

Surface Mounted Chip LED

Model No. : CL-SF687RGB

■ Features :

- PLCC-4 white package and high flux output
- Compatible reflow solder and wave solder process.
- Compatible with automatic placement equipment.
- Available on tape and reel(12mm tape)

■ Applications :

- Automotive: interior and exterior lighting
- Indicators
- Flat backlight for LCD's switches and symbols
- General use

Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Maximum	Unit
Peak Forward Current (1/10 Duty Cycle 0.1ms Pulse Width)	I_{PP}	100	mA
Reverse Voltage	V_R	5	V
Derating Linear From 25°C		0.4	mA/°C
Operating Temperature Range	T_{opr}	-30 to +80	°C
Storage Temperature Range	T_{stg}	-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)		$\triangle \lambda$ (nm)	Pd (mW)	If (mA)	Vf(V)		Iv(mcd)		
							Typ.	Max.	Min.	Typ.	
HYPER Red (InGaAlP)	660	640	Water Clear	27	78	30	1.9	2.6	115	180	100°
Green (InGaN)	523	525		38	78	30	3.3	4.5	180	285	
Blue (InGaN)	468	470		25	80	25	3.3	4.3	72	145	

ISSUE	DIMENSION NO :	VERSION :	DATE :
		A	2007/02/01
	APPROVAL :	CHECK :	EDIT :

- Besides, lightweight makes them ideal for miniature application, etc.

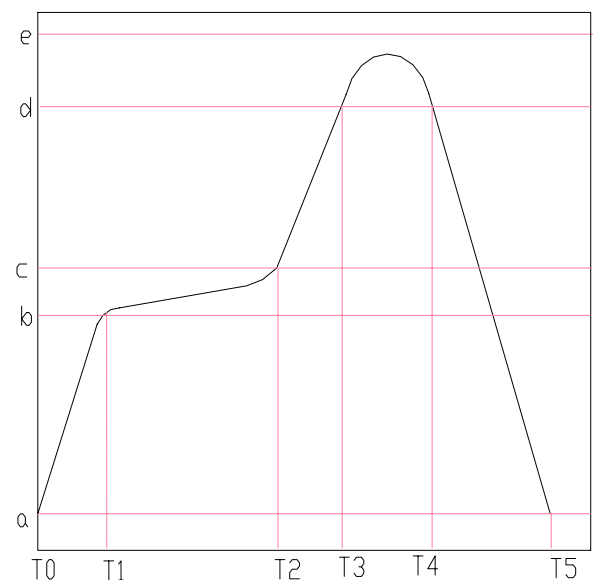
◆ **Reliability Test Items And Conditions :**

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 : :**

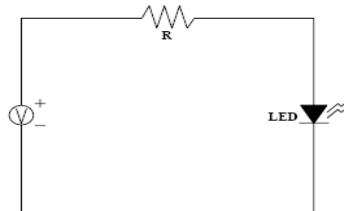
Please refer to the following figure :

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	



- Over – current – proof

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



- Storage

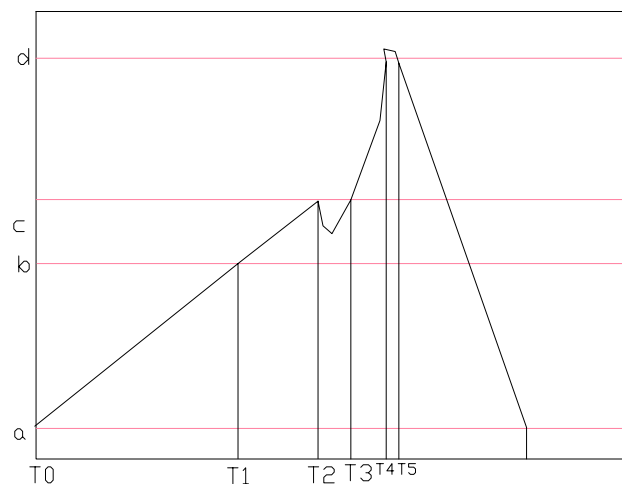
1. The operation of temperature and R.H. are : $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$, R.H.60% Max..
2. Once the package is opened, the products should be used within 72 hrs. Otherwise, they should be kept in a dampproof box with desiccating regent. Considering the tape life, we suggest our customers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

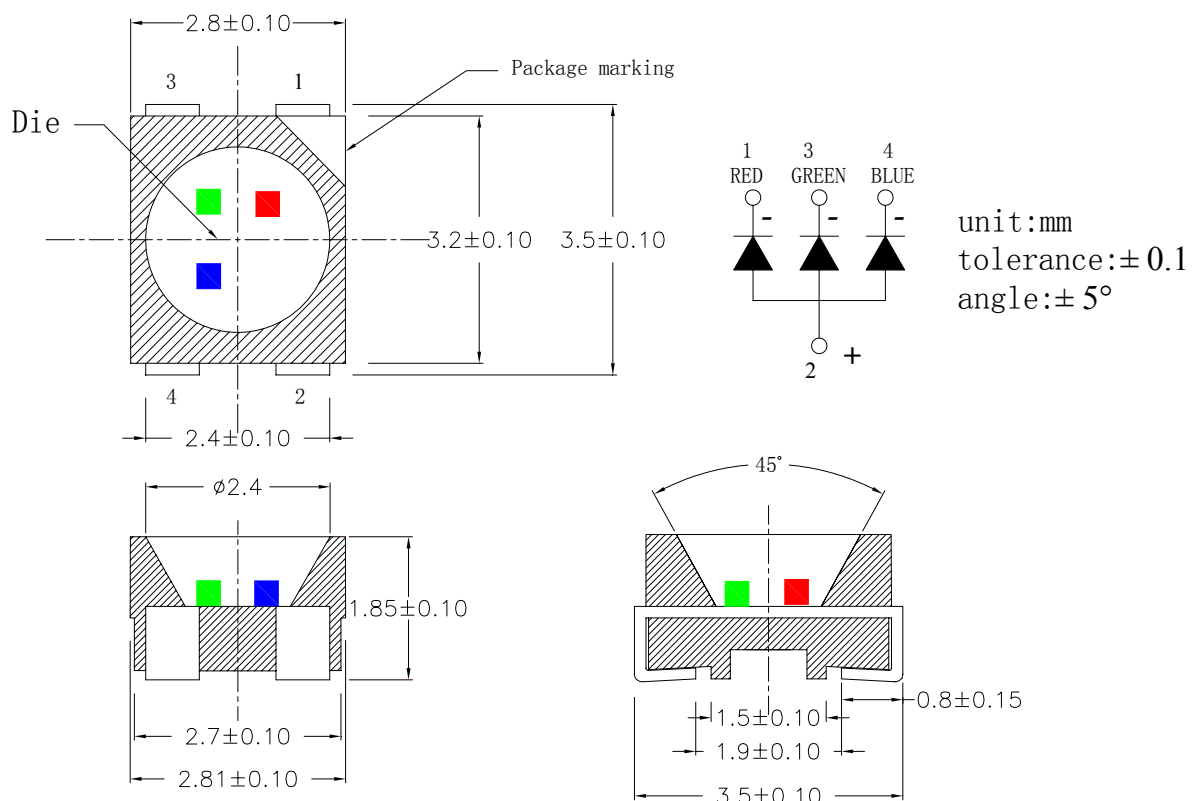
- Temperature at tip of iron : 300°C Max. (25W Max.)
- Soldering time : $5 \pm 1\text{sec}$.

◆ 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

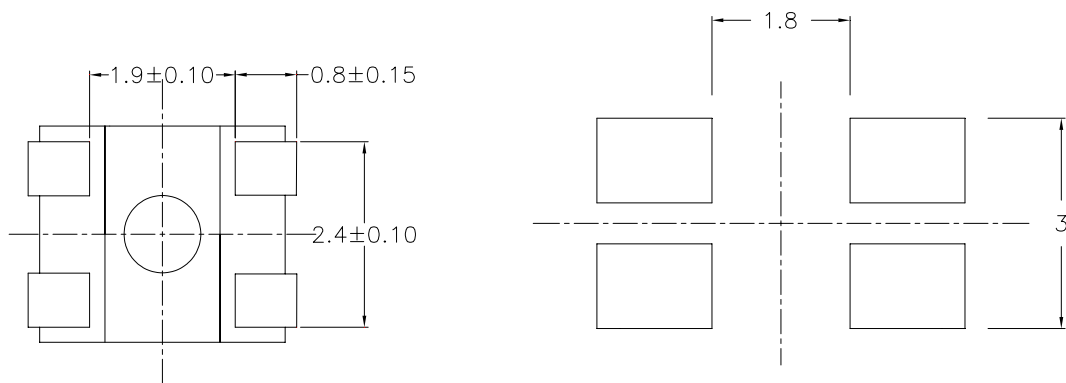


◆ Package Dimensions of Device

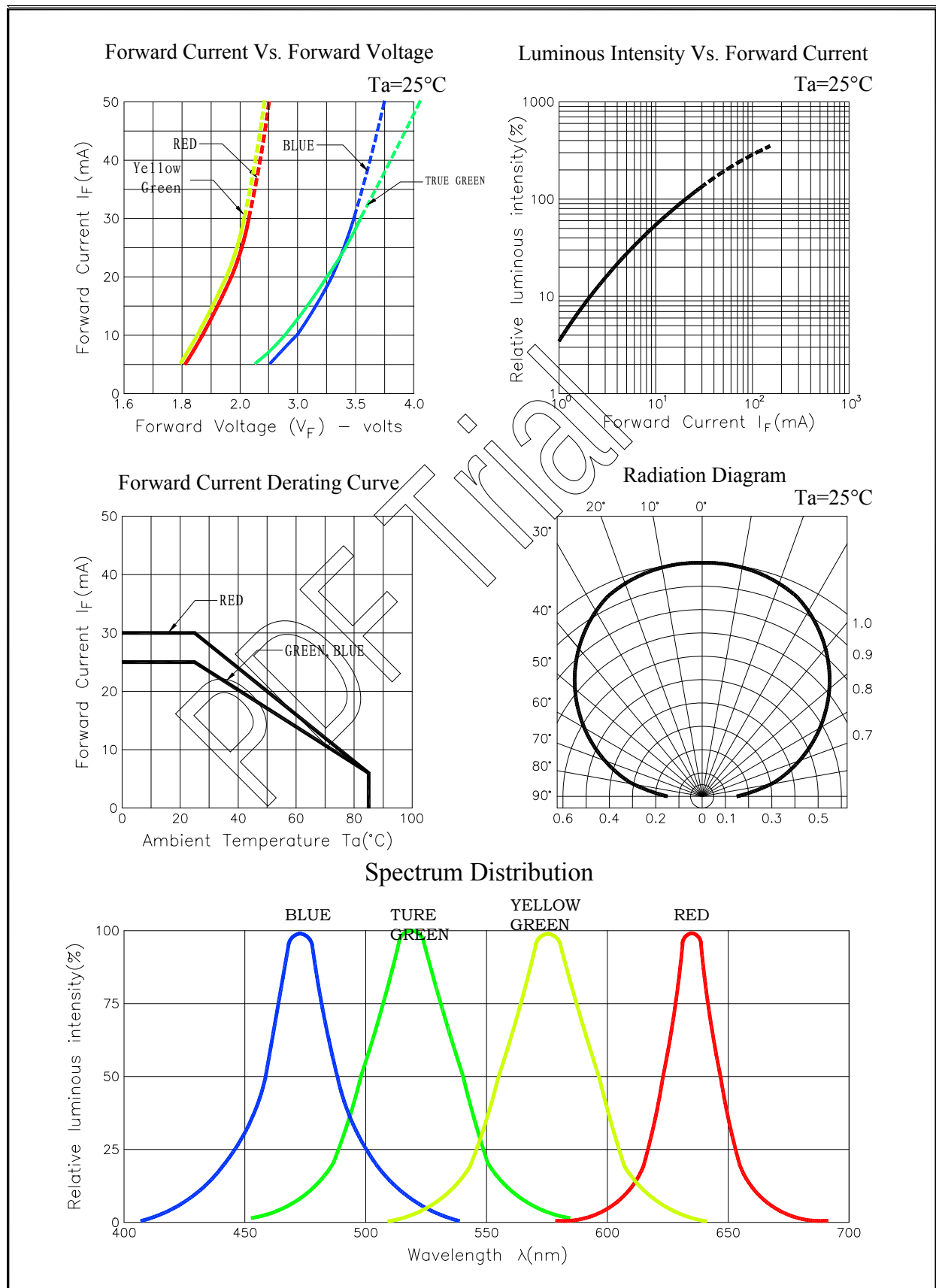


1. Soldering terminal may shift in x, y direction.

◆ Recommended Soldering Pad Dimensions

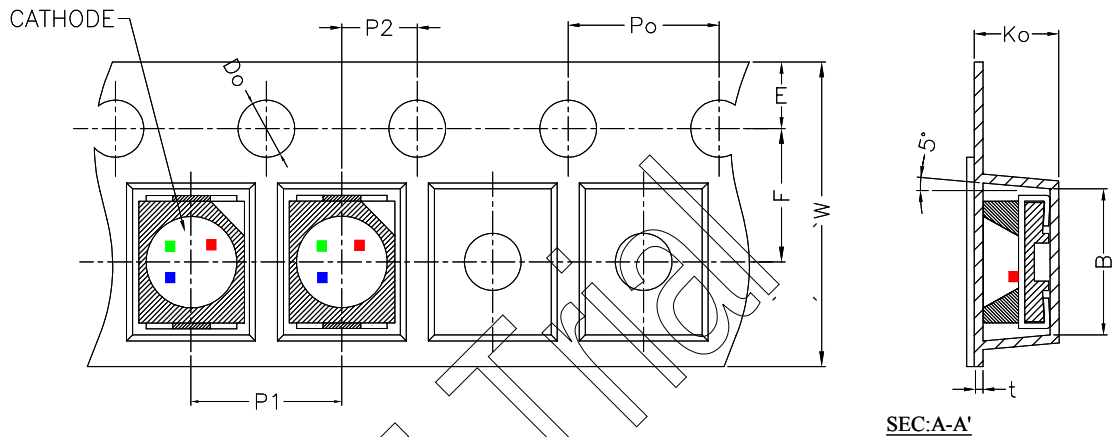


Typical Electro-Optical Characteristic Curves:



◆ Tape Specification : 2000pcs Per Reel

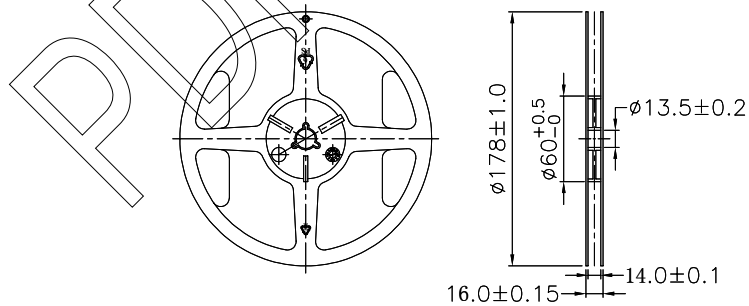
Packing Size													
Item	W	P1	E	F	Do	D1	Po	10Po	P2	Ao	Bo	Ko	t
Spec.	8.0	4.00	1.75	5.50	1.5	0.5	4.00	40.00	2.00	3.10	3.84	2.24	0.23
Tolerance	±0.20	±0.10	±0.10	±0.05	$\begin{smallmatrix} +0.10 \\ -0.00 \end{smallmatrix}$	±0.05	±0.05	±0.20	±0.05	±0.10	±0.10	±0.10	±0.05



SEC:A-A'

Unit:mm

◆ Package Dimensions of Reel



◆ Label explanation

Product No: CL-XXXXXXXXXX	
Lot No: XXXXXXXXX	
Q'ty: XXXX	PCS
Q.C: XXXXXXX	BIN
Date:XXXX.XX.XX	