RoHS Pb Free

Zhejiang GuYue LongShan Electronic Technology Development Co., Ltd.

Surface Mounted Chip LED Model No.：LS-SP192DNB74-D

■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
GaN	Blue	Water Clear

Absolute Maximum Ratings （Ta=25℃）

Item	Symbol	Maximum	Unit
Power Dissipation	P_D	100	mW
Continuous Forward Current	I_F	25	mA
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℃		0.4	mA/℃
Operating Temperature Range	Topr	-30 to +80	℃
Storage Temperature Range	Tstg	-40 to +85	℃

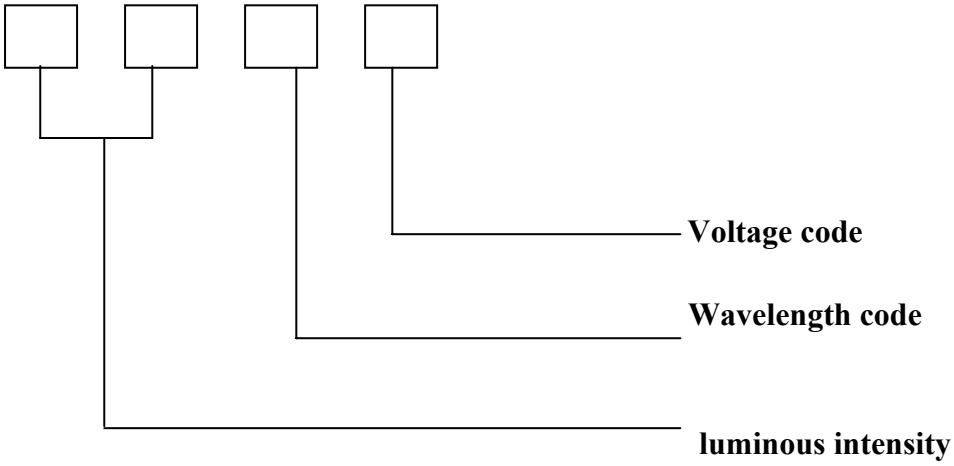
Electrical / Optical Characteristics （Ta=25℃）

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	IF=5mA		2.90	3.20	V
Reverse Current	I_R	VR=5V			10	uA
Peak Emission Wavelength	λ_P	IF=5mA		468		nm
Dominant Wavelength	λ_D	IF=5mA		470		nm
Viewing Angle	$2\theta_{1/2}$	IF=5mA		130		Deg
Luminous Intensity	I_V	IF=5mA	7.2			mcd

ISSUE	DIMENSION NO：	VERSION：	DATE：
		A	2011/03/30
	APPROVAL：	CHECK：	EDIT：

◆ **Packing coding principle**

Notice: Bin code： luminous intensity / wavelength / voltage。



◆ **The Luminous Intensity Grade of Blue Chip-LED Products**

● **Test Condition：@ 5mA**

Range,mcd	Bin code
7.2/9.0	E1
9.0/11.5	E2
11.5/14.5	F1
14.5/18	F2
18/22.5	G1
22.5/28.5	G2
28.5/36	H1

◆ **Dominant Wavelength Grade of Blue Chip-LED Products**

● I type @ **5mA**

BIN	Range	BIN	Range
0	461~463.5	4	471~473.5
1	463.5~466	5	473.5~476
2	466~468.5	6	476~478.5
3	468.5~471	7	478.5~481

◆ **Forward Voltage Grade of Blue Chip-LED Products**

● I type @ **5mA**

BIN	Range	BIN	Range
1	2.6/2.7	4	2.9~3.0
2	2.7/2.8	5	3.0~3.1
3	2.8/2.9	6	3.1~3.2

◆ 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.

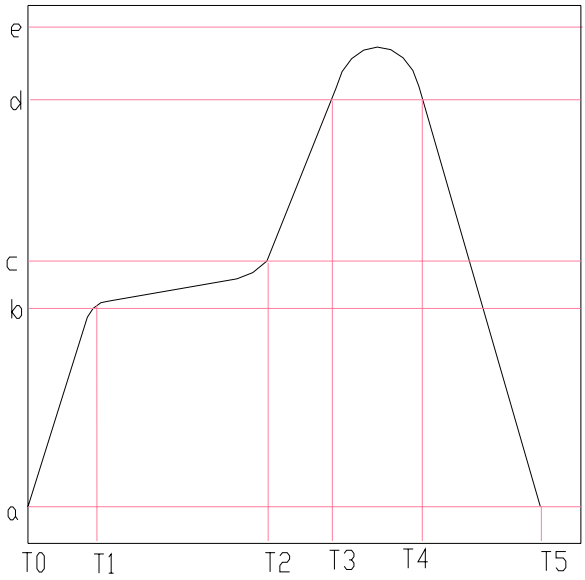
◆ Reliability Test Items And Conditions：

NO.	Item	Test Conditions	Test Hours / Cycle	Sample Q'ty	Ac / Re
1	Solder Heat	TEMP：260℃±5℃	5 sec	36 pcs	0 / 1
2	Temperature Cycle	H：+100℃ 30min. ∫ 5min. L：-40℃ 30min.	50 cycle	36 pcs	0 / 1
3	Thermal Shock	H：+100℃ 5min. ∫ 10sec L：-40℃ 5min.	50 cycle	36 pcs	0 / 1
4	High Temperature Storage	TEMP：100℃	1000 hrs	36 pcs	0 / 1
5	Low Temperature Storage	TEMP：-40℃	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℃ / 90～95%R.H.	1000 hrs	36 pcs	0 / 1

◆ Reflow Temp. / Time：：

Please refer to the following figure：

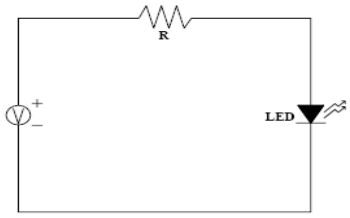
Temp.(℃)		Time(Sec)	
a	25	T0~T1	Max. 3℃/sec
b	150	T1~T2	90~130 sec
c	200	T2~T3	Max. 3℃/sec
d	220	T3~T4	Max. 30~50 sec
e	250		
		T4~T5	Max. -3℃/sec
Blet Speed		70~90 cm/min	



◆ 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

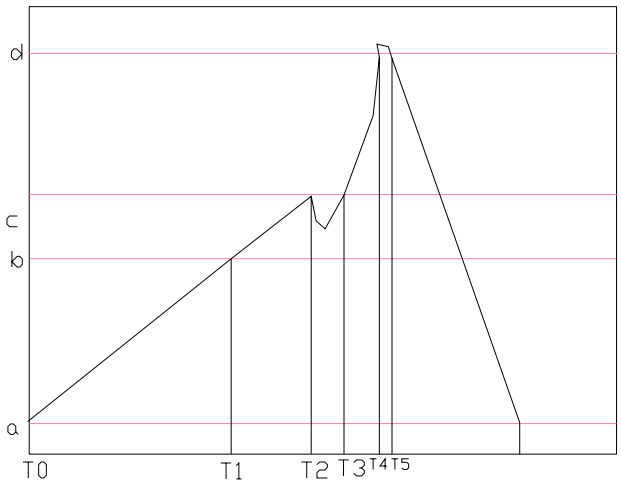
1. The operation of temperature and R.H. are：5℃～30℃, R.H.60％ Max..
2. Once the package is opened, the products should be used within 72 hrs. Otherwise, they should be kept in a dampproof box with desiccating regent. Considering the tape life, we suggest our customers to use our products within 1 year（from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

◆ Soldering Iron：

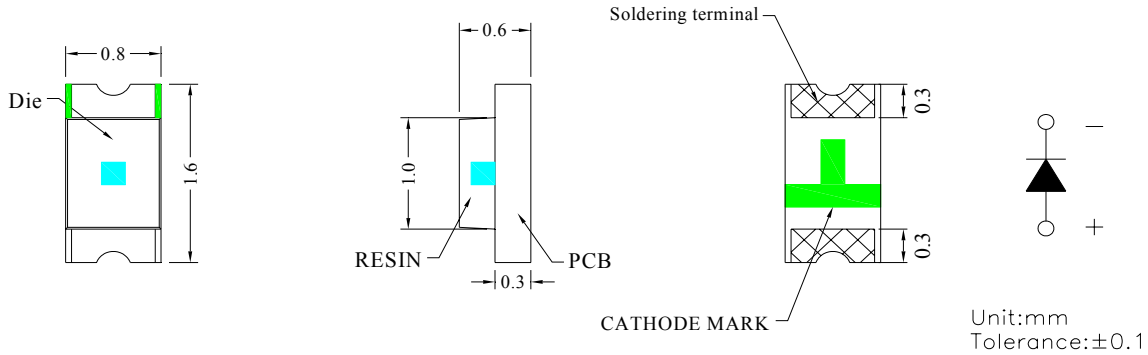
- Temperature at tip of iron：300℃ Max.（25W Max.）
- Soldering time：5 ±1sec.

◆ Wave Soldering Temp. / Time：

Temp.(℃)		Time(Sec)	
a	25	T1~T2	60±20
b	130±10	T2~T3	
c	185	T3~T6	
d	250±3	T4~T5	3±2

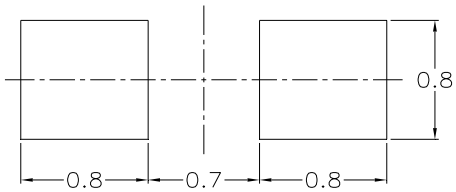


◆ Package Dimensions of Device (LS-SP192 Series)



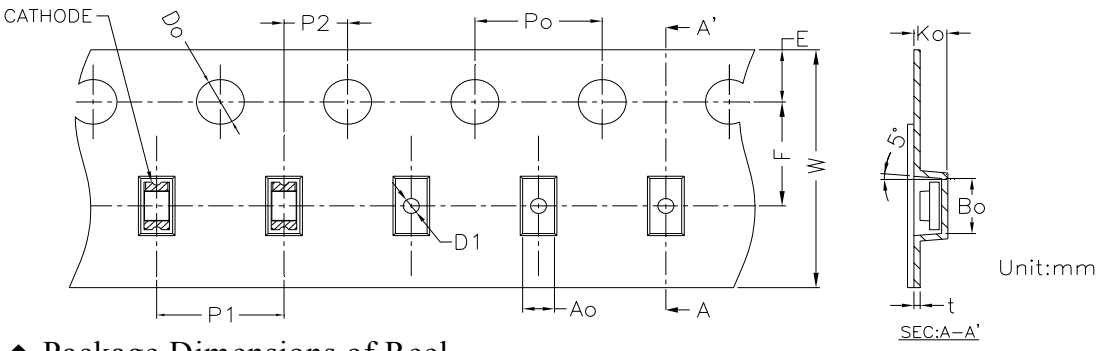
1. Soldering terminal may shift in x, y direction.

◆ Recommended Soldering Pad Dimensions

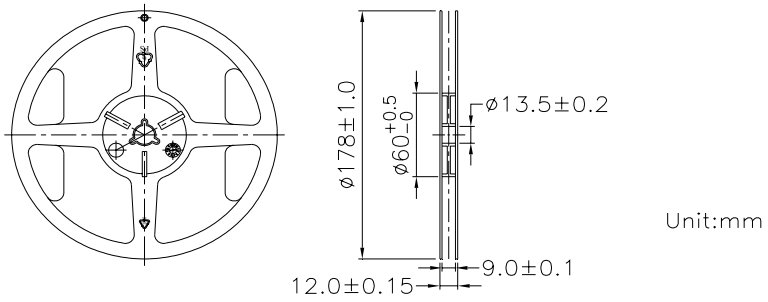


◆ Tape Specification : 4000pcs Per Reel

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	0.5	4.00	40.00	2.00	0.95	1.80	0.60	0.20
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

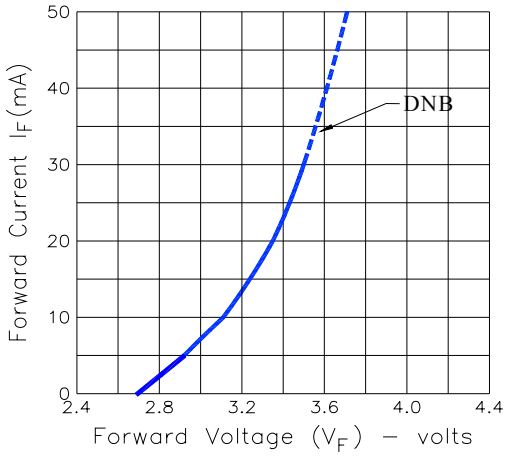


◆ Package Dimensions of Reel



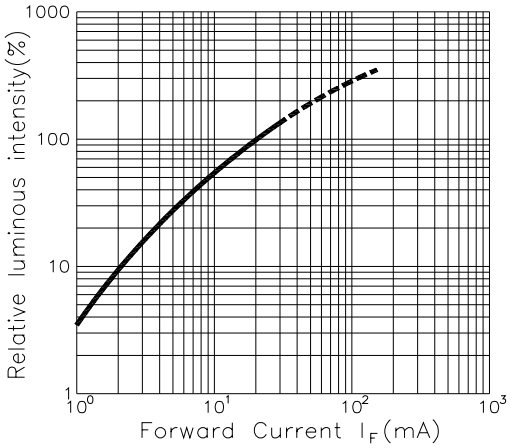
Forward Current Vs. Forward Voltage

Ta=25°C

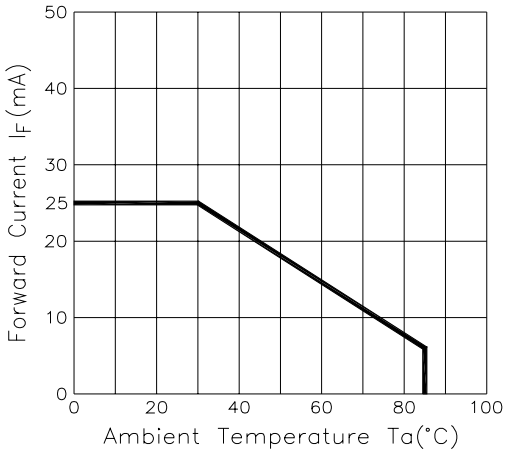


Luminous Intensity Vs. Forward Current

Ta=25°C

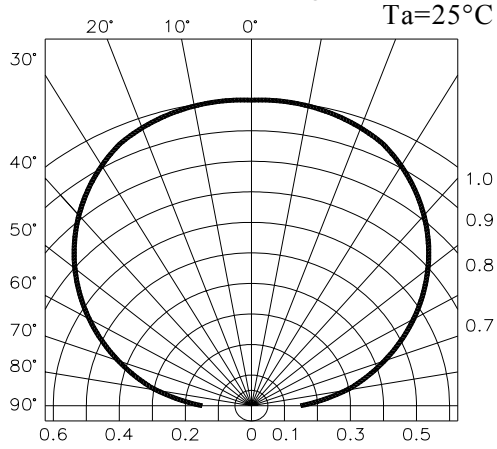


Forward Current Derating Curve

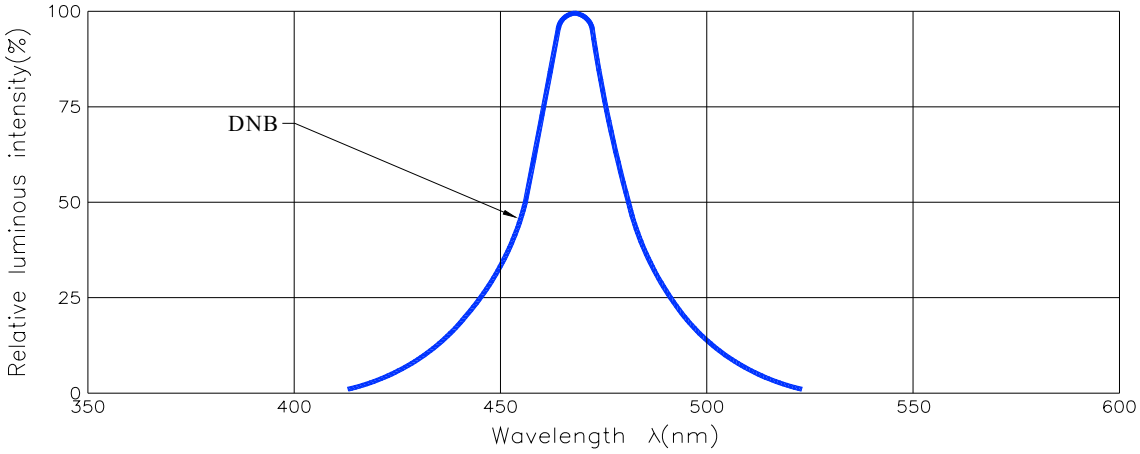


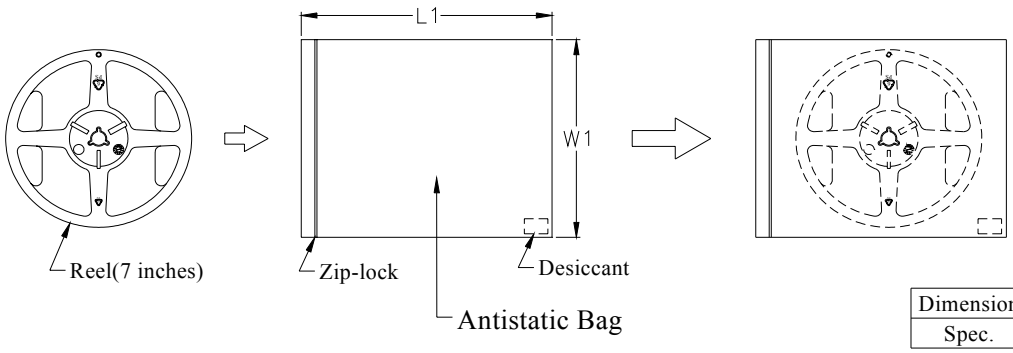
Radiation Diagram

Ta=25°C



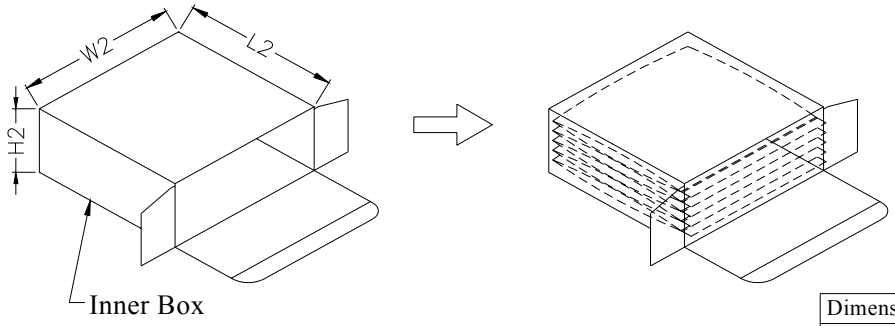
Spectrum Distribution





Dimension	L1	W1
Spec.	203.0	198.0

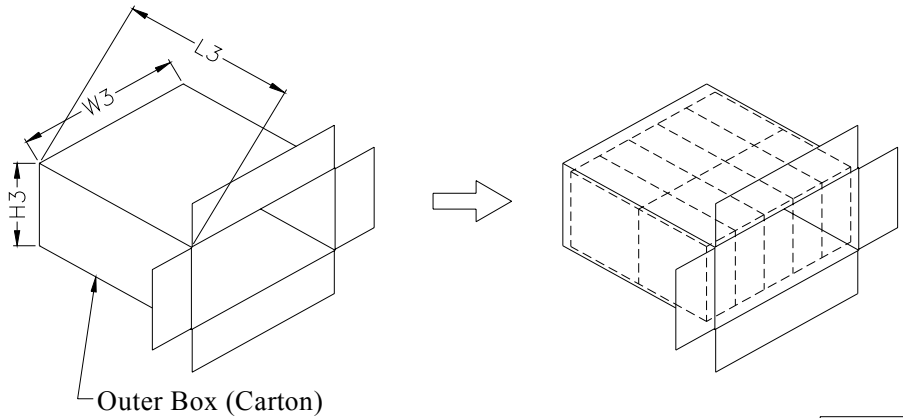
Unit : mm



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