

Surface Mounted Chip LED

SP0805B-RN

◆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
AlInGaP	Ultra High Red	Water Clear

◆Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Maximum	Unit
Power Dissipation	P _D	72	mW
Continuous Forward Current	I _{Fmax}	30	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°C		0.4	mA/°C
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +85	°C

◆Electrical / Optical Characteristics

(Ta=25°C)

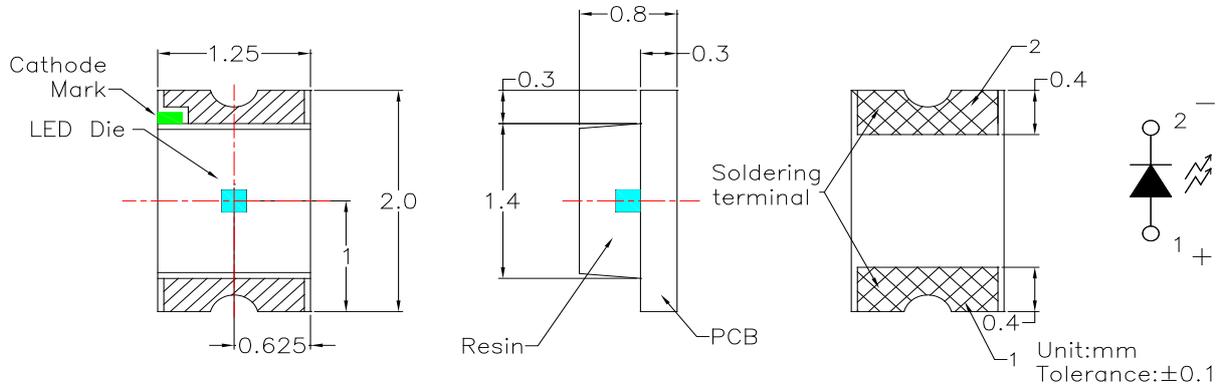
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V _F	I _F = 5mA	1.8	1.9		V
		I _F =20mA		1.9	2.1	
Reverse Current	I _R	V _R =5V			1	uA
Peak Emission Wavelength	λ _P	I _F =5mA		630		nm
Dominant Wavelength	λ _D	I _F =5mA	616.5	620	625.5	nm
		I _F =20mA	616.5	620	625.5	
Viewing Angle	2θ 1/2	I _F =20mA		130		Deg
Luminous Intensity	I _V	I _F =5mA	14.5	22.5		mcd
		I _F =20mA	45	72		

※The measuring tolerance → Luminous intensity ±15%
Wavelength (λ_D) ±2nm

APPROVER	DIMENSION NO :	VERSION :	DATE :
		A0	2013-5-19
	ISSUE :	CHECKER :	ENGINEER :

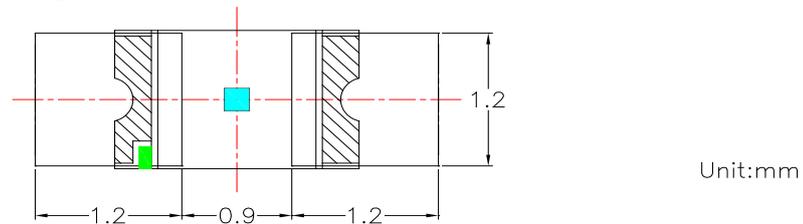
◆ Dimensions / Taping and Package Spec.

● Package Dimensions of Device (WE-SP172 Series)



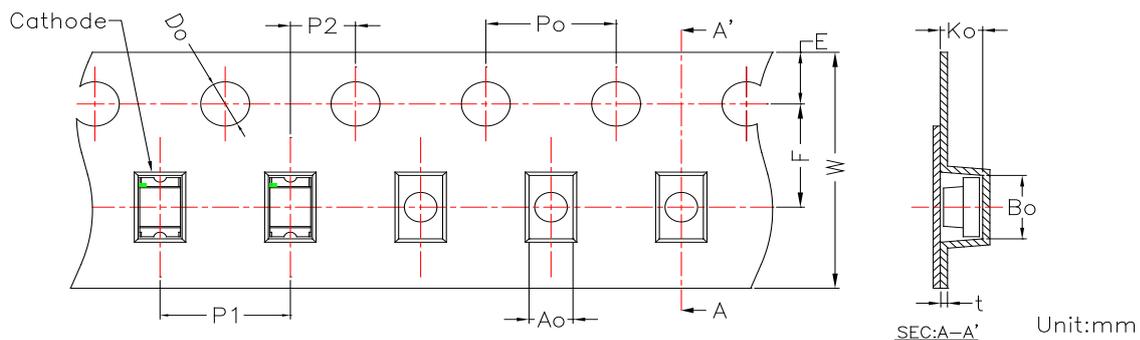
1. Soldering terminal may shift in x, y direction.

● Recommended Soldering Pad Dimensions

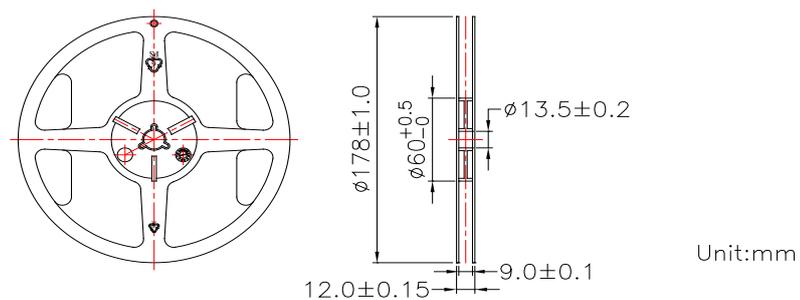


● Tape Specification : 4000pcs Per Reel

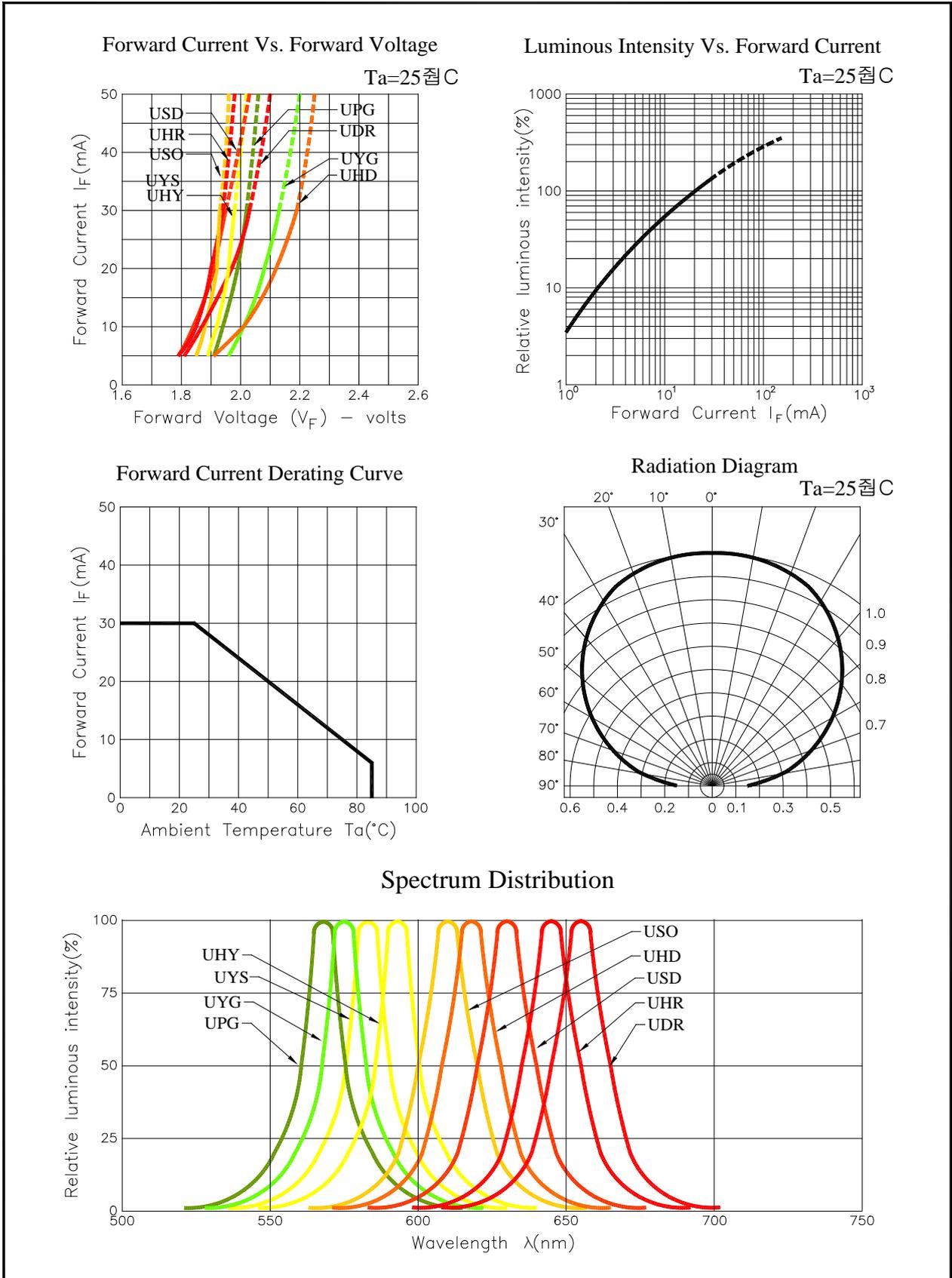
Packing Size													
Item	W	P1	E	F	Do	D1	Po	10Po	P2	Ao	Bo	Ko	t
Spec.	8.00	4.00	1.75	3.50	1.50	1.00	4.00	40.00	2.00	1.45	2.25	1.0	0.23
Tolerance	±0.20	±0.10	±0.10	±0.05	$^{+0.10}_{-0.00}$	±0.05	±0.05	±0.20	±0.05	±0.10	±0.10	±0.10	±0.05



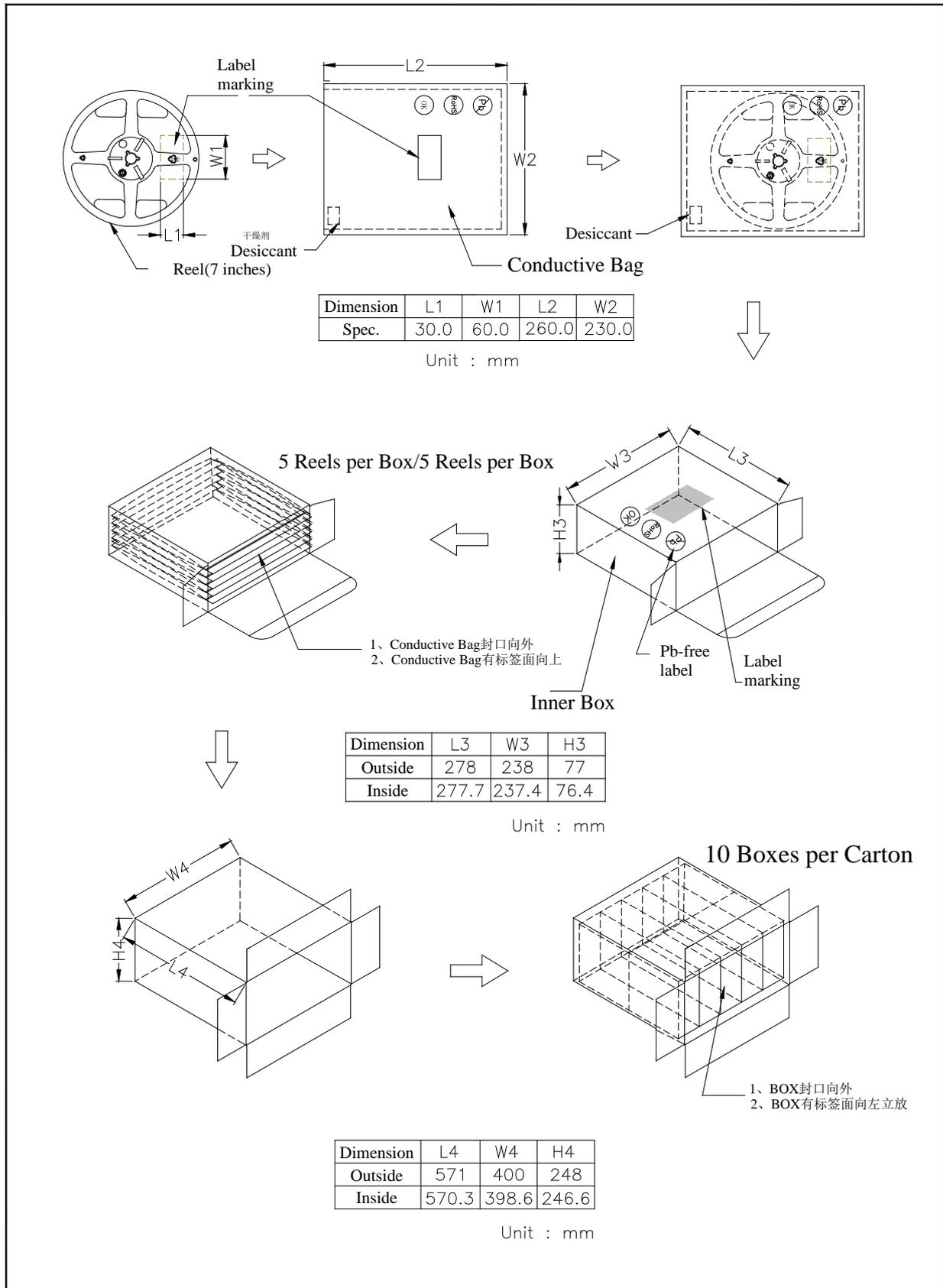
● Package Dimensions of Reel



◆ Typical Electro-Optical Characteristic Curves



◆ Packing and Shipping Instruction



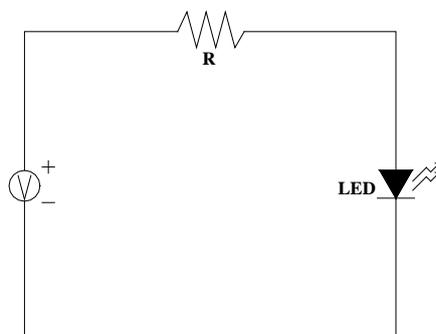
◆ Descriptions :

- 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°C ± 5°C ; 10 ± 1 sec	2 times	30 pcs	0 / 1
2	Solderbility Test ※	TEMP : 235°C ± 5°C ; 3 ± 1 sec	1 time	5 pcs	0 / 1
3	Temperature Cycle	H : +85°C 30min. ∩ 5min. L : -40°C 30min.	100 cycles	20 pcs	0 / 1
4	Thermal Shock	H : +85°C 5min. ∩ L : -40°C 5min.	50 cycles	20 pcs	0 / 1
5	High Temperature Storage	TEMP : 85°C	1000 hrs	20 pcs	0 / 1
6	Low Temperature Storage	TEMP : -40°C	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°C / 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%			
※ Solderbility 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 :

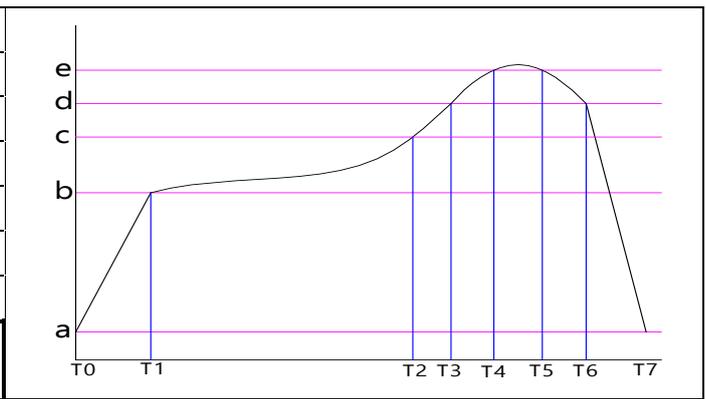
- Overdrive current proof

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°C ~ 30°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°C±5°C for 15hrs.

◆ **Reflow Temp. / Time :**

TEMP (°C)		TIME (sec)	
a	25	T0~T1	5°C/sec max
b	150	T1~T2	90~130
c	200	T2~T3	5°C/sec max
d	230	T3~T6	60~90
e	260	T4~T5	10±1
		T6~T7	-6°C/sec max
MSL level		Level 4	



◆ **Hand Soldering Iron :**

- Temperature at tip of iron : 400°C Max. (35W Max.)
- Soldering time : 3 ±1sec.

Model NO : SP0805B-RN

Luminous Intensity BIN Limits

Test condition : @20mA		
BIN Code	I_{Vmin} (mcd)	I_{Vmax} (mcd)
J1	45	57
J2	57	72
K1	72	90
K2	90	115
L1	115	145

◆ Dominant Wavelength BIN Limits

Test condition : @20mA		
BIN Code	λ_{Dmin}	λ_{Dmax}
1	616.5	621
2	621	625.5

◆ Forward Voltage BIN Limits

Test condition : @20mA		
BIN Code	V_{Fmin} (v)	V_{Fmax} (v)
4	1.8	1.9
5	1.9	2.0
6	2.0	2.1

◆ Label Marking

Product NO :	(Model NO)
Lot NO :	
Quantity :	(Seal/Date) pcs
Q.C. :	BIN
Date :	(Date of Produce)