

EMC ■ HIGH POWER LED

GXI3030P/KK6C-MXXXXXXXXX26292U6/2T



Features

- Top view white LED
- High luminous intensity output
- Typical Viewing Angle:120°
- Pb-free
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br<900ppm,Cl<900ppm,Br+Cl<1500ppm)

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 Number Explanation

XI3030P/ XK6C –MXX XX XX XX XXXX 2U6/2T

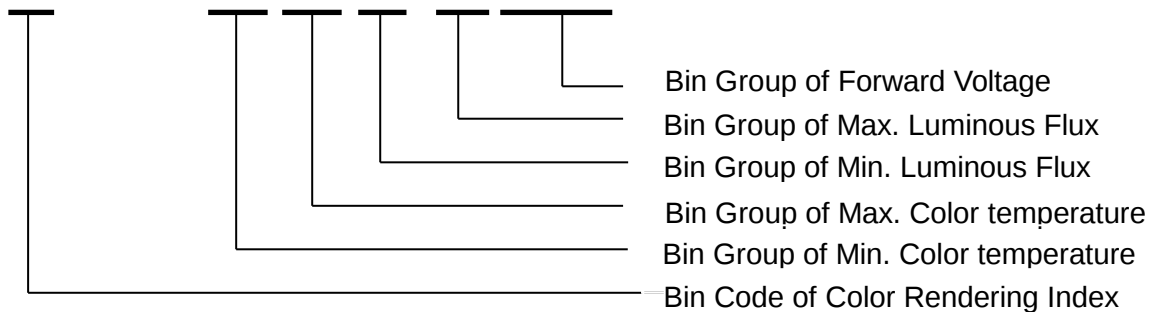


Table of Color Rendering Index

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: ± 2

Table of Forward Current Index

Symbol	Description
U6	I_F : 65mA

Example:

GX13030P/KK6C-M6565X4Y026292U6/2T

CRI	80(Min.)
CCT	6500K
Flux	34~40lm
V_F	2.6~2.9V
I_F	65mA

Mass Production List

Product	CRI Min. (1)	CCT(K)	Φ(lm) Min. (2)	Φ(lm) Max. (2)
GXI3030P/KK6C-M2020V4X026292U6/2T	80	2000K	24	30
GXI3030P/KK6C-M2727X2X826292U6/2T	80	2700K	32	38
GXI3030P/KK6C-M3030X3X926292U6/2T	80	3000K	33	39
GXI3030P/KK6C-M3535X3X926292U6/2T	80	3500K	33	39
GXI3030P/KK6C-M5050X5Y126292U6/2T	80	5000K	35	41
GXI3030P/KK6C-M6262X4Y026292U6/2T	80	6200K	34	40
GXI3030P/KK6C-M6565X4Y026292U6/2T	80	6500K	34	40

Notes:

1. Tolerance of Color Rendering Index: ± 2
2. Tolerance of Luminous flux: $\pm 10\%$.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Cool White Warm White	Water Clear

Absolute Maximum Ratings (T_{Soldering}=25°C)

Parameter	Symbol	Rating	Unit
Forward Current	I _F	350	mA
Peak Forward Current (Duty 1/10 @10ms)	I _{FP}	700	mA
Power Dissipation	P _d	1015	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Thermal Resistance (Junction / Soldering point)	R _{th J-S}	13	°C/W
Junction Temperature	T _j	115	°C
Soldering Temperature	T _{sol}	Reflow Soldering: 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

Note:

The products are sensitive to static electricity and must be carefully taken when handling products

Electro-Optical Characteristics (T_{Soldering}=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Flux ₍₁₎	Φ	24	-----	41	lm	I _F =65mA
Forward Voltage ₍₂₎	V _F	2.6	-----	2.9	V	I _F =65mA
Color Rendering Index ₍₃₎	Ra	80	-----	-----		I _F =65mA
Efficacy ₍₁₎₍₄₎	-----	-----	208	----	lm/W	I _F =65mA
Viewing Angle	2θ _{1/2}	-----	120	-----	deg	I _F =65mA

Notes:

1. Tolerance of Luminous flux: ±10%.
2. Tolerance of Forward Voltage: ±2%
3. Tolerance of Color Rendering Index: ±2
4. Characteristics under the condition of 65mA and Cool-White at 5000k

Bin Range of Luminous Flux

2000K--- GX13030P/KK6C-M2020V4X026292U6/2T

Bin Code	Min.	Max.	Unit	Condition
T1	24	26	lm	I _F =65mA
T2	26	28		
T3	28	30		

2700K--- GX13030P/KK6C-M2727X2X826292U6/2T

Bin Code	Min.	Max.	Unit	Condition
T1	32	34	lm	I _F =65mA
T2	34	36		
T3	36	38		

3000K--- GX13030P/KK6C-M3030X3X926292U6/2T

Bin Code	Min.	Max.	Unit	Condition
T1	33	35	lm	I _F =65mA
T2	35	37		
T3	37	39		

3500K--- GX13030P/KK6C-M3535X3X926292U6/2T

Bin Code	Min.	Max.	Unit	Condition
T1	33	35	lm	I _F =65mA
T2	35	37		
T3	37	39		

5000K--- GX13030P/KK6C-M5050X5Y126292U6/2T

Bin Code	Min.	Max.	Unit	Condition
T1	35	37	lm	I _F =65mA
T2	37	39		
T3	39	41		

6200K--- GX13030P/KK6C-M6262X4Y026292U6/2T

Bin Code	Min.	Max.	Unit	Condition
T1	34	36	lm	I _F =65mA
T2	36	38		
T3	38	40		

6500K--- GXI3030P/KK6C-M6565X4Y026292U6/2T

Bin Code	Min.	Max.	Unit	Condition
T1	34	36	lm	I _F =65mA
T2	36	38		
T3	38	40		

Note:
Tolerance of Luminous flux: ±10%.

Bin Range of Forward Voltage

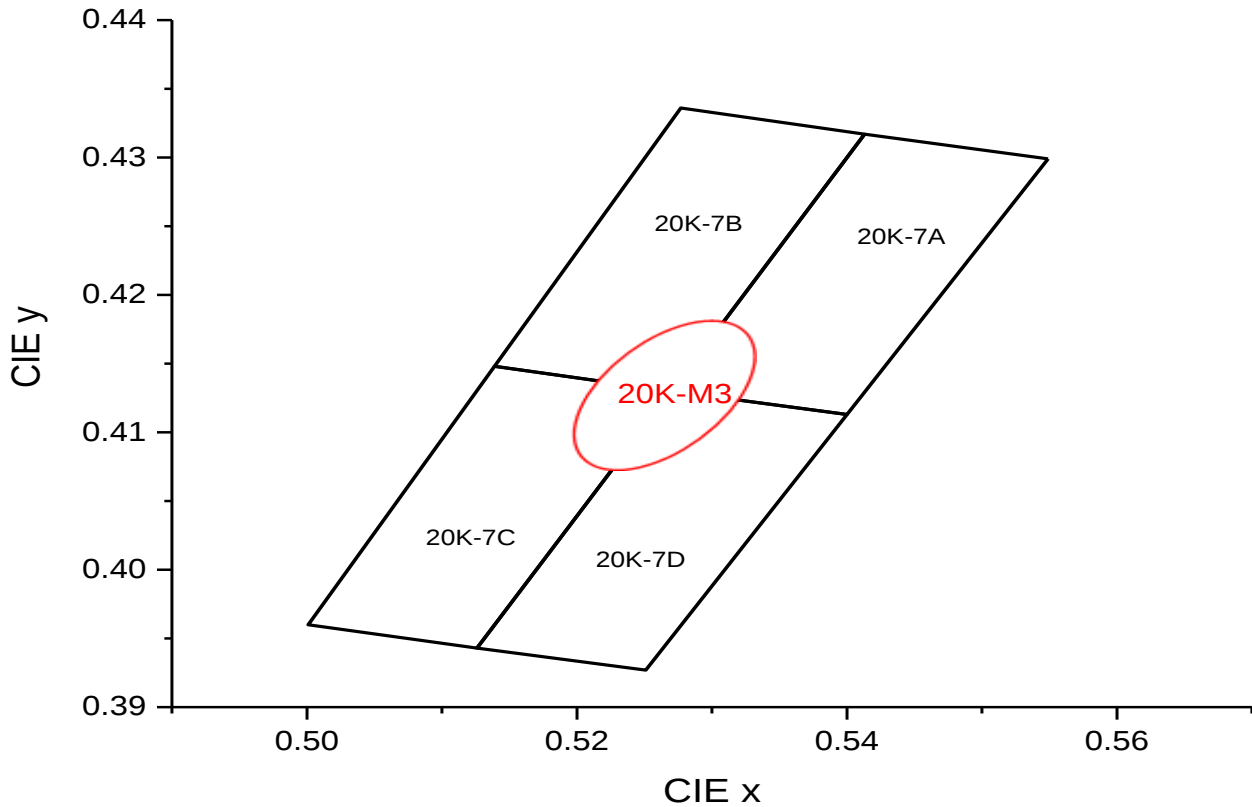
Group	Bin Code	Min.	Max.	Unit	Condition
2629	33	2.6	2.7	V	I _F =65mA
	34	2.7	2.8		
	35	2.8	2.9		

Notes:
Tolerance of Forward Voltage: ±2%.

Bin Code of Macadam 3 step

Step	CCT	Cx	Cy	a	b	theta
3	2000	0.5270	0.4130	0.00840	0.00440	43.56
	2700	0.4583	0.4104	0.00810	0.00420	49.70
	3000	0.4345	0.4033	0.00834	0.00408	50.22
	3500	0.4080	0.3919	0.00927	0.00414	51.00
	5000	0.3451	0.3559	0.00822	0.00354	64.12
	6200	0.3187	0.3345	0.00669	0.00285	64.57
	6500	0.3131	0.3290	0.00669	0.00285	64.57

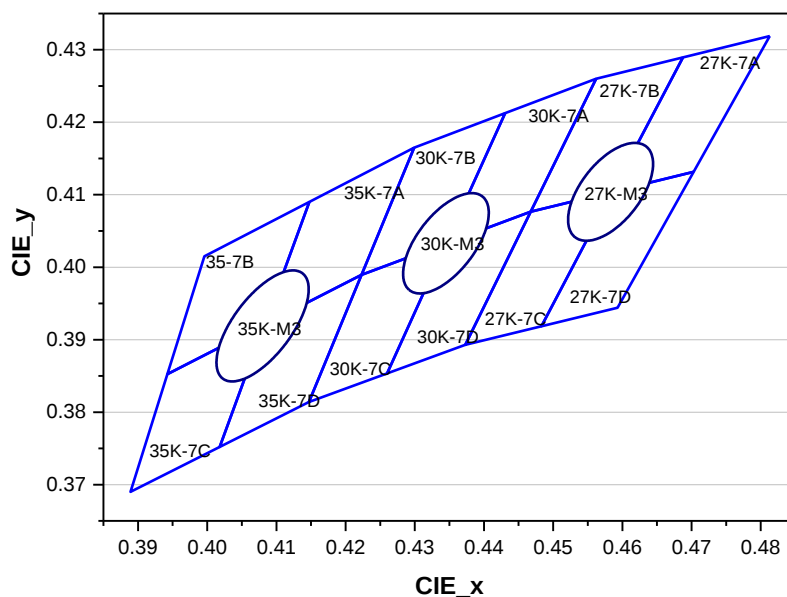
The C.I.E. 1931 Chromaticity Diagram



Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
2000K	20K-7A	0.5549	0.4299	20K-7D	0.54	0.4113
		0.5413	0.4317		0.5318	0.4124
		0.5324	0.42		0.5262	0.4054
		0.5374	0.4193		0.5216	0.4059
		0.5318	0.4124		0.5126	0.3943
		0.54	0.4113		0.5251	0.3927
	Reference Range: 1920K~2015K					
	20K-7B	0.5277	0.4317	20K-7C	0.5139	0.4148
		0.5413	0.4317		0.522	0.4137
		0.5324	0.42		0.5168	0.4067
		0.5273	0.4207		0.5216	0.4059
		0.522	0.4137		0.5126	0.3943
		0.5139	0.4148		0.5001	0.396
	Reference Range: 2015K~2055K					

The C.I.E. 1931 Chromaticity Diagram



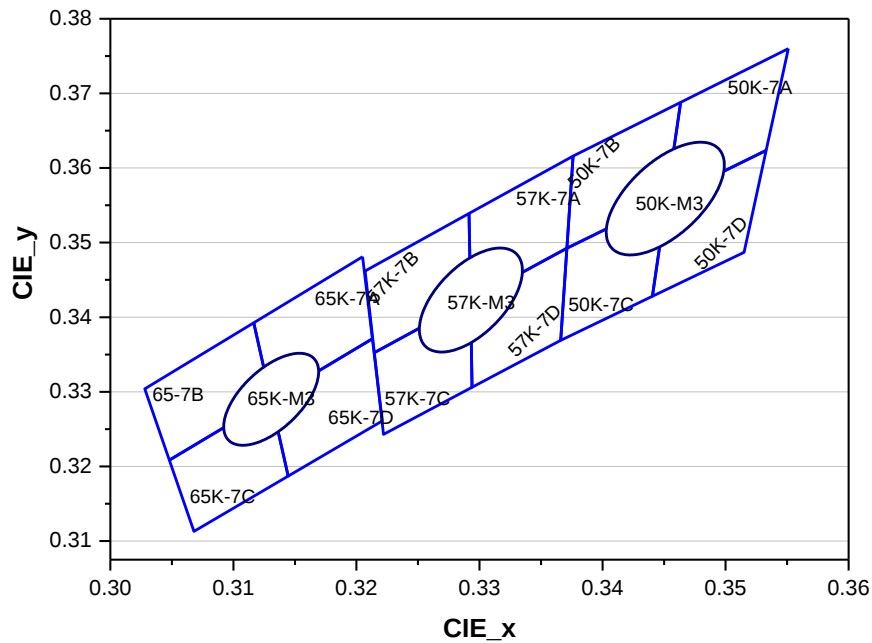
Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
2700K	27K-7A	0.4813	0.4319	27K-7D	0.4700	0.4126
		0.4687	0.4289		0.4627	0.4109
		0.4621	0.4169		0.4588	0.4041
		0.4667	0.4180		0.4544	0.4030
		0.4627	0.4109		0.4483	0.3919
		0.4700	0.4126		0.4593	0.3944
	Reference Range:2580K~2700K					
	27K-7B	0.4687	0.4289	27K-7C	0.4465	0.4071
		0.4562	0.4260		0.4373	0.3893
		0.4465	0.4071		0.4483	0.3919
		0.4539	0.4088		0.4544	0.4030
		0.4576	0.4158		0.4502	0.4020
		0.4621	0.4169		0.4539	0.4088
	Reference Range:2700K~2870K					

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
3000K	30K-7A	0.4562	0.4260	30K-7D	0.4465	0.4071
		0.4430	0.4212		0.4388	0.4043
		0.4375	0.4096		0.4355	0.3977
		0.4422	0.4113		0.4311	0.3962
		0.4388	0.4043		0.4259	0.3853
		0.4465	0.4071		0.4373	0.3893
	Reference Range:2870K~3000K					
	30K-7B	0.4430	0.4212	30K-7C	0.4221	0.3984
		0.4299	0.4165		0.4147	0.3814
		0.4221	0.3984		0.4259	0.3853
		0.4297	0.4011		0.4311	0.3962
		0.4328	0.4079		0.4267	0.3946
		0.4375	0.4096		0.4297	0.4011
	Reference Range:3000K~3220K					

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
3500K	35K-7A	0.4299	0.4165	35K-7D	0.4221	0.3984
		0.4148	0.4090		0.4134	0.3943
		0.4106	0.3981		0.4108	0.3878
		0.4159	0.4007		0.4057	0.3853
		0.4134	0.3943		0.4018	0.3752
		0.4221	0.3984		0.4147	0.3814
	Reference Range: 3220K~3500K					
	35K-7B	0.4148	0.4090	35K-7C	0.3943	0.3853
		0.3996	0.4015		0.3889	0.3690
		0.3943	0.3853		0.4018	0.3752
		0.4029	0.3893		0.4057	0.3853
		0.4051	0.3954		0.4006	0.3829
		0.4106	0.3981		0.4029	0.3893
	Reference Range:3360K~3550K					

The C.I.E. 1931 Chromaticity Diagram

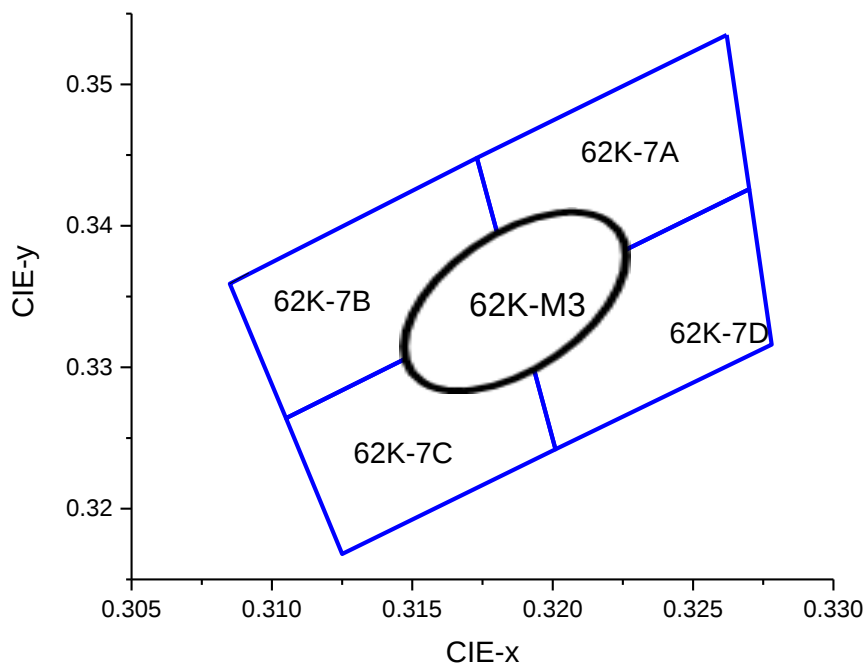


Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
5000K	50K-7A	0.3551	0.3760	50K-7D	0.3533	0.3624
		0.3464	0.3688		0.3482	0.3583
		0.3456	0.3604		0.3477	0.3530
		0.3487	0.3629		0.3448	0.3507
		0.3482	0.3583		0.3441	0.3428
		0.3533	0.3624		0.3515	0.3487
	Reference Range:4745K~5000K					
	50K-7B	0.3464	0.3688	50K-7C	0.3371	0.3493
		0.3376	0.3616		0.3366	0.3369
		0.3371	0.3493		0.3441	0.3428
		0.3422	0.3533		0.3448	0.3507
		0.3425	0.3579		0.3418	0.3483
		0.3456	0.3604		0.3422	0.3533
	Reference Range:5000K~5310K					

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
6500K	65K-7A	0.3205	0.3481	65K-7D	0.3213	0.3371
		0.3117	0.3393		0.3161	0.3320
		0.3125	0.3328		0.3166	0.3281
		0.3157	0.3360		0.3136	0.3251
		0.3161	0.3320		0.3145	0.3187
		0.3213	0.3371		0.3221	0.3261
	Reference Range:6020K~6500K					
	65K-7B	0.3117	0.3393	65K-7C	0.3048	0.3209
		0.3028	0.3304		0.3068	0.3113
		0.3048	0.3209		0.3145	0.3187
		0.3100	0.3259		0.3136	0.3251
		0.3093	0.3297		0.3106	0.3222
		0.3125	0.3328		0.31	0.3259
	Reference Range:6500K~7050K					

The C.I.E. 1931 Chromaticity Diagram



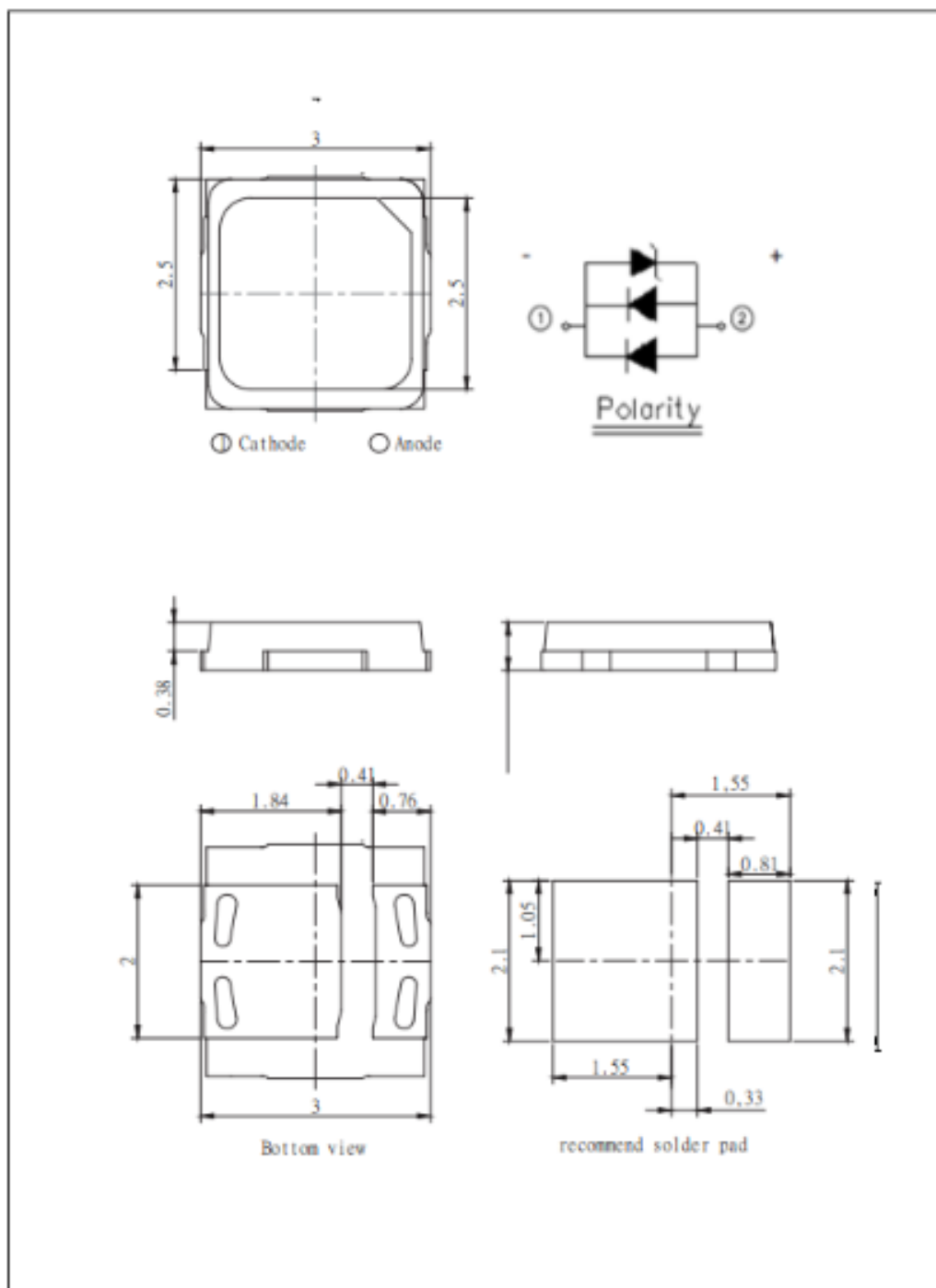
Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
6200K	62K-7A	0.3262	0.3535	62K-7D	0.327	0.3426
		0.3173	0.3448		0.3223	0.3379
		0.3181	0.3389		0.3226	0.3332
		0.3219	0.3426		0.3193	0.3301
		0.3223	0.3379		0.3201	0.3242
		0.327	0.3426		0.3278	0.3316
	Reference Range: 5716K~6167K					
	62K-7B	0.3173	0.3448	62K-7C	0.3193	0.3301
		0.3085	0.3359		0.316	0.3269
		0.3105	0.3264		0.3152	0.331
		0.3152	0.331		0.3105	0.3264
		0.3143	0.335		0.3125	0.3168
		0.3181	0.3389		0.3201	0.3242
	Reference Range: 6167K~6676K					

Note:

1. The value is based on driving current by 65mA.
2. Tolerance of Chromaticity Coordinates: ± 0.01 .

Mechanical Dimension



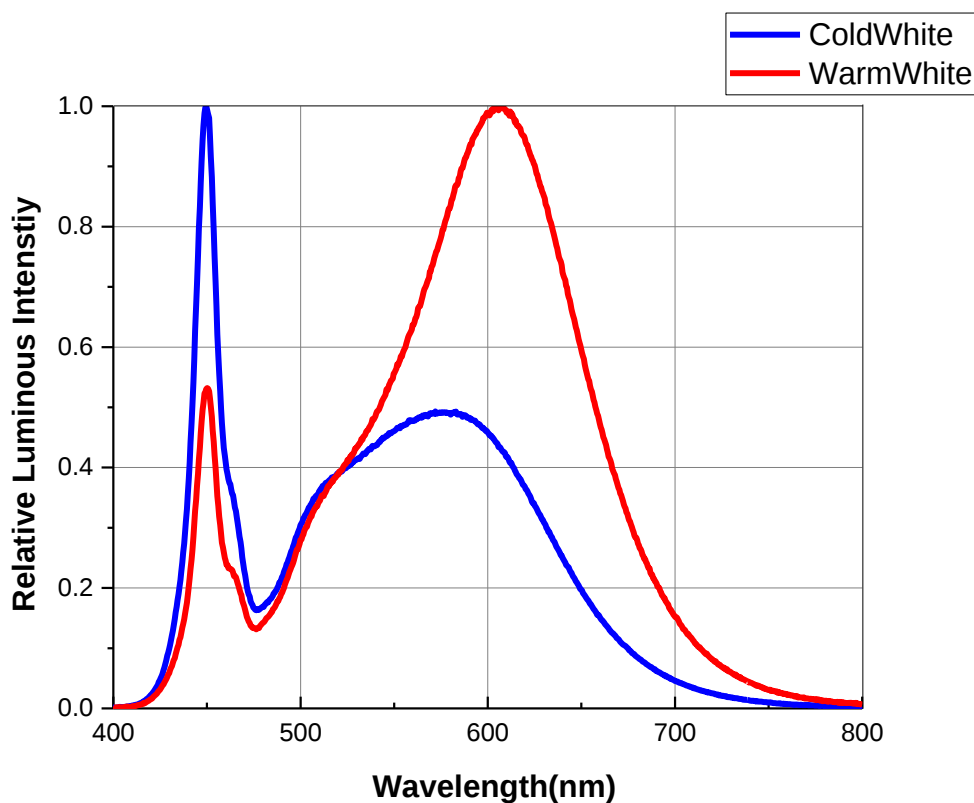
Notes:

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

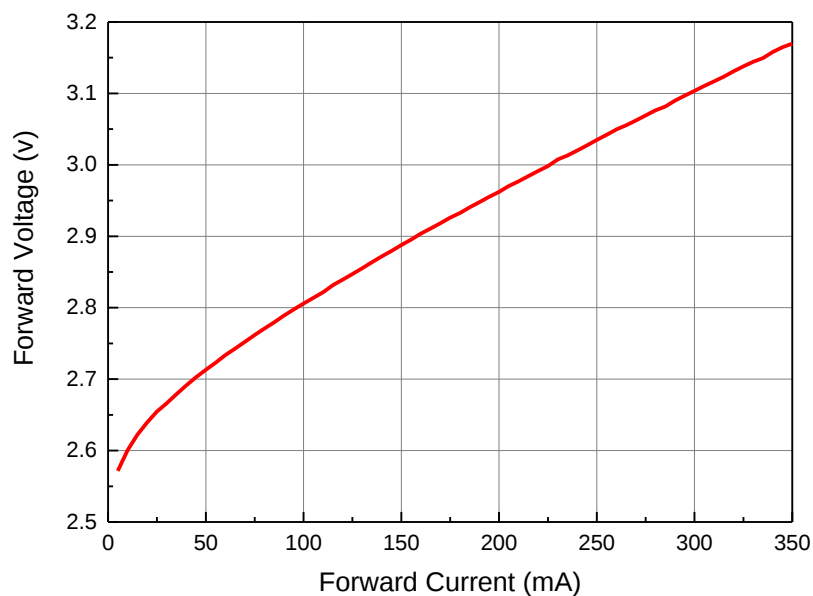
Relative Spectral Distribution

@ Soldering Pad Temperature = 25°C

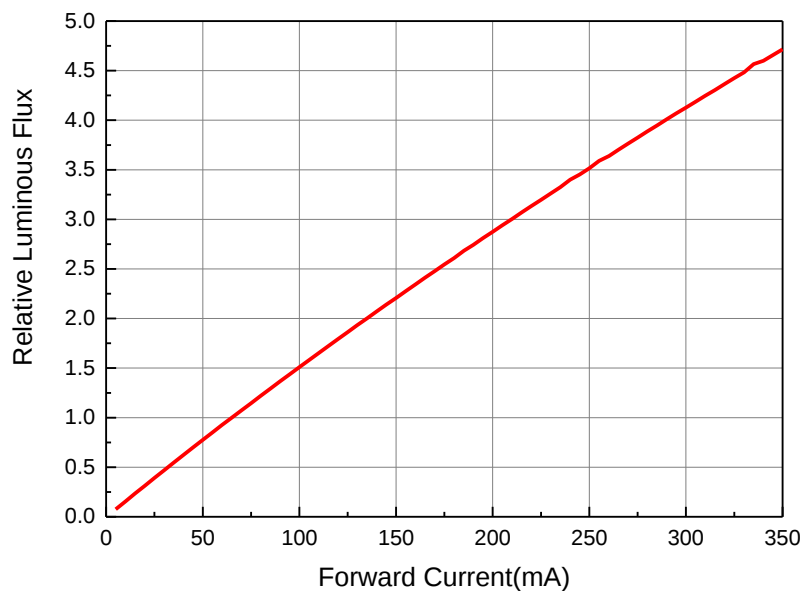


Typical Electrical Characteristics

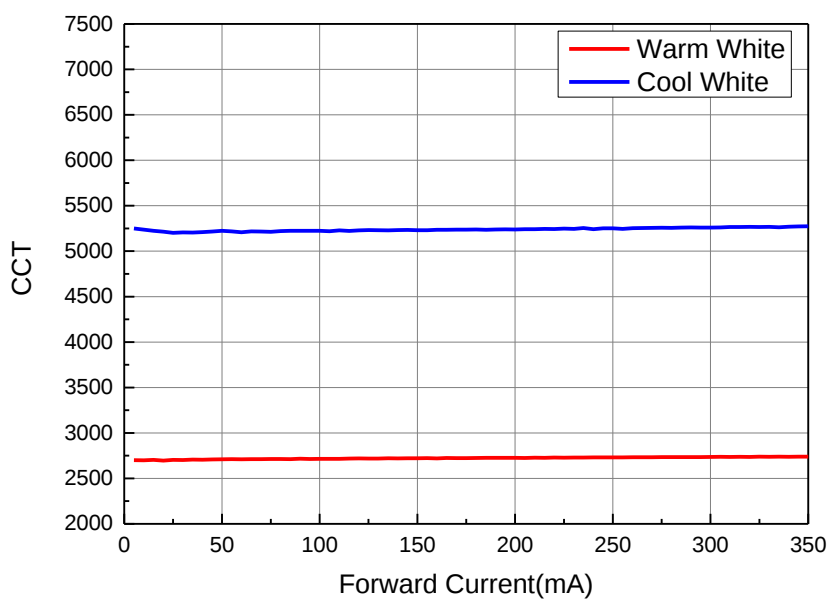
@ Soldering Pad Temperature = 25°C



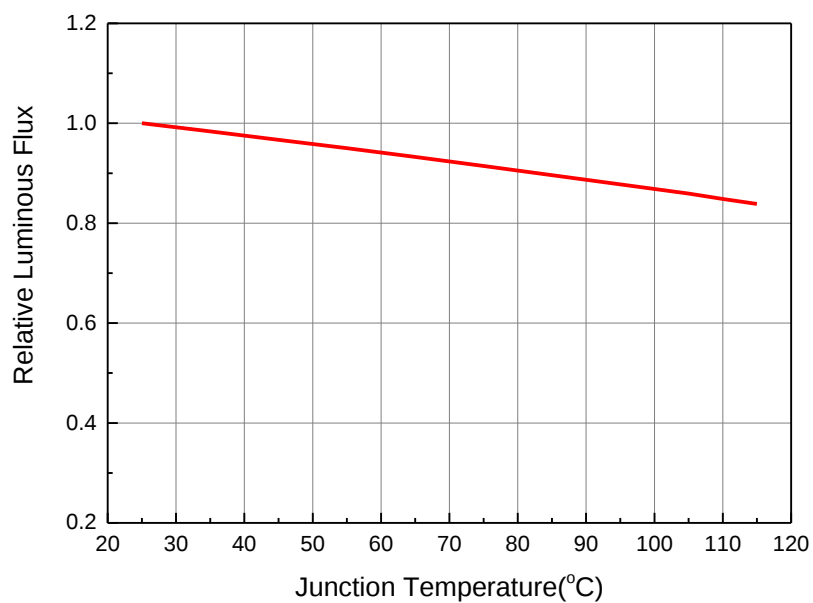
Typical Relative Luminous Flux vs. Forward Current @ Soldering Pad Temperature = 25°C



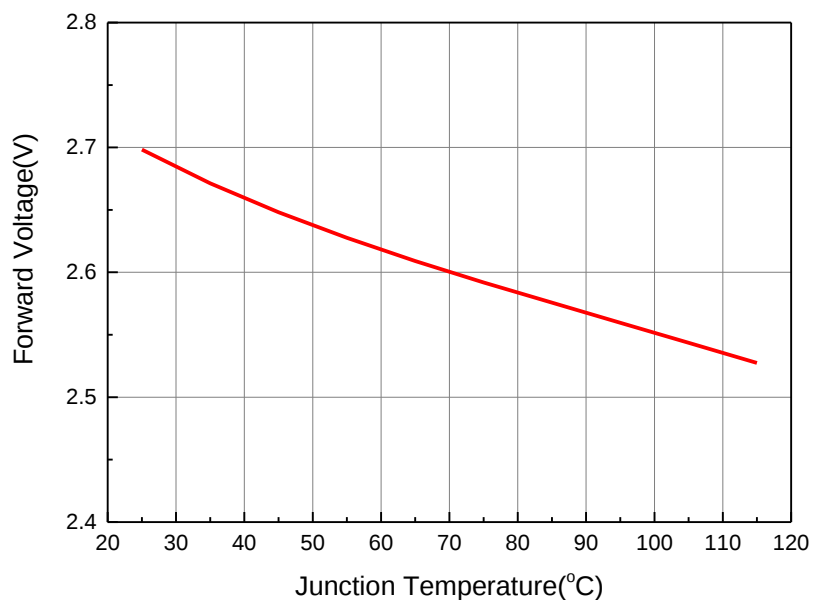
Typical Wavelength & Color Shift Characteristics vs. Forward Current @ Soldering Pad Temperature = 25°C



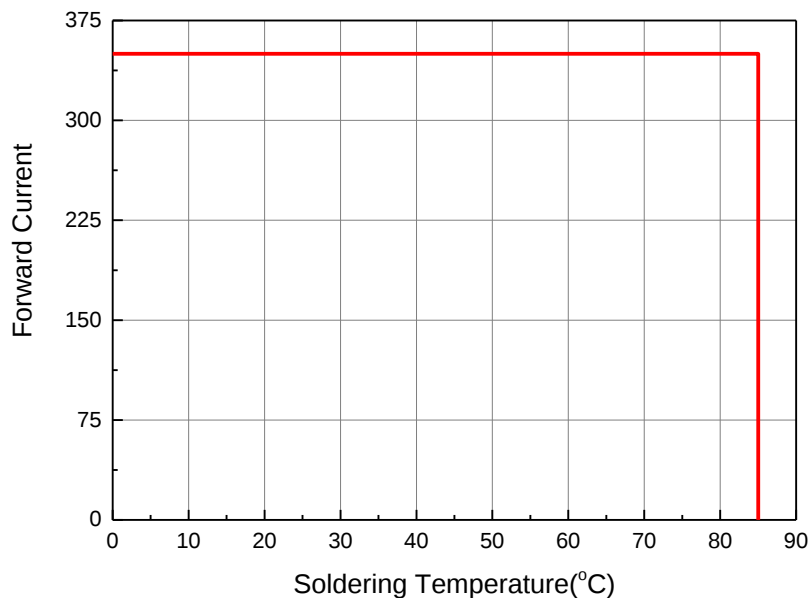
Relative Luminous Flux vs. Junction Temperature
@Forward Current = 65mA



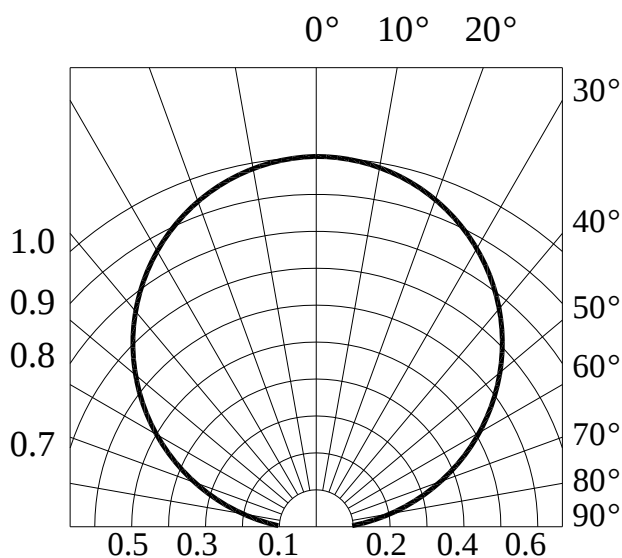
Forward Voltage vs. Junction Temperature
@ Forward Current = 65mA



Forward Current Derating Curve @ Junction Temperature <115°C



Typical Radiation Patterns Typical Diagram Characteristics of Radiation



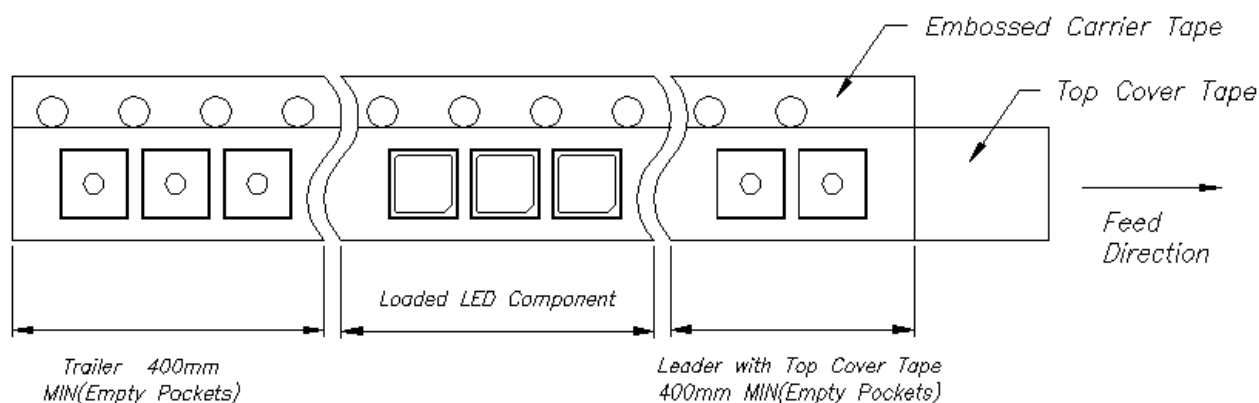
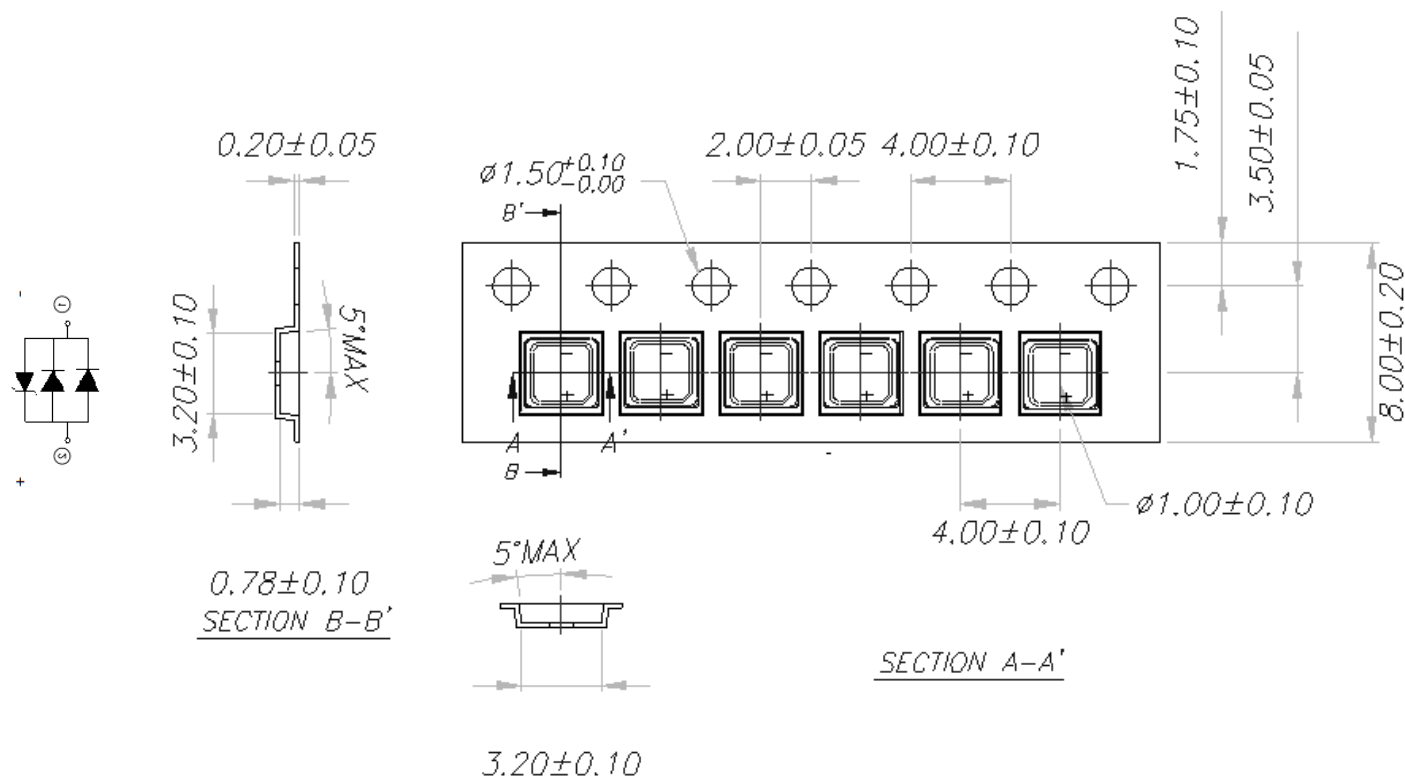
Notes:

1. $2\theta_{1/2}$ is the off XIs angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is $\pm 5^\circ$

Emitter Tape Packaging

Carrier Tape Dimensions as the following:

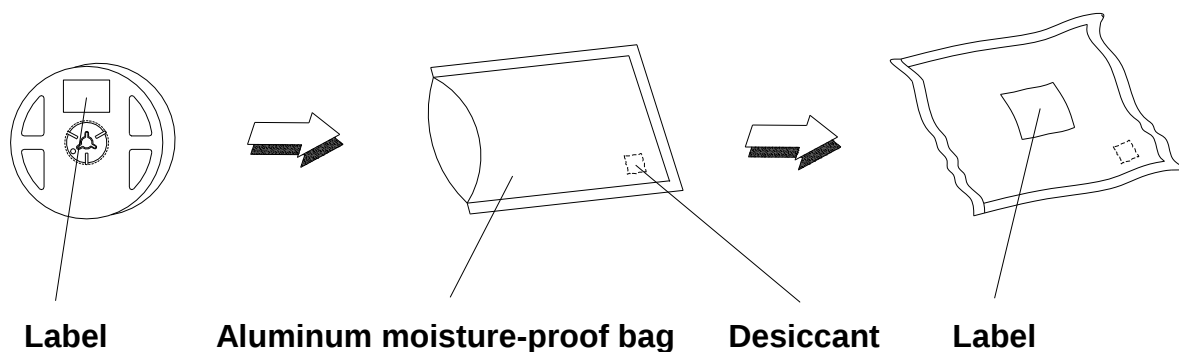
Reel:2000pcs



Notes:

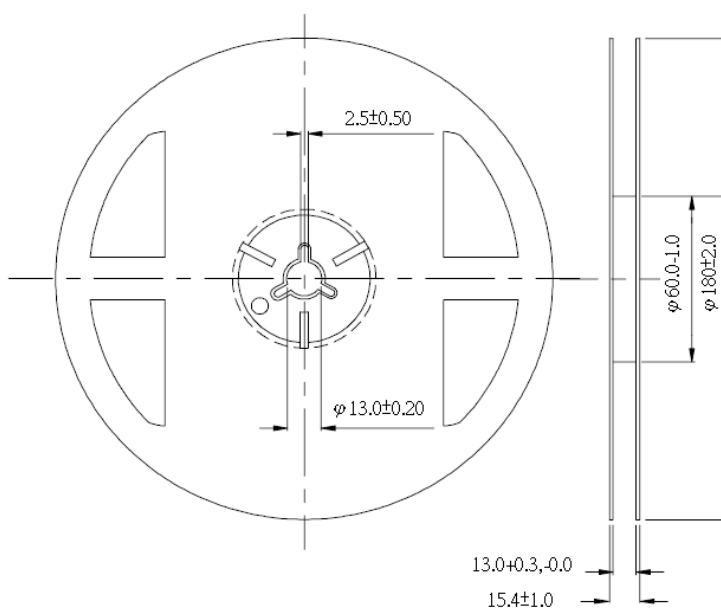
- 1.Tolerance unless mentioned is $\pm 0.1\text{mm}$; Unit = mm
- 2.Minimum packing amount is 2000 pcs per reel

Moisture Resistant Packaging MSL Level 3



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

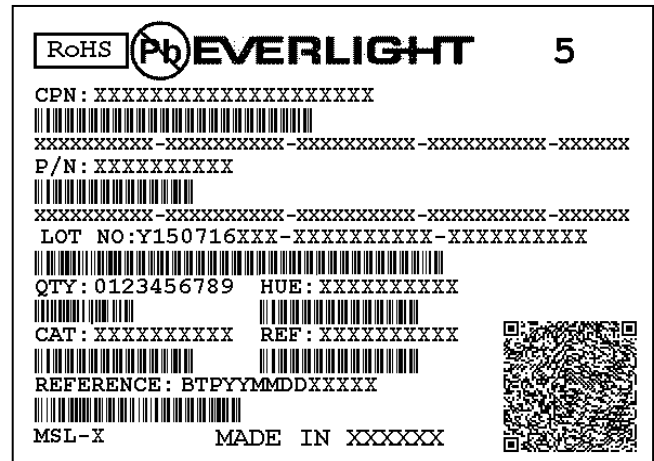
CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place



Precautions for Use

1. Over-current-proof

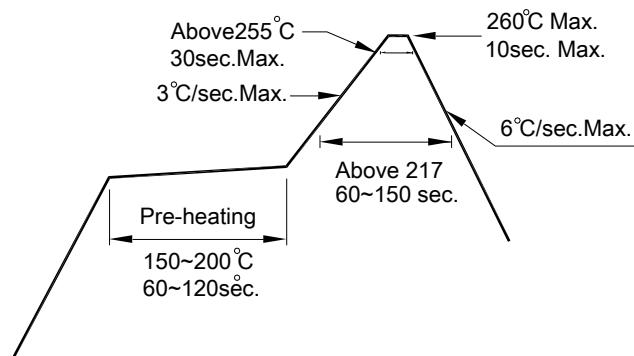
Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Assemblies

Do not stack assemblies containing Everlight XI3030P 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.

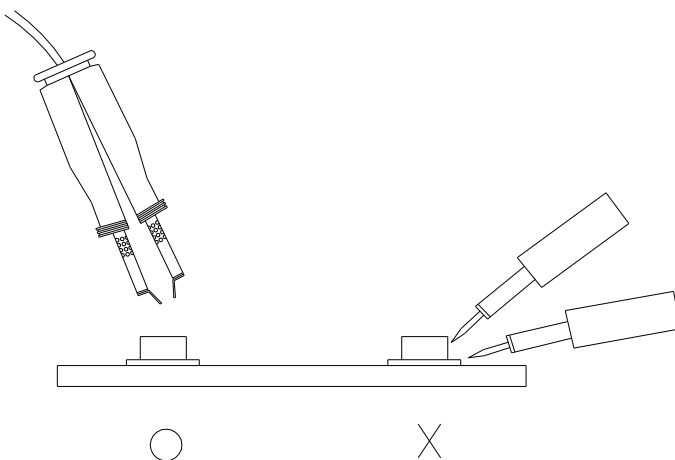
3.4 After soldering, do not warp the circuit board.

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.

Datasheet Revision Form

Common	Version	Date
New Version	V1	2018.04.13
1.Revised LED component tape direction	V2	2018.08.27