

## XI3030P 1W Series



### Features

- Top view white LED
- High luminous intensity output
- Typical Viewing Angle:120°
- Pb-free
- RoHS compliant

### Description

The Everlight XI3030P package has high efficacy, mid power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting applications.

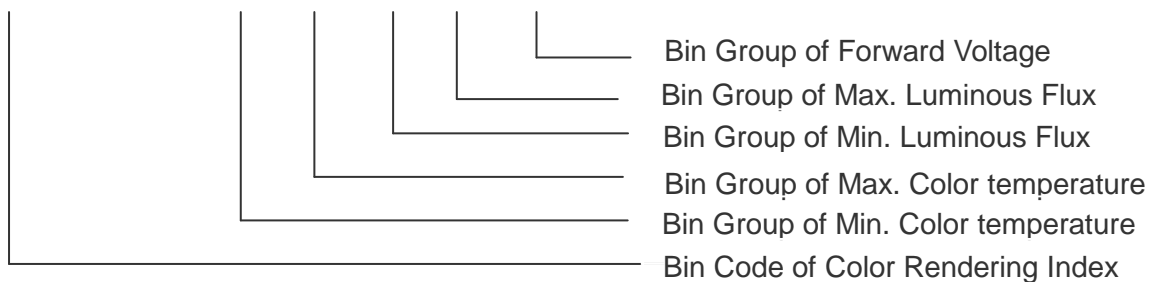
### Applications

- General lighting
- Decorative and Entertainment Lighting
- Indicators
- Illumination

## Product Nomenclature

The product name is designated as below:

**XI3030P/ XK4C -H XX XX XX XX XX Z15/ 2N**



### Table of Color Rendering Index

Symbol	Description
M	CRI(Min.) : 60
N	CRI(Min.) : 65
L	CRI(Min.) : 70
Q	CRI(Min.) : 75
K	CRI(Min.) : 80
P	CRI(Min.) : 85
H	CRI(Min.) : 90

**Notes:**

1. Tolerance of Color Rendering Index:  $\pm 2$

## Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA)	$I_F$	240	mA
Thermal Resistance	$R_{th}$	15	°C/W
Max. Junction Temperature	$T_J$	120	°C
Operating Temperature	$T_{Opr}$	-40 ~ +85	°C
Storage Temperature	$T_{Stg}$	-40 ~ +100	°C
Max. Soldering Temperature	$T_{Sol}$	260	°C
Max. Allowable Reflow Cycles	n/a	2	cycles

**Notes:**

1. Duty cycle = 1/10@1KHZ

EVERLIGHT

## PN of the XI3030P 1W Series: White LEDs(CRI>70)



Order Code of XI3030P	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Current (mA)	CRI (Min.)
XI3030P/LK4C-H2727S3S758701Z15/2N	120	126	2700K	5.8-7.0	150	70
XI3030P/LK4C-H3030S3S758701Z15/2N	125	130	3000K	5.8-7.0	150	70
XI3030P/LK4C-H3535S3S758701Z15/2N	125	132	3500K	5.8-7.0	150	70
XI3030P/LK4C-H4040S3S758701Z15/2N	125	132	4000K	5.8-7.0	150	70
XI3030P/LK4C-H5050S4S858701Z15/2N	130	136	5000K	5.8-7.0	150	70
XI3030P/LK4C-H5757S4S858701Z15/2N	130	138	5700K	5.8-7.0	150	70
XI3030P/LK4C-H6565S4S858701Z15/2N	130	135	6500K	5.8-7.0	150	70

**Notes:**

1. Luminous flux measurement tolerance:  $\pm 10\%$ .
2. The data of luminous flux measured at thermal pad=25°C
3. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.
4. The CRI value is based on the Everlight testing instrument.
5. CRI measurement tolerance:  $\pm 2$ .

## PN of the XI3030P 1W Series: White LEDs(CRI>80)



Order Code of XI3030P	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Current (mA)	CRI (Min.)
XI3030P/KK4C-H2727S3S758701Z15/2N	120	125	2700K	5.8~7.0	150	80
XI3030P/KK4C-H3030S3S758701Z15/2N	125	136	3000K	5.8~7.0	150	80
XI3030P/KK4C-H3535S3S758701Z15/2N	125	136	3500K	5.8~7.0	150	80
XI3030P/KK4C-H4040S3S758701Z15/2N	125	136	4000K	5.8~7.0	150	80
XI3030P/KK4C-H5050S4S858701Z15/2N	130	139	5000K	5.8~7.0	150	80
XI3030P/KK4C-H5757S4S858701Z15/2N	130	139	5700K	5.8~7.0	150	80
XI3030P/KK4C-H6565S4S858701Z15/2N	130	139	6500K	5.8~7.0	150	80

**Notes:**

6. Luminous flux measurement tolerance:  $\pm 10\%$ .
7. The data of luminous flux measured at thermal pad= $25^{\circ}\text{C}$
8. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.
9. The CRI value is based on the Everlight testing instrument.
10. CRI measurement tolerance:  $\pm 2$ .

## PN of the XI3030P 1W Series: White LEDs(CRI>90)



Order Code of XI3030P	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Current (mA)	CRI (Min.)
XI3030P/HK4C-H2727R8S458701Z15/2N	90	95	2700K	5.8-7.0	150	90
XI3030P/HK4C-H3030R8S458701Z15/2N	95	98	3000K	5.8-7.0	150	90
XI3030P/HK4C-H3535R8S458701Z15/2N	95	99	3500K	5.8-7.0	150	90
XI3030P/HK4C-H4040R8S458701Z15/2N	95	99	4000K	5.8-7.0	150	90
XI3030P/HK4C-H5050S1S558701Z15/2N	100	107	5000K	5.8-7.0	150	90
XI3030P/HK4C-H5757S1S558701Z15/2N	100	108	5700K	5.8-7.0	150	90
XI3030P/HK4C-H6565S1S558701Z15/2N	100	107	6500K	5.8-7.0	150	90

**Notes:**

11. Luminous flux measurement tolerance:  $\pm 10\%$ .
12. The data of luminous flux measured at thermal pad= $25^{\circ}\text{C}$
13. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.
14. The CRI value is based on the Everlight testing instrument.
15. CRI measurement tolerance:  $\pm 2$ .

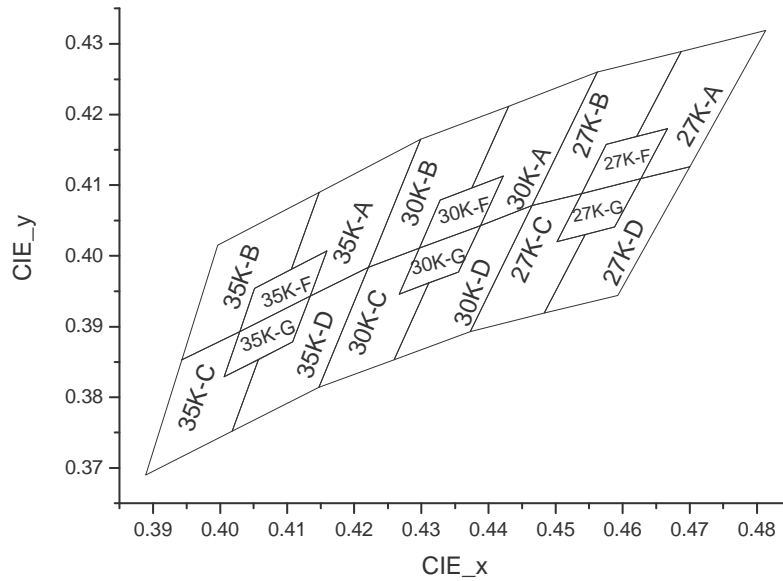
## Product Binning Luminous Flux Bins

Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
R	1	50.0	55.0
	2	55.0	60.0
	3	60.0	65.0
	4	65.0	70.0
	5	70.0	76.0
	6	76.0	83.0
	7	83.0	90.0
	8	90.0	100.0

Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
S	1	100.0	110.0
	2	110.0	120.0
	3	120.0	130.0
	4	130.0	140.0
	5	140.0	150.0
	6	150.0	160.0
	7	160.0	170.0
	8	170.0	180.0

EVERLIGHT

### Warm-White Bin Structure



### Warm-White Bin Coordinates

#### 2700K

Bin	CIE X	CIE Y
27K-A	0.4813	0.4319
	0.4687	0.4289
	0.4621	0.4169
	0.4667	0.4180
	0.4627	0.4109
	0.4700	0.4126
Reference Range: 2580~2700K		

Bin	CIE X	CIE Y
27K-B	0.4687	0.4289
	0.4562	0.4260
	0.4465	0.4071
	0.4539	0.4088
	0.4576	0.4158
	0.4621	0.4169
Reference Range: 2700~2870K		

Bin	CIE X	CIE Y
27K-C	0.4465	0.4071
	0.4373	0.3893
	0.4483	0.3919
	0.4544	0.4030
	0.4502	0.4020
	0.4539	0.4088
Reference Range: 2700~2870K		

Bin	CIE X	CIE Y
27K-D	0.4700	0.4126
	0.4627	0.4109
	0.4588	0.4041
	0.4544	0.4030
	0.4483	0.3919
	0.4593	0.3944
Reference Range: 2580~2700K		

Bin	CIE X	CIE Y
27K-F	0.4667	0.4180
	0.4576	0.4158
	0.4539	0.4088
	0.4627	0.4109
Reference Range: 2680~2790K		

Bin	CIE X	CIE Y
27K-G	0.4627	0.4109
	0.4539	0.4088
	0.4502	0.4020
	0.4588	0.4041
Reference Range: 2680~2790K		



**3000K**

Bin	CIE X	CIE Y
30K-A	0.4562	0.4260
	0.4430	0.4212
	0.4375	0.4096
	0.4422	0.4113
	0.4388	0.4043
	0.4465	0.4071
Reference Range: 2870~3000K		

Bin	CIE X	CIE Y
30K-B	0.4430	0.4212
	0.4299	0.4165
	0.4221	0.3984
	0.4297	0.4011
	0.4328	0.4079
	0.4375	0.4096
Reference Range: 3000~3220K		

Bin	CIE X	CIE Y
30K-C	0.4221	0.3984
	0.4147	0.3814
	0.4259	0.3853
	0.4311	0.3962
	0.4267	0.3946
	0.4297	0.4011
Reference Range: 3000~3220K		

Bin	CIE X	CIE Y
30K-D	0.4465	0.4071
	0.4388	0.4043
	0.4355	0.3977
	0.4311	0.3962
	0.4259	0.3853
	0.4373	0.3893
Reference Range: 2870~3000K		

Bin	CIE X	CIE Y
30K-F	0.4422	0.4113
	0.4328	0.4079
	0.4297	0.4011
	0.4388	0.4043
Reference Range: 2960~3150K		

Bin	CIE X	CIE Y
30K-G	0.4388	0.4043
	0.4297	0.4011
	0.4267	0.3946
	0.4355	0.3977
Reference Range: 2960~3150K		

**3500K**

Bin	CIE X	CIE Y
35K-A	0.4299	0.4165
	0.4148	0.4090
	0.4106	0.3981
	0.4159	0.4007
	0.4134	0.3943
	0.4221	0.3984
Reference Range: 3220~3500K		

Bin	CIE X	CIE Y
35K-B	0.4148	0.4090
	0.3996	0.4015
	0.3943	0.3853
	0.4029	0.3893
	0.4051	0.3954
	0.4106	0.3981
Reference Range: 3500~3710K		

Bin	CIE X	CIE Y
35K-C	0.3943	0.3853
	0.3889	0.3690
	0.4018	0.3752
	0.4057	0.3853
	0.4006	0.3829
	0.4029	0.3893
Reference Range: 3500~3710K		

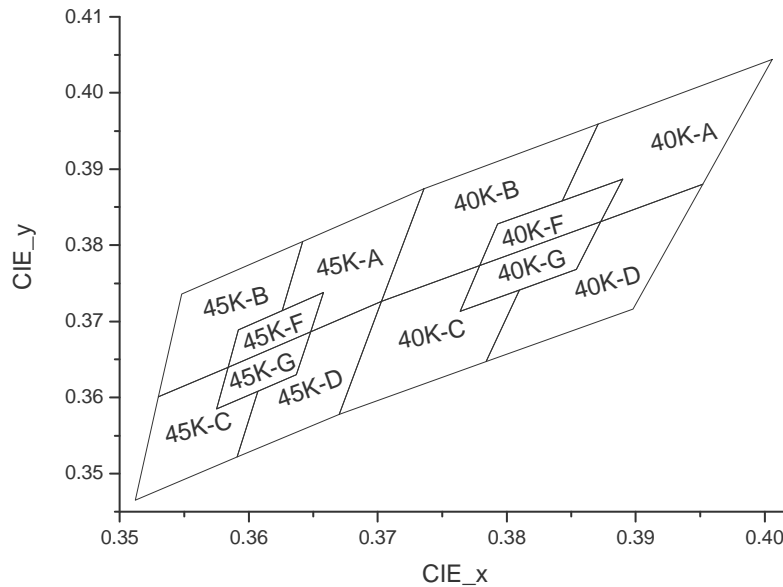
Bin	CIE X	CIE Y
35K-D	0.4221	0.3984
	0.4134	0.3943
	0.4108	0.3878
	0.4057	0.3853
	0.4018	0.3752
	0.4147	0.3814
Reference Range: 3220~3500K		

Bin	CIE X	CIE Y
35K-F	0.4159	0.4007
	0.4051	0.3954
	0.4029	0.3893
	0.4134	0.3943
Reference Range: 3370~3560K		

Bin	CIE X	CIE Y
35K-G	0.4134	0.3943
	0.4029	0.3893
	0.4006	0.3829
	0.4108	0.3878
Reference Range: 3370~3560K		

**Note:** Color coordinates measurement allowance : ±0.01.

### Neutral-White Bin Structure



### Neutral-White Bin Coordinates

**4000K**

Bin	CIE X	CIE Y
40K-A	0.4006	0.4044
	0.3871	0.3959
	0.3843	0.3858
	0.3890	0.3887
	0.3873	0.3831
	0.3952	0.3880
Reference Range: 3710~4000K		

Bin	CIE X	CIE Y
40K-B	0.3871	0.3959
	0.3736	0.3874
	0.3703	0.3726
	0.3779	0.3773
	0.3793	0.3828
	0.3843	0.3858
Reference Range: 4000~4260K		

Bin	CIE X	CIE Y
40K-C	0.3703	0.3726
	0.3670	0.3578
	0.3784	0.3647
	0.3810	0.3741
	0.3764	0.3713
	0.3779	0.3773
Reference Range: 4000~4260K		

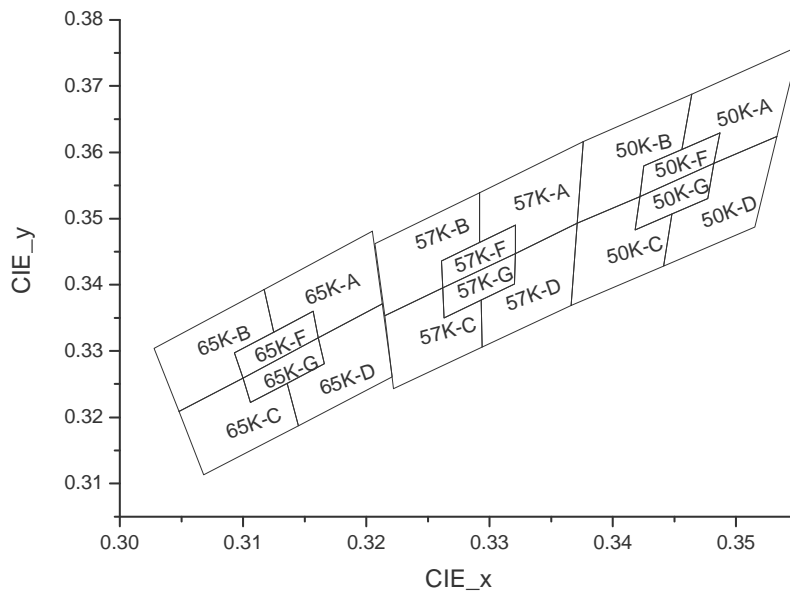
Bin	CIE X	CIE Y
40K-D	0.3952	0.3880
	0.3873	0.3831
	0.3854	0.3768
	0.3810	0.3741
	0.3784	0.3647
	0.3898	0.3716
Reference Range: 3710~4000K		

Bin	CIE X	CIE Y
40K-F	0.3890	0.3887
	0.3793	0.3828
	0.3779	0.3773
	0.3873	0.3831
Reference Range: 3870~4080K		

Bin	CIE X	CIE Y
40K-G	0.3873	0.3831
	0.3779	0.3773
	0.3764	0.3713
	0.3854	0.3768
Reference Range: 3870~4080K		

**Note:** Color coordinates measurement allowance :  $\pm 0.01$ .

### Cool-White Bin Structure



### Cool-White Bin Coordinates

#### 5000K

Bin	CIE X	CIE Y
50K-A	0.3551	0.3760
	0.3464	0.3688
	0.3456	0.3604
	0.3487	0.3629
	0.3482	0.3583
	0.3533	0.3624
Reference Range: 4745~5000K		

Bin	CIE X	CIE Y
50K-B	0.3464	0.3688
	0.3376	0.3616
	0.3371	0.3493
	0.3422	0.3533
	0.3425	0.3579
	0.3456	0.3604
Reference Range: 5000~5310K		

Bin	CIE X	CIE Y
50K-C	0.3371	0.3493
	0.3366	0.3369
	0.3441	0.3428
	0.3448	0.3507
	0.3418	0.3483
	0.3422	0.3533
Reference Range: 5000~5310K		

Bin	CIE X	CIE Y
50K-D	0.3533	0.3624
	0.3482	0.3583
	0.3477	0.3530
	0.3448	0.3507
	0.3441	0.3428
	0.3515	0.3487
Reference Range: 4745~5000K		

Bin	CIE X	CIE Y
50K-F	0.3487	0.3629
	0.3425	0.3579
	0.3422	0.3533
	0.3482	0.3583
Reference Range: 4900~5120K		

Bin	CIE X	CIE Y
50K-G	0.3482	0.3583
	0.3422	0.3533
	0.3418	0.3483
	0.3477	0.3530
Reference Range: 4900~5120K		

5700K

Bin	CIE X	CIE Y
57K-A	0.3376	0.3616
	0.3292	0.3539
	0.3292	0.3464
	0.3321	0.3490
	0.3321	0.3447
	0.3371	0.3493
Reference Range: 5310~5700K		

Bin	CIE X	CIE Y
57K-B	0.3292	0.3539
	0.3207	0.3462
	0.3215	0.3353
	0.3262	0.3395
	0.3261	0.3436
	0.3292	0.3464
Reference Range: 5700~6020K		

Bin	CIE X	CIE Y
57K-C	0.3215	0.3353
	0.3222	0.3243
	0.3294	0.3306
	0.3293	0.3377
	0.3263	0.3350
	0.3262	0.3395
Reference Range: 5700~6020K		

Bin	CIE X	CIE Y
57K-D	0.3371	0.3493
	0.3321	0.3447
	0.3320	0.3401
	0.3293	0.3377
	0.3294	0.3306
	0.3366	0.3369
Reference Range: 5310~5700K		

Bin	CIE X	CIE Y
57K-F	0.3321	0.3490
	0.3261	0.3436
	0.3262	0.3395
	0.3321	0.3447
Reference Range: 5510~5780K		

Bin	CIE X	CIE Y
57K-G	0.3321	0.3447
	0.3262	0.3395
	0.3263	0.3350
	0.3320	0.3401
Reference Range: 5510~5780K		

6500K

Bin	CIE X	CIE Y
65K-A	0.3205	0.3481
	0.3117	0.3393
	0.3125	0.3328
	0.3157	0.3360
	0.3161	0.3320
	0.3213	0.3371
Reference Range: 6020~6500K		

Bin	CIE X	CIE Y
65K-B	0.3117	0.3393
	0.3028	0.3304
	0.3048	0.3209
	0.3100	0.3259
	0.3093	0.3297
	0.3125	0.3328
Reference Range: 6500~7050K		

Bin	CIE X	CIE Y
65K-C	0.3048	0.3209
	0.3068	0.3113
	0.3145	0.3187
	0.3136	0.3251
	0.3106	0.3222
	0.3100	0.3259
Reference Range: 6500~7050K		

Bin	CIE X	CIE Y
65K-D	0.3213	0.3371
	0.3161	0.3320
	0.3166	0.3281
	0.3136	0.3251
	0.3145	0.3187
	0.3221	0.3261
Reference Range: 6020~6500K		

Bin	CIE X	CIE Y
65K-F	0.3157	0.3360
	0.3093	0.3297
	0.3100	0.3259
	0.3161	0.3320
Reference Range: 6300~6690K		

Bin	CIE X	CIE Y
65K-G	0.3161	0.3320
	0.3100	0.3259
	0.3106	0.3222
	0.3166	0.3281
Reference Range: 6300~6690K		

Note: Color coordinates measurement allowance : ±0.01.

### Forward Voltage Bins

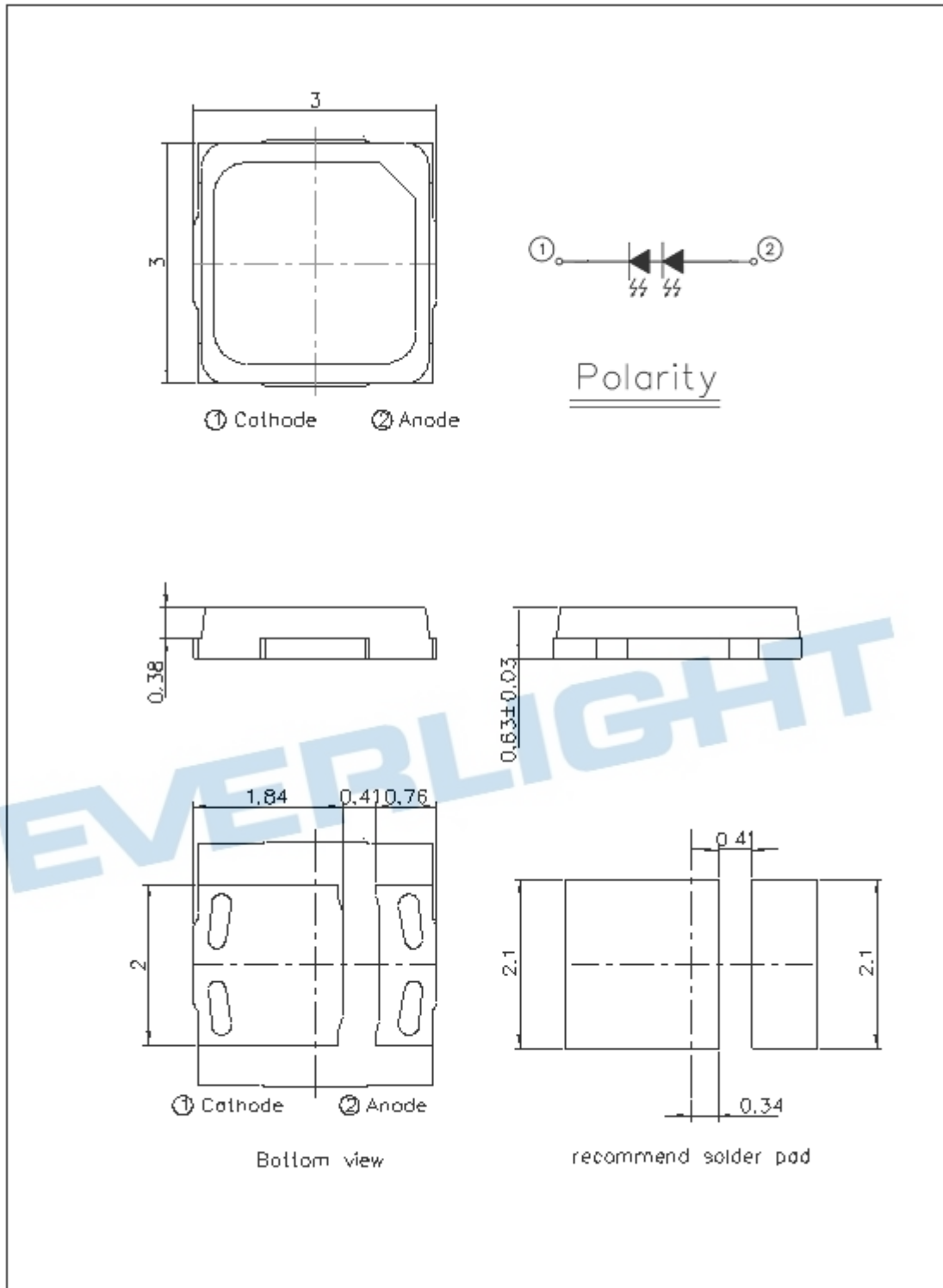
Bin		Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
S2	5#8	5.80	5.90
	5#9	5.90	6.00
	6#0	6.00	6.10
	6#1	6.10	6.20
	6#2	6.20	6.30
	6#3	6.30	6.40
	6#4	6.40	6.50
	6#5	6.50	6.60
	6#6	6.60	6.70
	6#7	6.70	6.80
	6#8	6.80	6.90
6#9	6.90	7.00	

**Notes:**

1. Forward voltage measurement tolerance:  $\pm 2\%$
2. Forward voltage bins are defined at  $I_f=150\text{mA}$  operation.

EVERLIGHT

## Mechanical Dimension

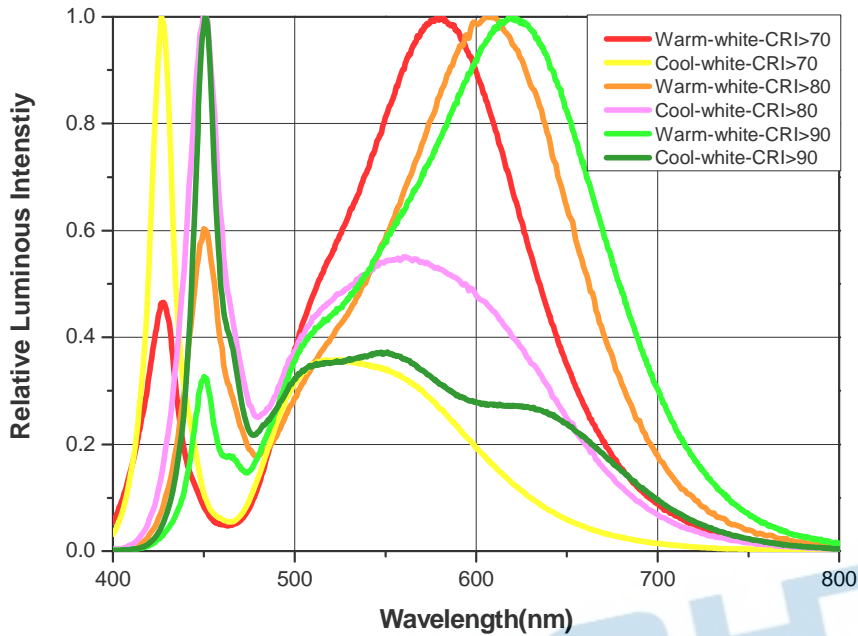


### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.2\text{mm}$ .
3. The thermal pad is electrically unity from the Anode and contact pads.
4. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

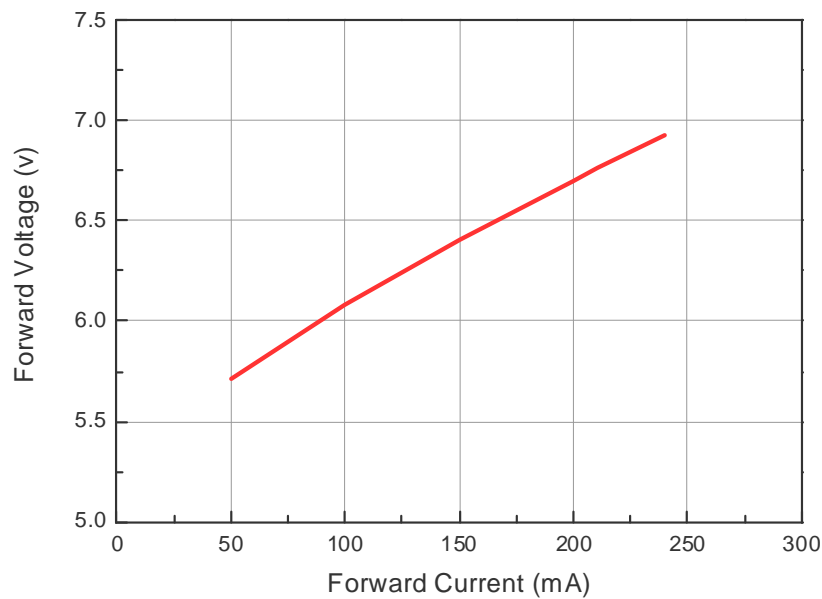
## Wavelength Characteristics

Relative Spectral Distribution  
@ Solder Pad Temperature = 25°C

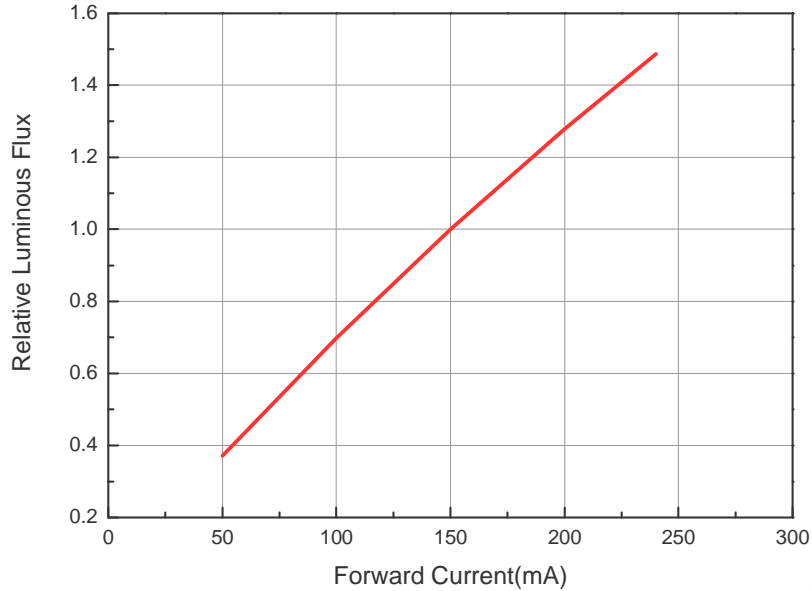


## Typical Electrical Characteristics

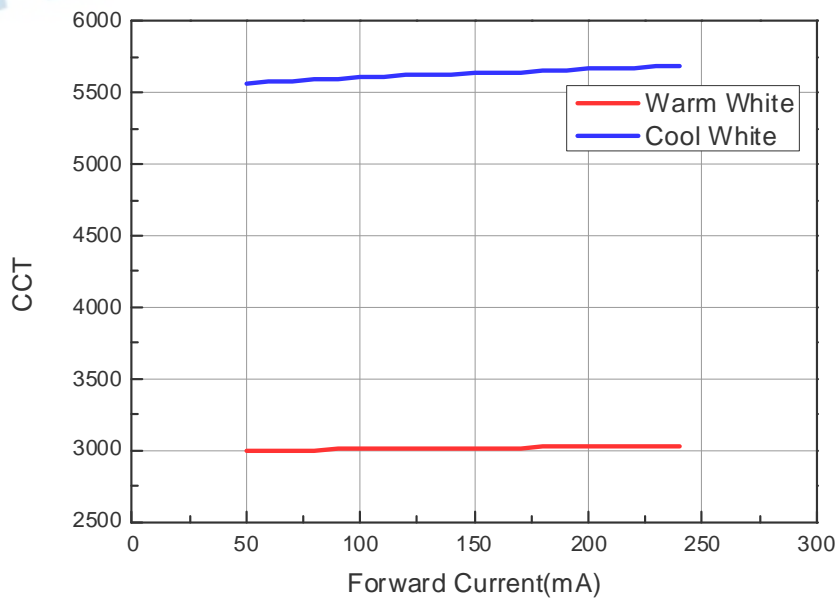
@ Solder Pad Temperature = 25°C



## Typical Relative Luminous Flux vs. Forward Current @ Solder Pad Temperature = 25°C

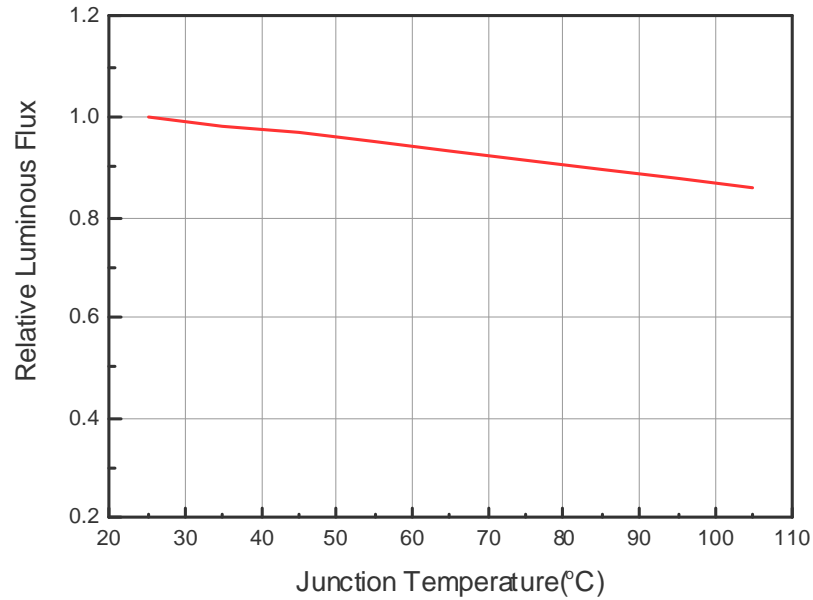


## Typical Wavelength & Color Shift Characteristics vs. Forward Current @ Solder Pad Temperature = 25°C

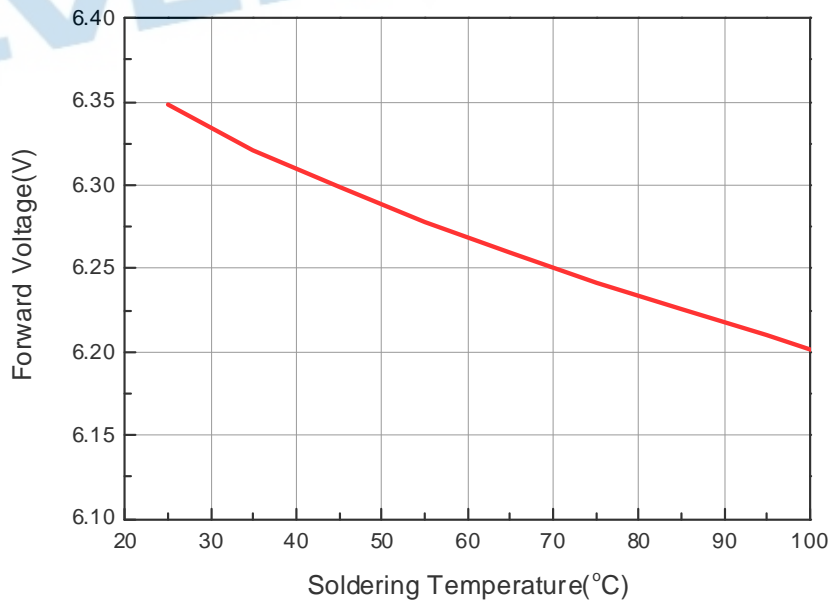




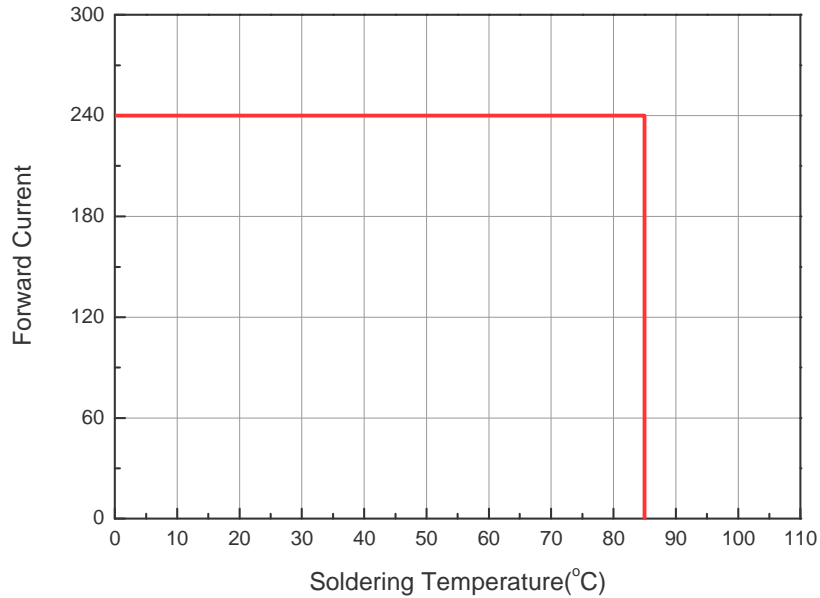
### Relative Luminous Flux vs. Junction Temperature @Forward Current = 150mA



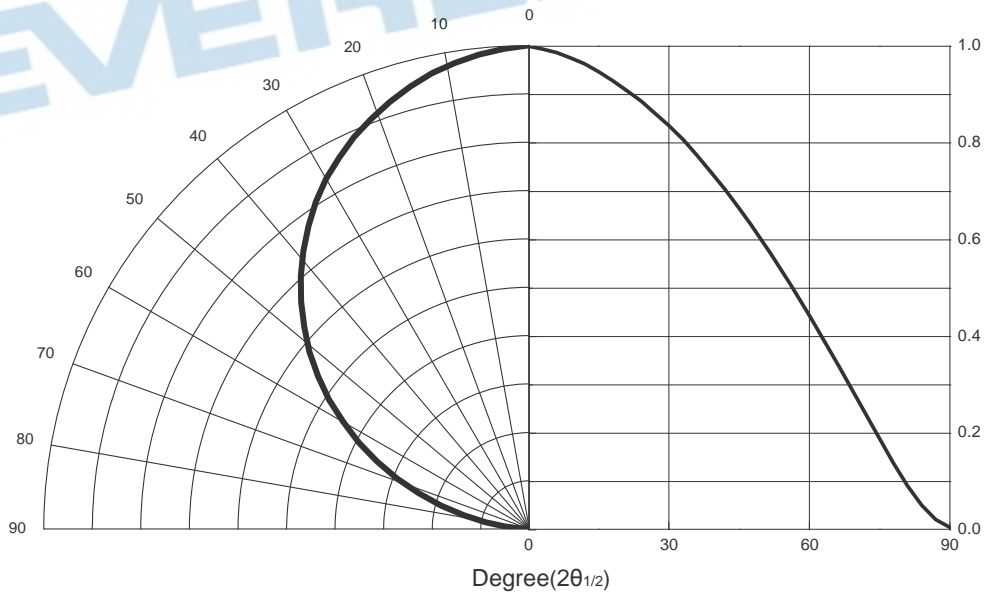
### Forward Voltage vs. Soldering Temperature @ Forward Current = 150mA



### Forward Current Derating Curve @ Junction Temperature <120°C



### Typical Radiation Patterns Typical Diagram Characteristics of Radiation



**Notes:**

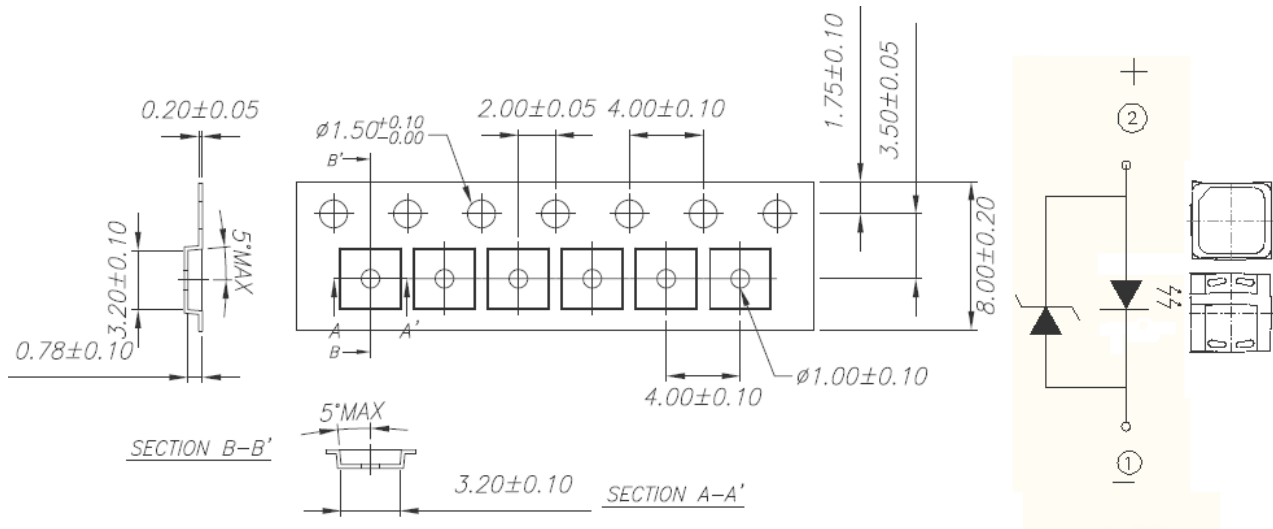
1. 2θ<sub>1/2</sub> is the off XIs angle from lamp centerline where the luminous intensity is 1/2 of the peak value.

View angle tolerance is ± 5° .

## Emitter Tape Packaging

Carrier Tape Dimensions as the following:

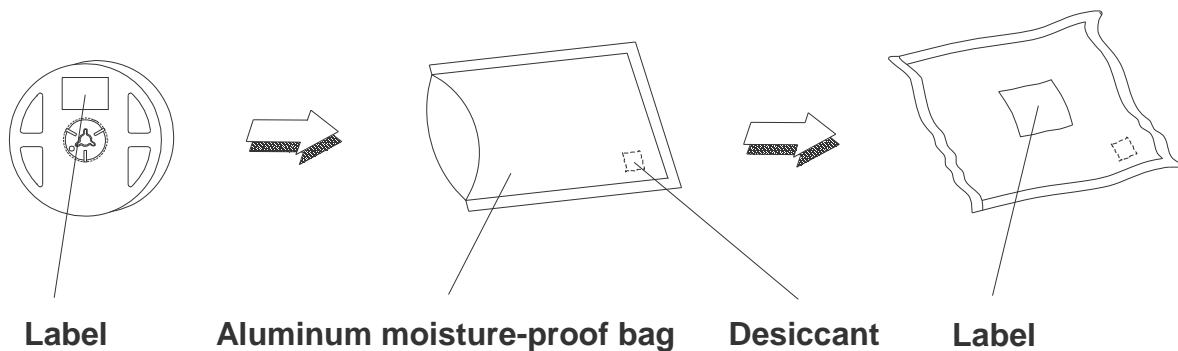
Reel:2000pcs



### Notes:

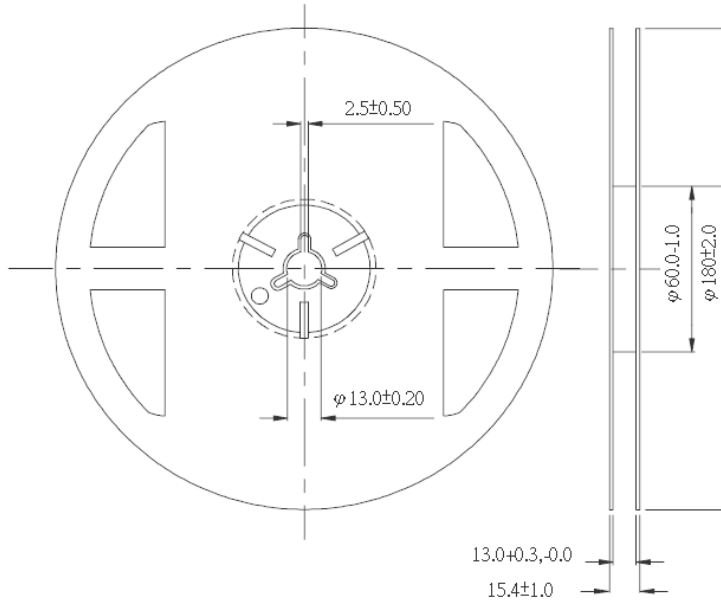
1. Tolerance unless mentioned is  $\pm 0.1$ mm; Unit = mm
2. Minimum packing amount is 250/500/1000/2000 pcs per reel

### Moisture Resistant Packaging



## Emitter Reel Packaging

### Reel Dimensions



#### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.1\text{mm}$ .

## Product Labeling

### Label Explanation

CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place

RoHS EVERLIGHT 5

CPN: XXXXXXXXXXXXXXXXXXXX  
 XXXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX  
 P/N: XXXXXXXXXXXX  
 XXXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX  
 LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX  
 QTY: 0123456789 HUE: XXXXXXXXXXXX  
 CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX  
 REFERENCE: BTPYMMDDXXXXXX  
 MADE IN XXXXXX



## Precautions for Use

### 1. Over-current-proof

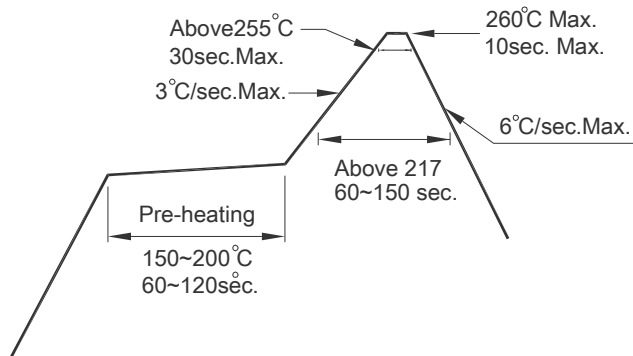
Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

### 2. Assemblies

Do not stack assemblies containing Everlight XI3030 LEDs to prevent damage to the optical surface of LEDs. Forces applied to the optical surface may result in the surface being damaged.

### 3. Soldering Condition

#### 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

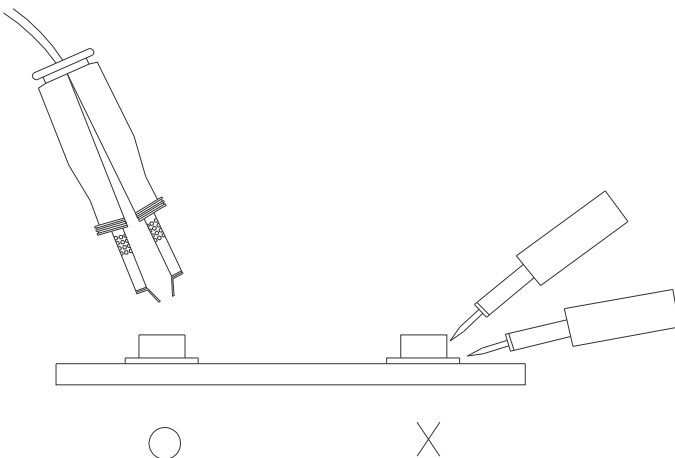
3.4 After soldering, do not warp the circuit board.

### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

### 5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



## Storage Conditions

- Before the package is opened. The LEDs should be stored at 30°C or less and 90%RH or less after being shipped from EVERLIGHT and the storage life limits are 12 months.
- If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 60±5°C for 24 hours.

## DISCLAIMER

- EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
- The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
- The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
- When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
- These specification sheets include materials protected under copyright of EVERLIGHT. Reproduction in any form is prohibited without obtaining EVERLIGHT's prior consent.
- This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized EVERLIGHT sales agent for special application request.

## Revision History

Current version: Jul.12.2017  
Issue No: DHE-0003126  
Version: 3  
Created by: Vicky Hsu

Page	Subjects (major change in previous version)	Date of change
22	Add a DISCLAIMER	2017/07/12

EVERLIGHT