

XI5050/LK5C-HXXXX072Z75/2N



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 5050 package is a lighting grade high power LED. It is a compact package with high lumens and efficiency and is suitable for many lighting applications.

Applications

- Decorative and Entertainment Lighting
- Agriculture Lighting
- General use
- Illumination

Product Number Explanation

XI5050/LK5C-HXXXXXXZ75/2N



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: ± 2

Table of Forward Current Index

Symbol	Description
Z75	$I_F:750mA$

Example:

XI5050/LK5C-H6569072Z75/2N

CRI	70(Min.)
CCT	6500K
Flux	690lm(Min)
V_F	7.2V(Max)
I_F	750mA

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Forward Current	I_F	750	mA
Power Dissipation	P_d	5.4	W
Pulse Forward Current	IPF	1125	mA
Operating Temperature	T_{opr}	-35 ~ +85	°C
Storage Temperature	T_{stg}	-35 ~ +85	°C
Thermal Resistance Junction to Board	$R_{\Theta jc}$	7	°C/W / °C
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

PN of the XI5050 series: White LED

Order Code of XI5050	Minimum Luminous Flux (lm)	CCT (K) Wavelength (nm)	Forward Voltage (V)	Current (mA)
XI5050/LK5C-H6569072Z75/2N	690	6500	6.0-7.2	750
XI5050/LK5C-H5069072Z75/2N	690	5000	6.0-7.2	750
XI5050/LK5C-H4069072Z75/2N	690	4000	6.0-7.2	750
XI5050/LK5C-H3064072Z75/2N	640	3000	6.0-7.2	750

Notes:

1. Radiant 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.

Product Binning Luminous Flux Bins

	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
N	6469	640	690
	6974	690	740
	7479	740	790

Notes:

1. Radiant flux measurement tolerance: $\pm 10\%$.
2. Forward voltage bins are defined at $I_F=750\text{mA}$ operation.

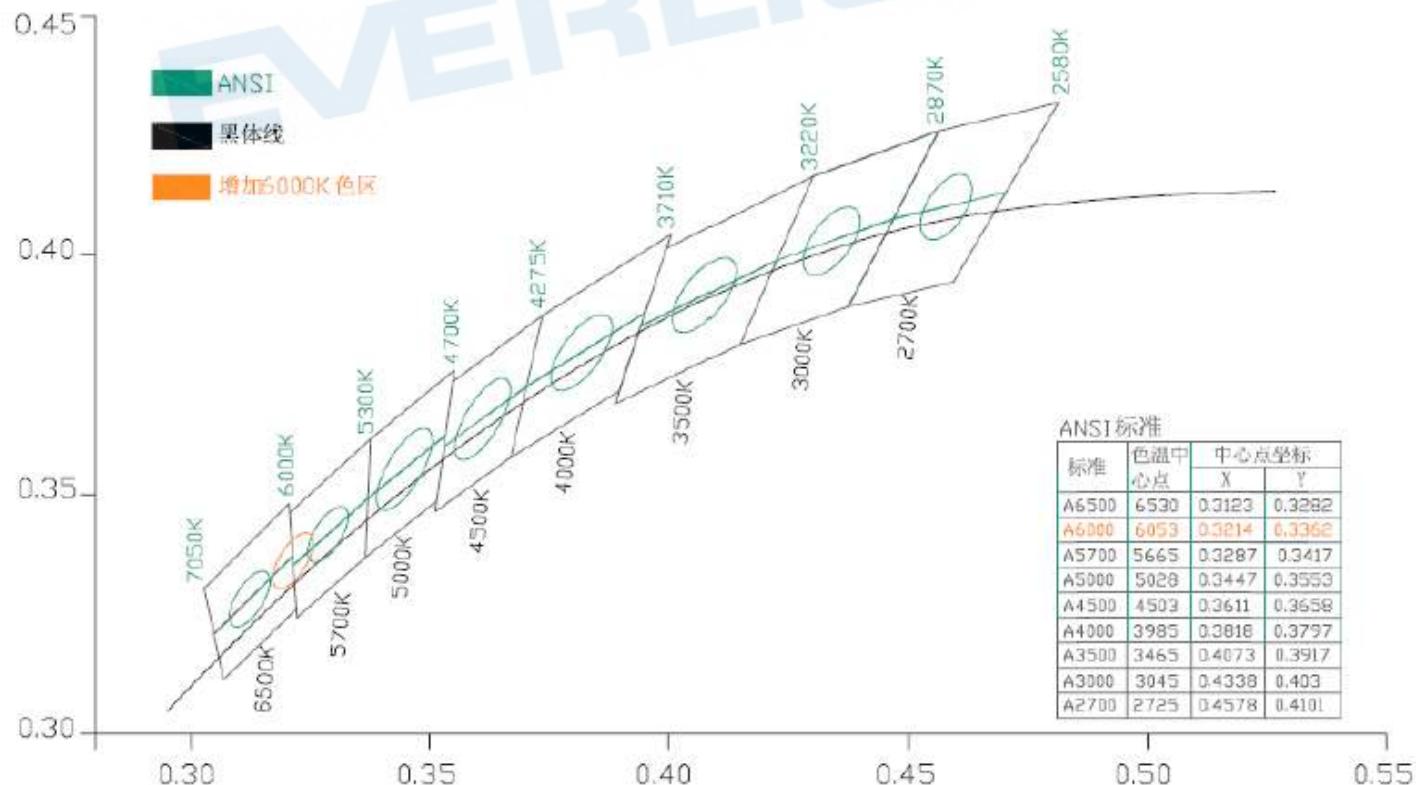
Forward Voltage Bins

Bin	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
6062	6.0	6.2
6264	6.2	6.4
6466	6.4	6.6
6668	6.6	6.8
6870	6.8	7.0
7072	7.0	7.2

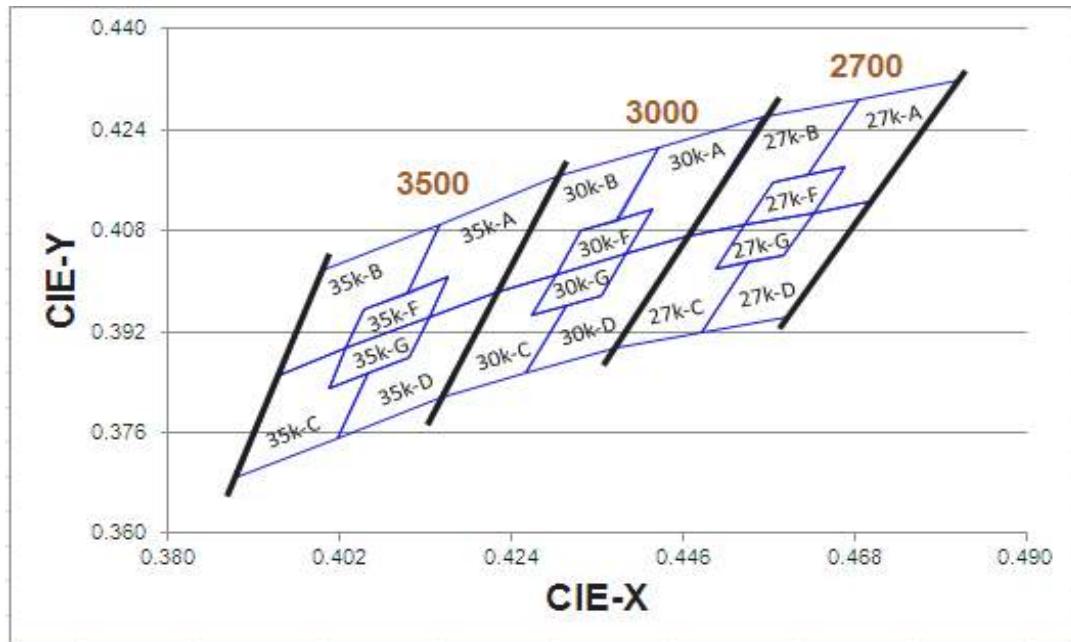
Notes:

1. Forward voltage measurement tolerance: $\pm 0.1V$
2. Forward voltage bins are defined at $I_F=750mA$ operation.

Cool-White Bin Structure



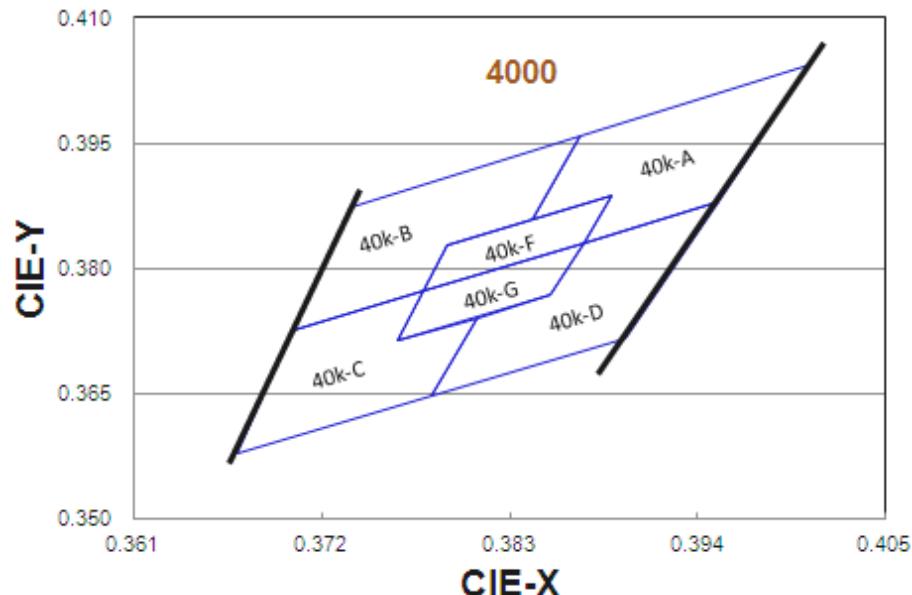
The C.I.E. 1931 Chromaticity Diagram



Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
3000K	30K-A	0.4562	0.4260	30K-D	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-B	0.4430	0.4212	30K-C	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					
3000K	30K-F	0.4422	0.4113	30K-G	0.4388	0.4043
		0.4328	0.4079		0.4297	0.4011
		0.4297	0.4011		0.4267	0.3946
		0.4388	0.4043		0.4355	0.3977
	Reference Range:2960K~3080K					

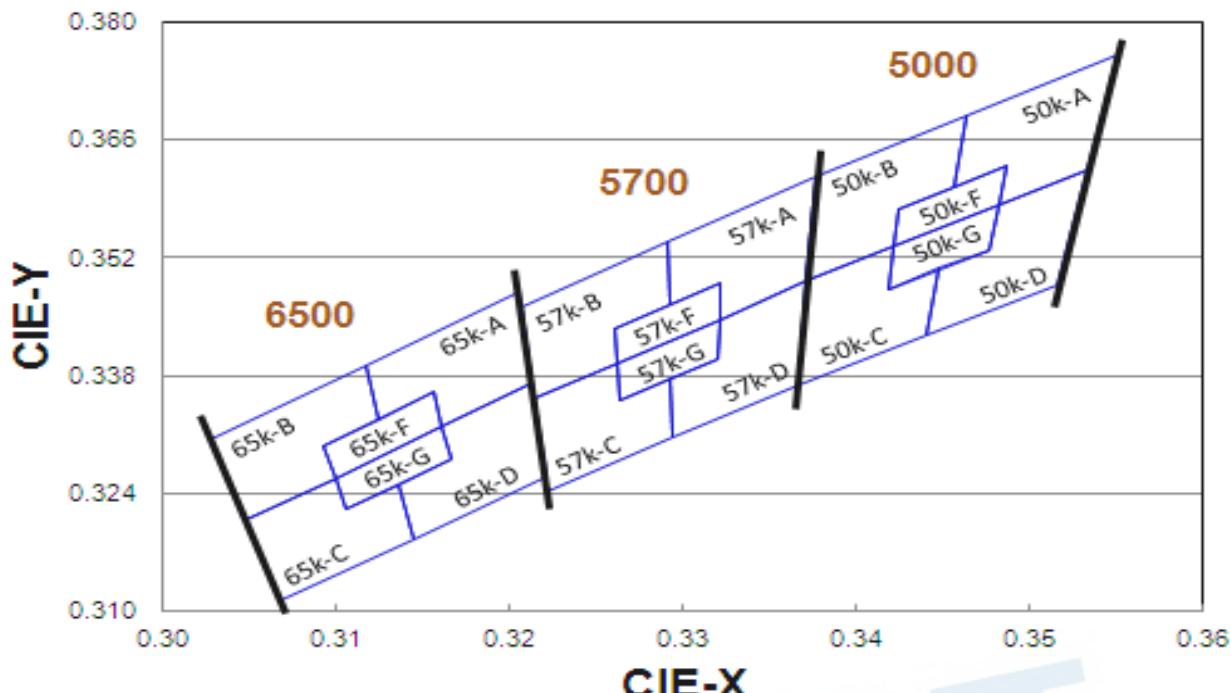
The C.I.E. 1931 Chromaticity Diagram



Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
4000K	40K-A	0.4006	0.4044	40K-D	0.3952	0.3880
		0.3871	0.3959		0.3873	0.3831
		0.3843	0.3858		0.3854	0.3768
		0.3890	0.3887		0.3810	0.3741
		0.3873	0.3831		0.3784	0.3647
		0.3952	0.3880		0.3898	0.3716
	Reference Range:3700K~3970K					
	40K-B	0.3871	0.3959	40K-C	0.3703	0.3726
		0.3736	0.3874		0.3670	0.3578
		0.3703	0.3726		0.3784	0.3647
		0.3779	0.3773		0.3810	0.3741
		0.3793	0.3828		0.3764	0.3713
		0.3843	0.3858		0.3779	0.3773
	Reference Range:3970K~4270K					
4500K	40K-F	0.3890	0.3887	40K-G	0.3873	0.3831
		0.3793	0.3828		0.3779	0.3773
		0.3779	0.3773		0.3764	0.3713
		0.3873	0.3831		0.3854	0.3768
	Reference Range:3870K~4080K					

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-A	0.3551	0.3760	50K-D	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-B	0.3464	0.3688	50K-C	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					
	50K-F	0.3487	0.3629	50K-G	0.3482	0.3583
		0.3425	0.3579		0.3422	0.3533
		0.3422	0.3533		0.3418	0.3483
		0.3482	0.3583		0.3477	0.3530
	Reference Range: 4910K~5120K					

Bin Range of Chromaticity Coordinates

CCT	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
6500K	65K-A	0.3205	0.3481	65K-D	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-B	0.3117	0.3393	65K-C	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					
65K-F	0.3157	0.3360	65K-G	0.3161	0.3320	
	0.3093	0.3297		0.3100	0.3259	
	0.3100	0.3259		0.3106	0.3222	
	0.3161	0.3320		0.3166	0.3281	
	Reference Range:6300K~6690K					

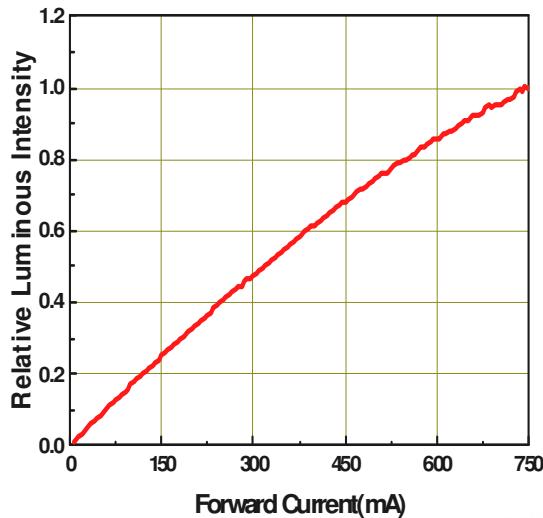
Notes:

1. The value is based on driving current by 750mA.
2. Tolerance of Chromaticity Coordinates: ± 0.01 .

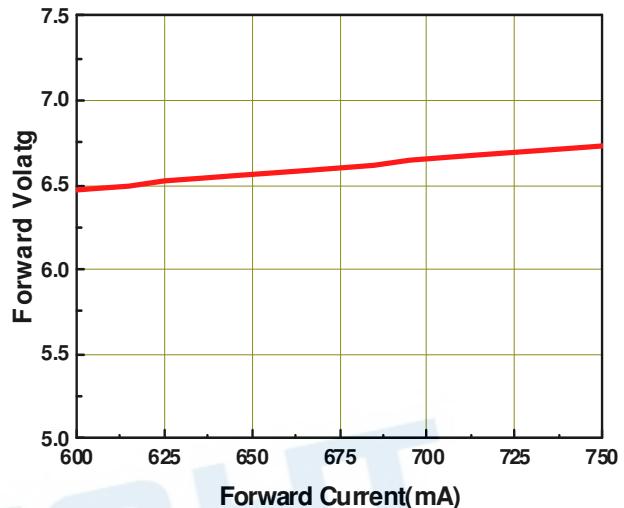
Typical Radiation Patterns

Typical Diagram Characteristics of Radiation

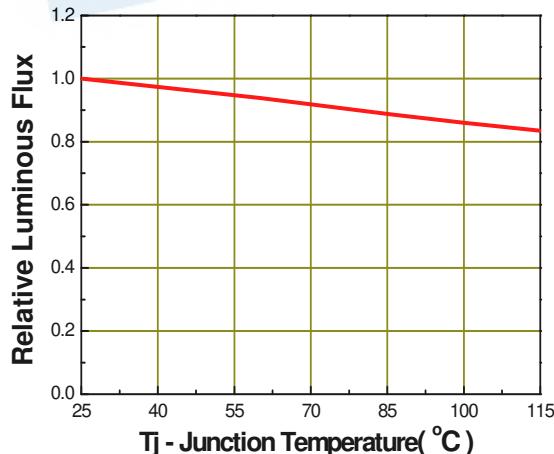
**Relative Luminous Intensity vs.
Forward Current**



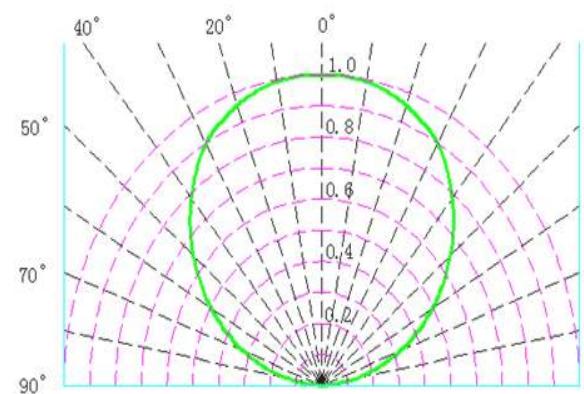
Forward Current vs. Forward Voltage



**Relative Luminous Intensity vs.
Junction Temperature**



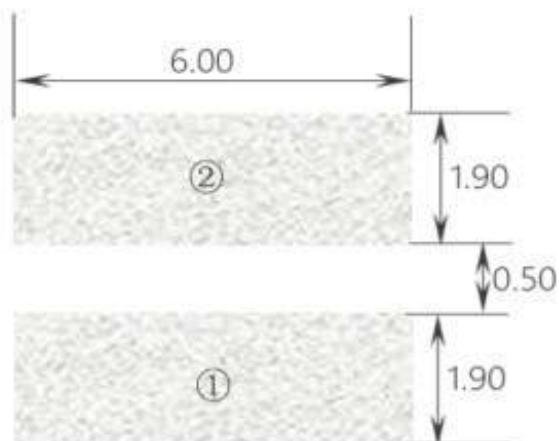
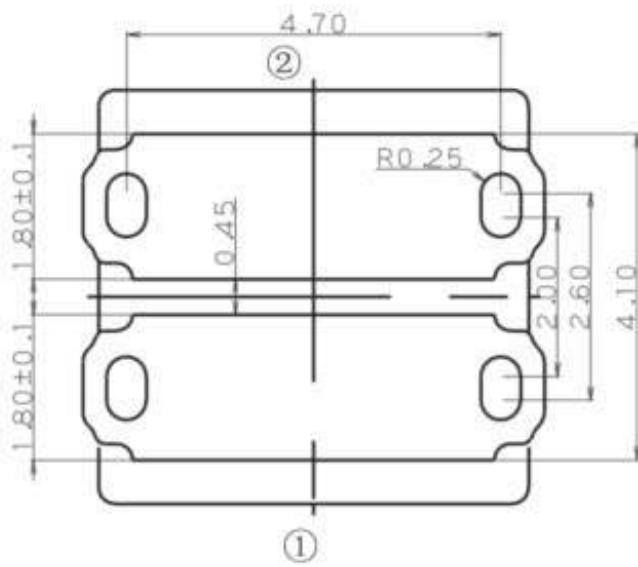
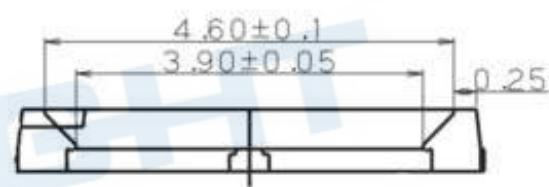
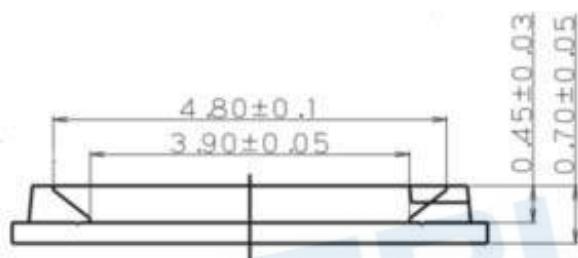
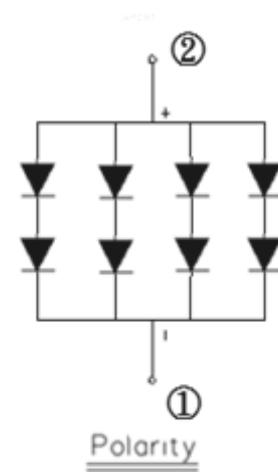
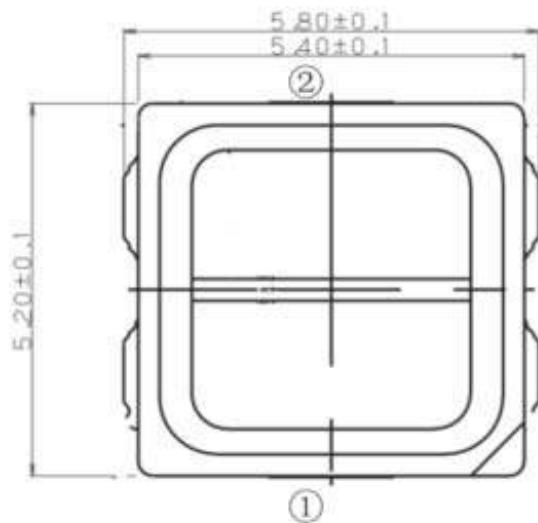
Typical optical characteristics curves



Notes:

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

Mechanical Dimension



Soldering patterns

Note:

Tolerance unless mentioned is ± 0.15 mm; Unit = 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

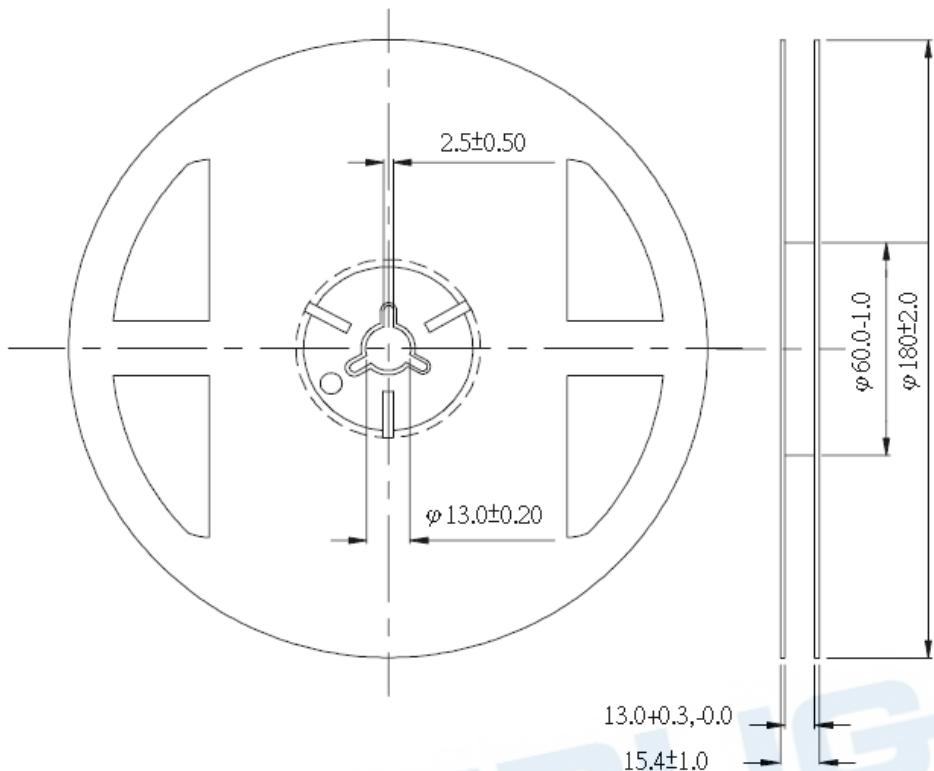
REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place



Reel Dimensions
Loaded Quantity 1500 pcs Per Reel

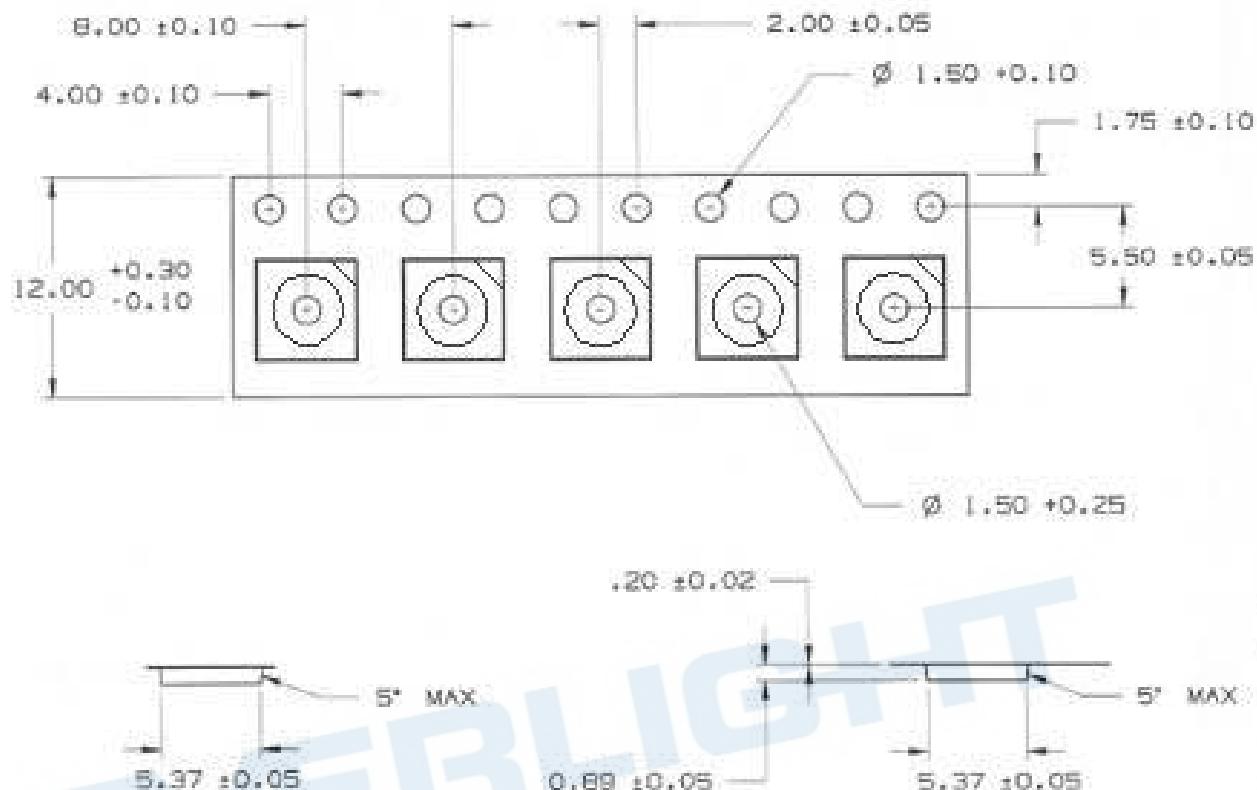


Note:
Tolerances unless mentioned ± 0.1 mm. Unit = mm

Emitter Tape Packaging

Carrier Tape Dimensions as the following:

Reel:1500pcs

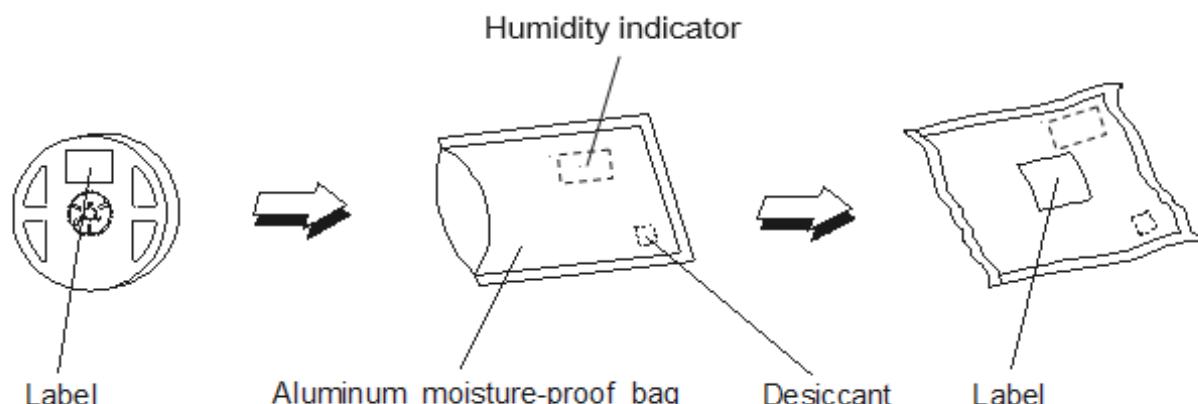


Notes:

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

Emitter Reel Packaging

Moisture Resistant Packaging



Precautions for Use

Precautions for Use

1. Over-current-proof

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

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

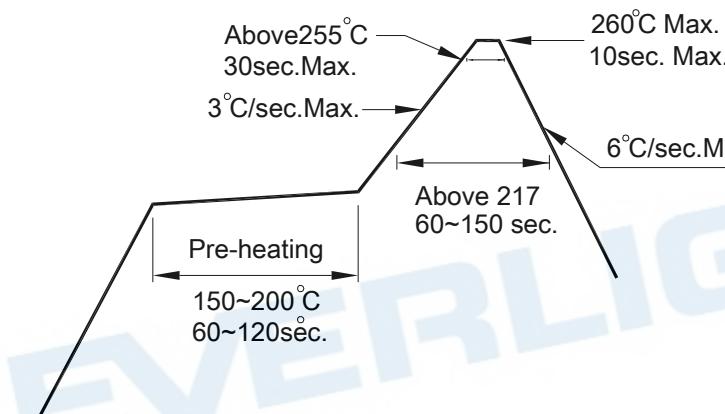
2.3 After opening the package: The LED's floor life is 168 Hrs under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 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: $60 \pm 5^\circ\text{C}$ for 24 hours.

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.

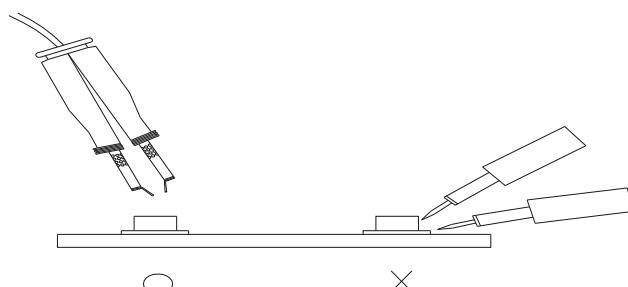
3.4 After soldering, do not warp the circuit board.

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 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 the LEDs will or will not be damaged by repairing.



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.
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