



Data Sheet

Customer:

Part No:

CL-SFC3020DNB-02

Sample No:

Description:

Item No:

Customer			
Check	Inspection	Approval	Date

Surface Mounted Chip LED

◆ Features :

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

◆ Applications :

- Automotive_Telecommunication
- Indicators
- LCD Back-lights
- Illuminations

Dice Material	Light Color	Lens Color
InGaN	Blue	Water Clear

◆ Absolute Maximum Ratings

Item	Symbol	Maximum	Unit
Power dissipation	P _D	87.5	mW
Continuous forward current	I _{Fmax}	25	mA
Peak forward current (1/10 duty cycle 0.1ms pulse width)	I _{FP}	100	mA
Reverse voltage	V _R	5	V
Electrostatic Discharge (HBM)	ESD	2000	V
Operating temperature range	T _{opr}	-30 to +85	°C
Storage temperature range	T _{stg}	-40 to +100	°C

◆ Electrical/Optical Characteristics

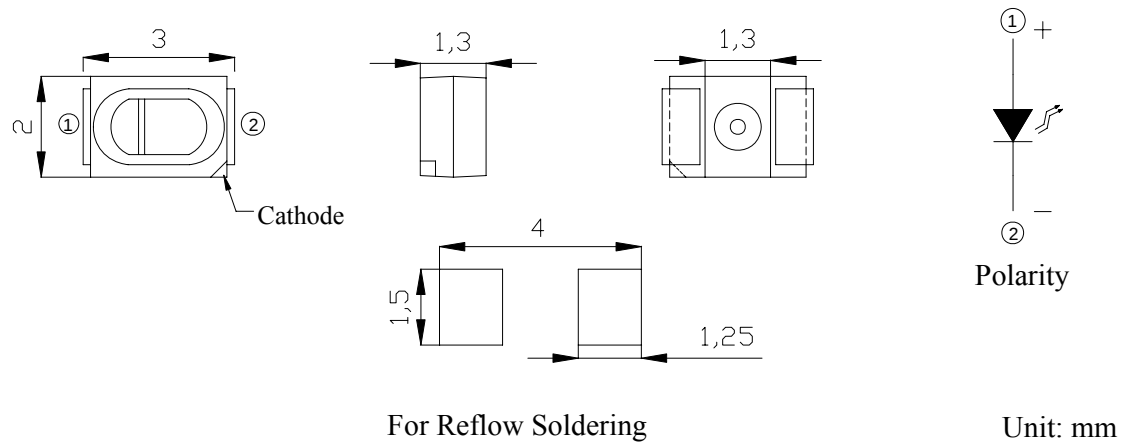
Item	Symbol	Condition	Min	Typ	Max	Unit
Forward voltage	V _F	I _F =5mA	-	2.9	--	V
		I _F =20mA	-	3.3	-	
Dominant wavelength	λ _d	I _F =5mA	-	472	-	nm
		I _F =20mA	-	470	-	
Viewing Angle	2θ _{1/2}	I _F =20mA	-	120	-	Deg
Luminous Intensity	I _v	I _F =5mA	-	45	-	mcd
		I _F =20mA	-	280	-	
Reverse Current	I _r	V _r =5V			10	uA

※ The measuring tolerance → Luminous intensity ±15%

Wavelength (λ_d) ±2nm

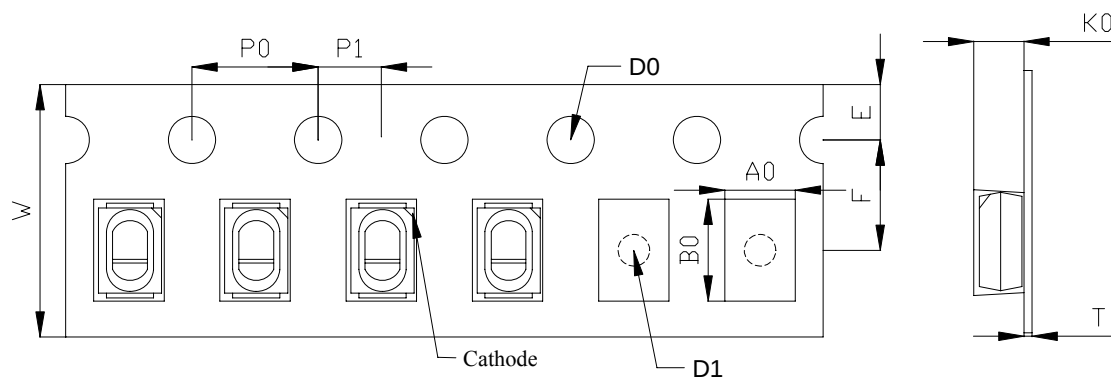
◆ Dimensions/Taping and Package Spec

● Package Dimensions of Device(SL610 series)

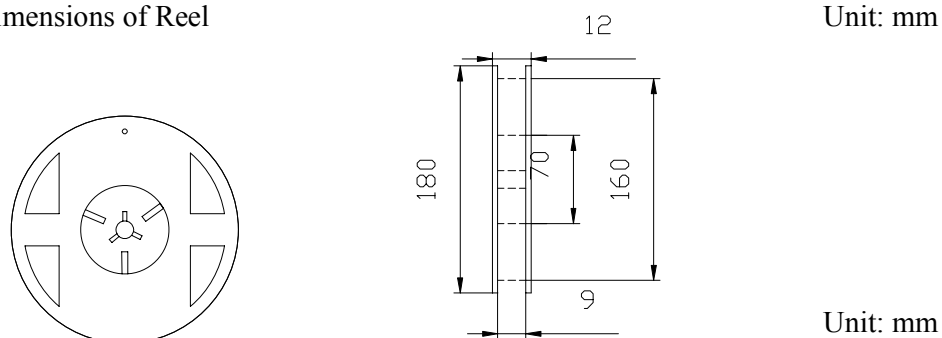


● The Specification :2000 pcs Per Reel

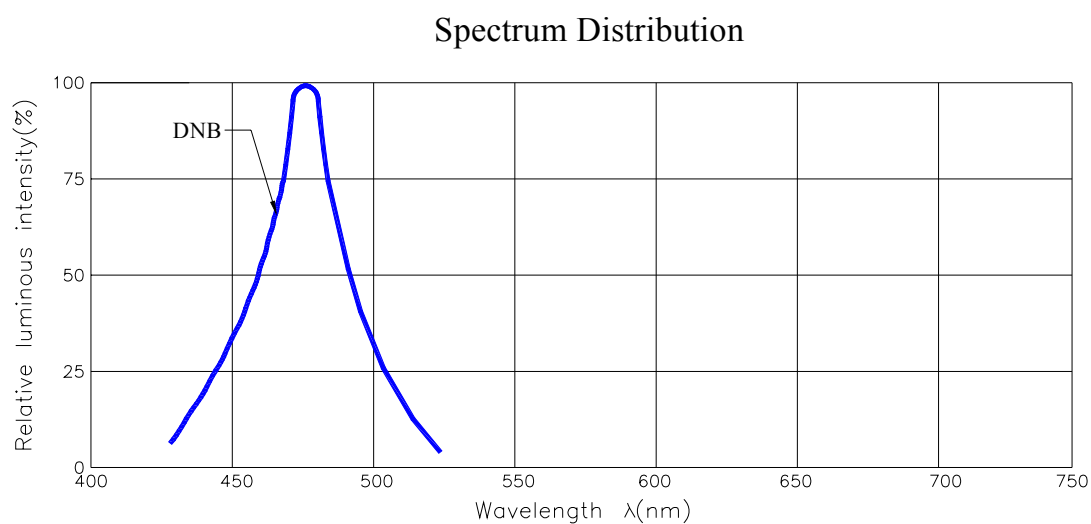
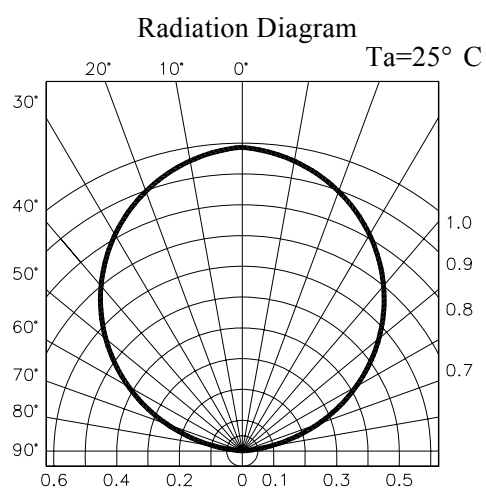
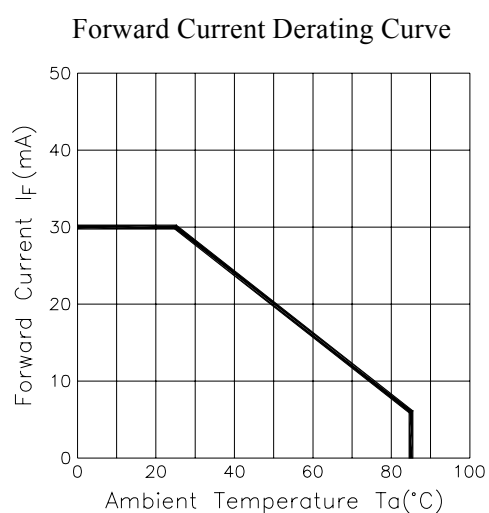
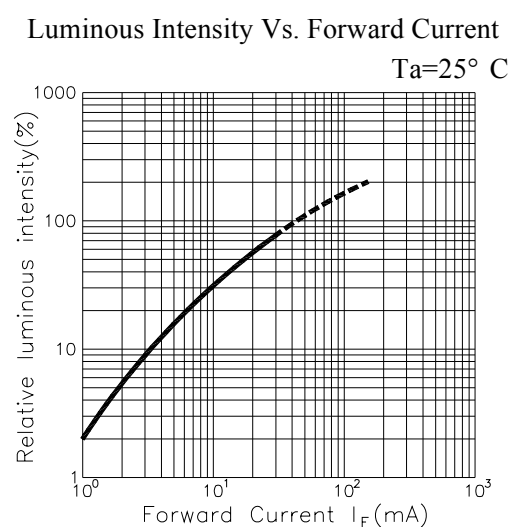
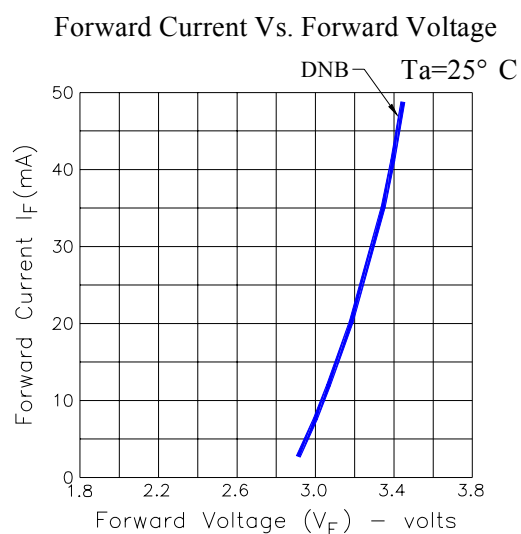
Packing Size													
Item	W	P1	E	F	D0	D1	P0	10P0	P2	A0	B0	K0	T
Spec	8.00	4.00	1.75	3.50	1.50	1.00	4.00	40.00	2.00	2.23	3.23	1.53	0.25
Tolerance	± 0.20	± 0.10	± 0.10	± 0.05	+ 0.10 - 0.00	± 0.05	± 0.05	± 0.20	± 0.05	± 0.10	± 0.10	± 0.10	± 0.05



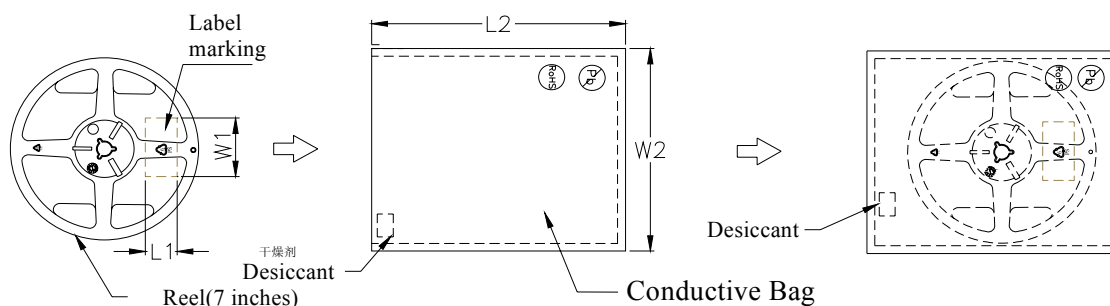
● Package Dimensions of Reel



◆ Typical Electro-Optical Characteristic Curves

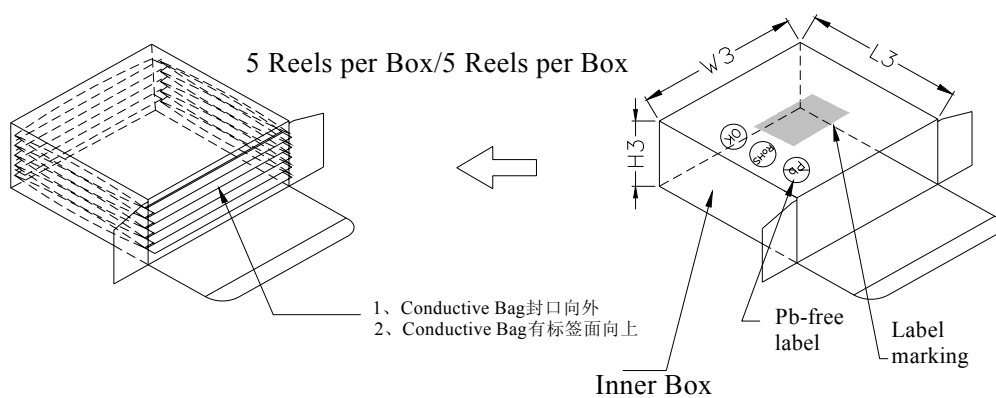


◆ Packing and Shipping Instruction



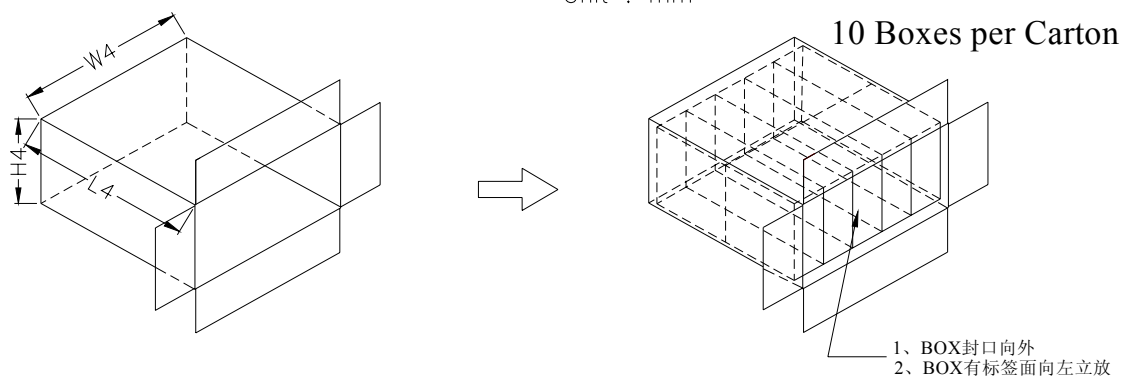
Dimension	L1	W1	L2	W2
Spec.	30.0	60.0	260.0	230.0

Unit : mm



Dimension	L3	W3	H3
Outside	238	77	278
Inside	237.4	76.4	277.7

Unit : mm



Dimension	L4	W4	H4
Outside	398.6	246.6	570.3
Inside	400.0	248.0	571.0

Unit : mm

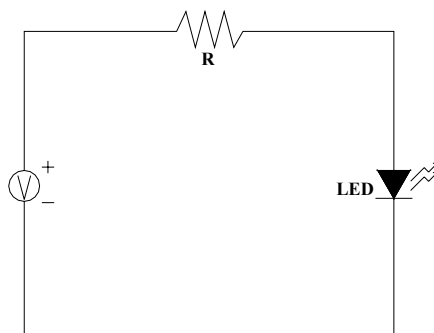
◆ Descriptions :

- 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 hr/cycle/time	Sample Q'ty	Ac / Re
1	Solder Heat	TEMP : 260℃±5℃ ; 10±1 sec	2 times	30 pcs	0 / 1
2	Solder ability Test ※	TEMP : 235℃±5℃ ; 3±1 sec	1 time	5 pcs	0 / 1
3	Temperature Cycle	H : +85℃ 30min. ∫ 5min. L : -40℃ 30min.	100 cycles	20 pcs	0 / 1
4	Thermal Shock	H : +85℃ 5min. ∫ L : -40℃ 5min.	50 cycles	20 pcs	0 / 1
5	High Temperature Storage	TEMP : 85℃	1000 hrs	20 pcs	0 / 1
6	Low Temperature Storage	TEMP : -40℃	1000 hrs	20 pcs	0 / 1
7	DC Operating Life	I _F = I _{Fmax}	1000 hrs	20 pcs	0 / 1
8	High Temperature High Humidity	85℃ / 90~95%R.H.	1000 hrs	20 pcs	0 / 1
9	Shocking test	100~2000Hz ; 98.1m/s ² X,Y,Z direction	2 hrs	20 pcs	0 / 1
10	Dropping test	Put on pallet ; height : 75cm	3 times	20 pcs	0 / 1
Judgment Criteria					
Forward Voltage V _F		V _F Max-Increase < 1.1x			
Reverse Current I _R		I _R Max-Increase < I _{Rmax}			
Luminous Intensity I _V		I _V Decay < 40%			
※Solder ability test criteria : coverage is not less than 95%					
Note : Measurement shall be taken after the tested samples have been returned to normal ambient conditions (generally after two hours)					

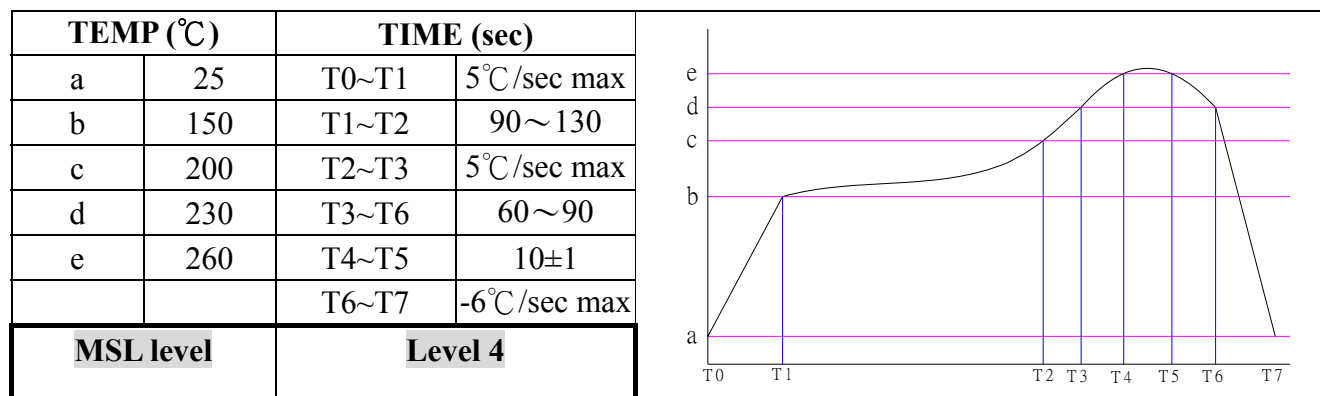
◆ Test Circuit



◆ Precautions For Use :

- Overdrive current proof
Customer must apply resistors for protection, otherwise slight voltage shift will cause current change with great deal. (Burn out will happen)
- Storage
 1. The operation of temperature and R.H. are : $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$, 60%R.H. Max..
 2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccant. Considering the tape life, we suggest our customers to use our products within 1.5 year (from production date) .
 3. It's recommended to bake before soldering when the package is unsealed more than 72 hrs. The condition is : $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 2hrs.

◆ Reflow Temp/Time :



◆ Hand Soldering Iron :

- Temperature at tip of iron : 350°C Max. (35W Max.)
- Soldering time : $3 \pm 1\text{sec}$.

Luminous Intensity Bin Limits

BIN Code	Test Condition @20mA	
DNB	IVmin(mcd)	IVmax (mcd)
L2	145	180
M1	180	225
M2	225	285
N1	285	360

Dominant Wavelength BIN Limits

BIN Code	Test condition: @20mA	
DNB	λ_{dmin} (nm)	λ_{dmax} (nm)
1	465	467.5
2	467.5	470
3	470	472.5
4	472.5	475

Forward Voltage Bin Limits

Test Condition: @20mA					
BIN Code	Vfmin(v)	Vfmax(v)	BIN Code	Vfmin(v)	Vfmax(v)
F	2.9	3.0	I	3.2	3.3
G	3.0	3.1	J	3.3	3.4
H	3.1	3.2	K	3.4	3.5