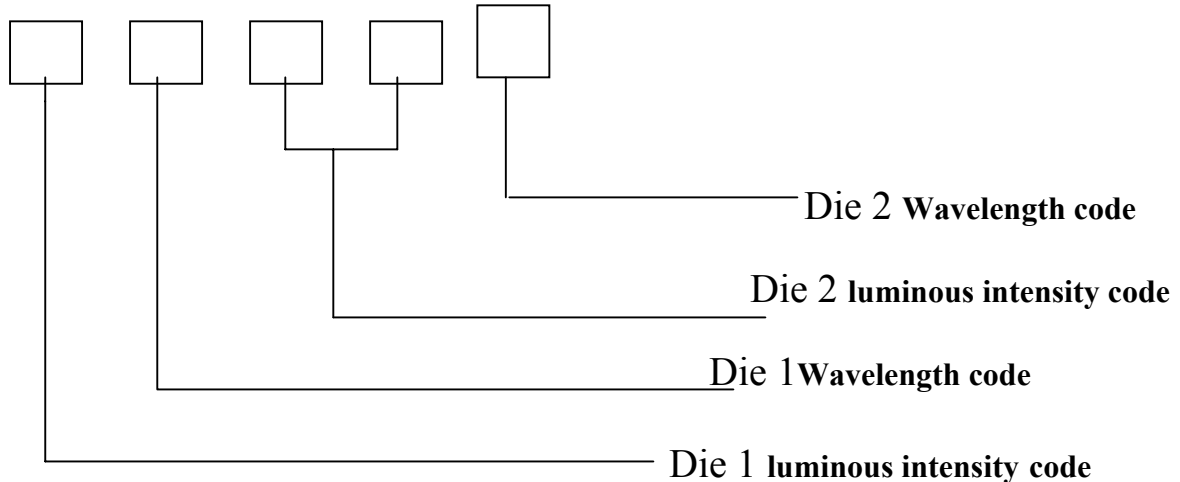
(Ta=25°C)

Chip			Lens Appearance	Absolute Maximun Rating			Electro-optical Data (At 20mA)				Viewing Angle 2 θ 1/2 (deg)
Emitted Color	λ P (nm)	λ D (nm)		△ λ (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	45	72	130°
Ultra High Yellow	593	592		15	78	30	2.1	2.6	45	72	

ISSUE	DIMENSION NO :	VERSION :	DATE :
		A	
	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 _v)		
	Typ.,mcd	Range,mcd	Bin code
UHR	72	45/72	J
		72/115	K
		115/180	L

Dominant Wavelength Grade of Ultra High Red Chip-LED Products

● I type @ 20mA

BIN	Range
1	624/640

◆ **The Luminous Intensity Grade of Ultra HighYellow Chip-LED Products**

● Test Condition : @ 20mA

Part No.	Luminous Intensity (I _v)		
	Typ.,mcd	Range,mcd	Bin code
~UHY	72	45/72	J
		72/115	K

◆ **Dominant Wavelength Grade of Ultra HighYellow Chip-LED Products**

● I type @ 20mA

BIN	Range	BIN	Range
0	585/588	2	591/594
1	588/591	3	594/597

◆ **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.

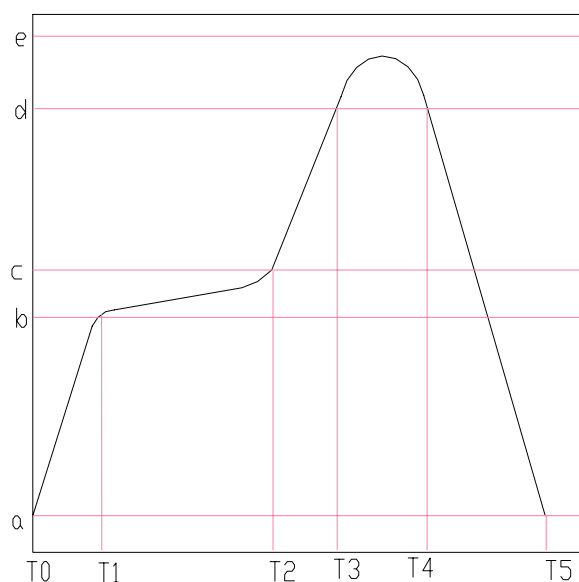
◆ **Reliability Test Items And Conditions :**

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 _F = 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 :

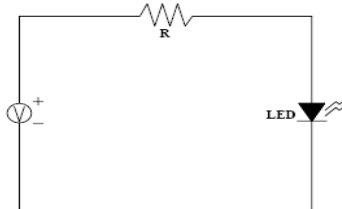
Temp.(°C)		Time(Sec)	
a	25	T0~T1	Max. 3°C/sec
b	150	T1~T2	90~130 sec
c	200	T2~T3	Max. 3°C/sec
d	220	T3~T4	Max. 30~50 sec
e	250		
		T4~T5	Max. -3°C/sec
Blet Speed		70~90 cm/min	



◆ 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

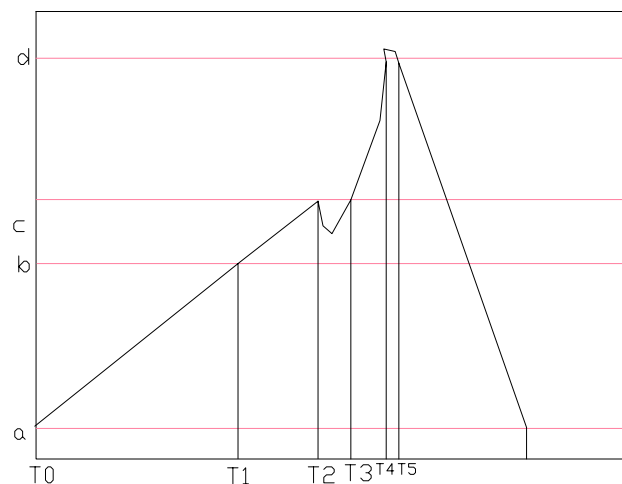
1. The operation of temperature and R.H. are : $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$, R.H.60% Max..
2. Once the package is opened, the products should be used within 72 hrs. Otherwise, they should be kept in a dampproof box with desiccating regent. Considering the tape life, we suggest our customers 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 :

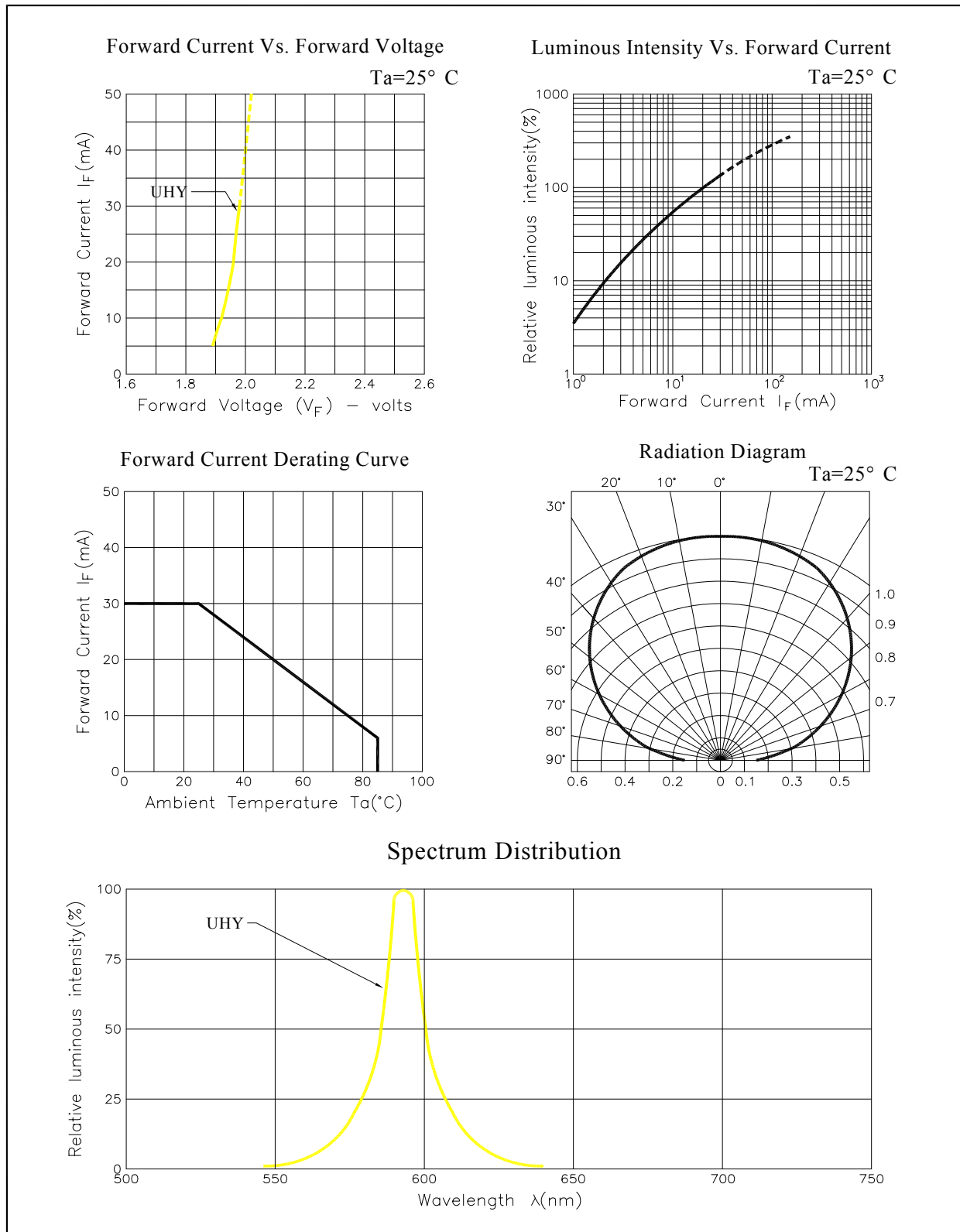
- Temperature at tip of iron : 300°C Max. (25W Max.)
- Soldering time : $5 \pm 1\text{sec}$.

◆ Wave Soldering Temp. / Time :

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



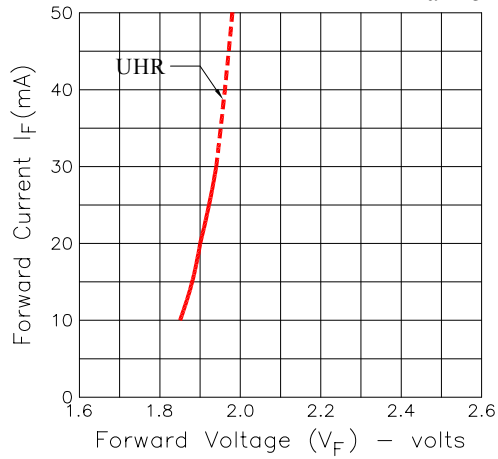
◆ **Typical Electro-Optical Characteristic Curves:**



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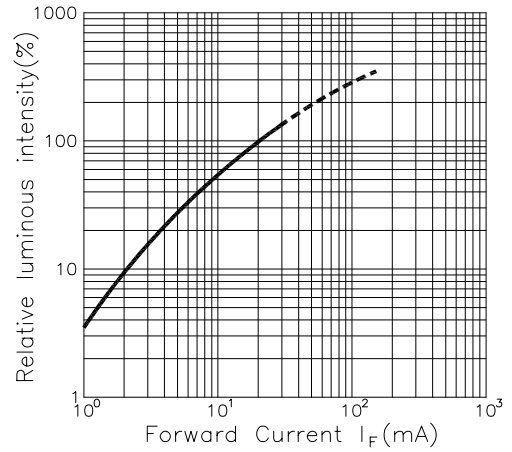
Forward Current Vs. Forward Voltage

$T_a = 25^\circ \text{C}$

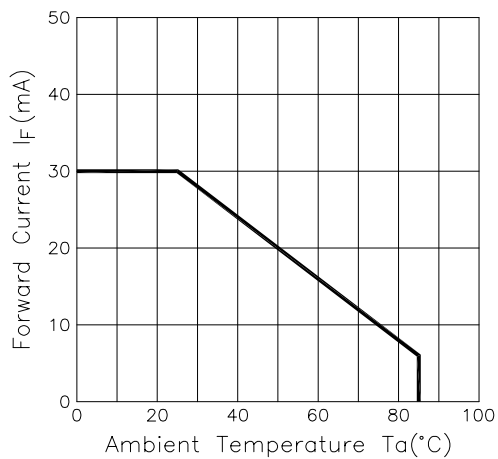


Luminous Intensity Vs. Forward Current

$T_a = 25^\circ \text{C}$

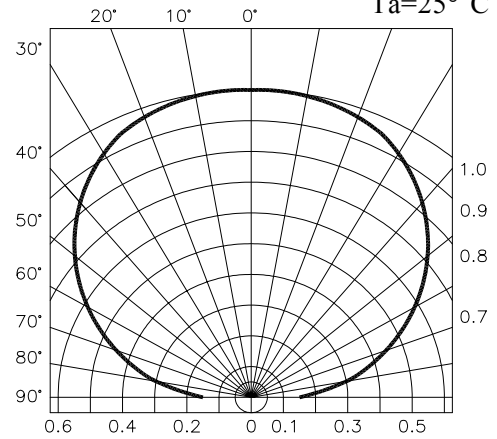


Forward Current Derating Curve

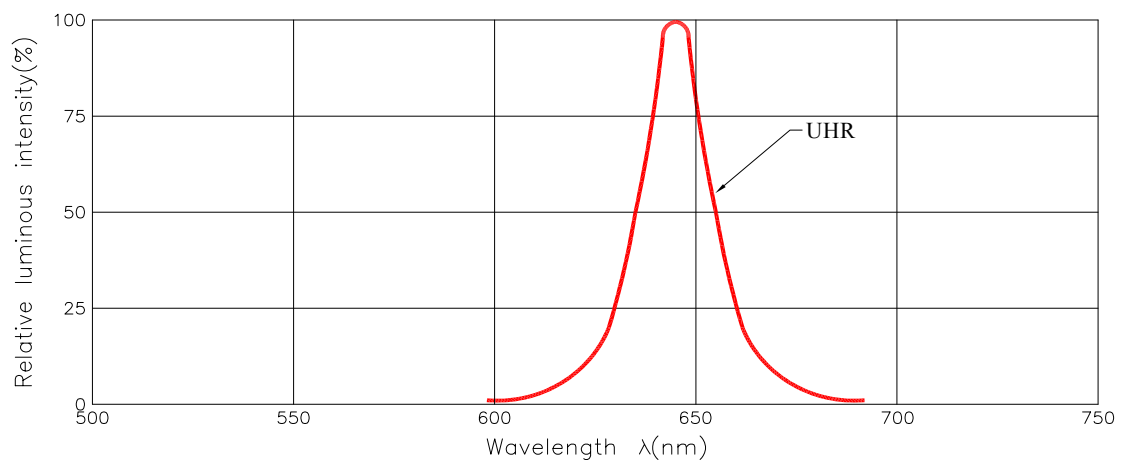


Radiation Diagram

$T_a = 25^\circ \text{C}$

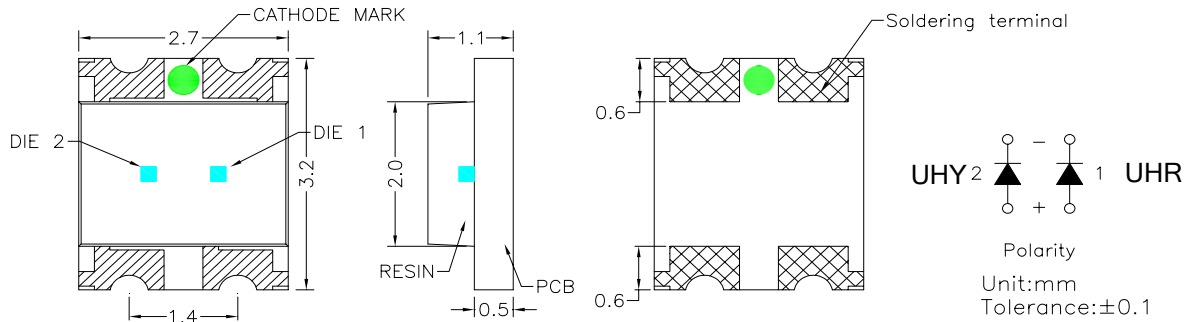


Spectrum Distribution



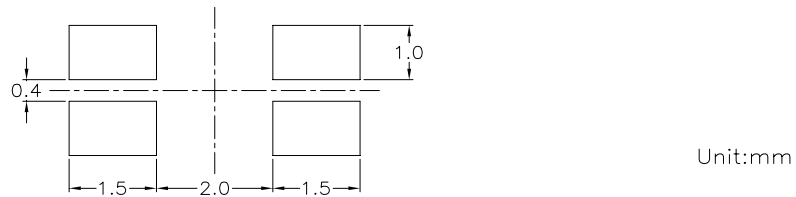
Model Type : SP155Series

◆ Package Dimensions of Device (SP155 Series)



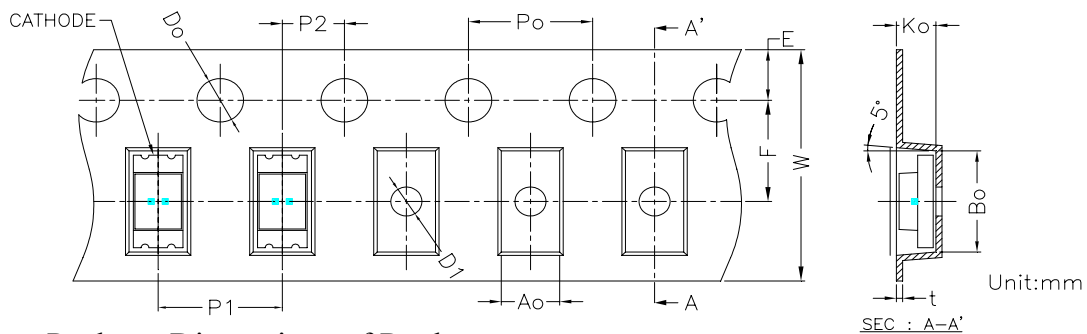
1. Soldering terminal may shift in x, y direction.
2. Polarity referring onto the cathode mark is reversed on the URUR/HRHR/SRSR

◆ 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 :

