Technical Data Sheet-Preliminary

Top View LEDs

62-227A/XK2C-NXXXXXXXXXXXX/2T

Features

- Top view white LED
- High luminous flux output
- High current capability
- White package
- Wide viewing angle
- Pb-free
- The product itself will remain within RoHS compliant version.

Descriptions

- Due to the package design, 62-227A has wide viewing angle, and white LEDs are devices which are materialized by combing blue chip and special phosphor. This feature makes the LED ideal for light guide application.

Applications

- Decorative and Entertainment Lighting.
- Light pipe application
- Indicator and backlight in office and family equipment
- General use

Device Selection Guide

Chip Material	Emitted Color	Resin Color
InGaN	Cool White Neutral White Warm White	Water Clear

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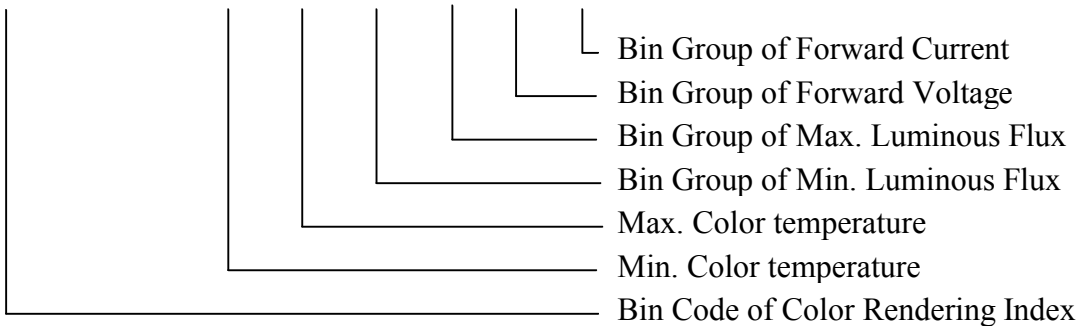
62-227A/XK2C-NXXXXXXXXXXXX/2T

Product Number Explanation

62-227A / X K 2 C -N XX XX XX XX XX XX/ 2T



Notes

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
H	$CRI_{(min)}$: 90

Notes:

1. Tolerance of Color Rendering Index: ±2

Example:

62-227A/LK2C-N5757P3P4S2Z6/2T

CRI	Min=70
CCT	5700k
Flux	33~45lm
VF	5.8V~7.0V

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Mass Production list

Product	CRI min.	CCT(K) (Typ.)	Φ(lm) Min.	Φ(lm) Typ.	Φ(lm) Max.
62-227A/LK2C-N5757P3P4S2Z6/2T	70	5700K	33	37	45
62-227A/LK2C-N4040N4P3S2Z6/2T	70	4000K	27	35	39
62-227A/LK2C-N3030N4P3S2Z6/2T	70	3000K	27	33	39
62-227A/KK2C-N4040N4P3S2Z6/2T	80	4000K	27	33	39
62-227A/KK2C-N3030N4P3S2Z6/2T	80	3000K	27	31	39

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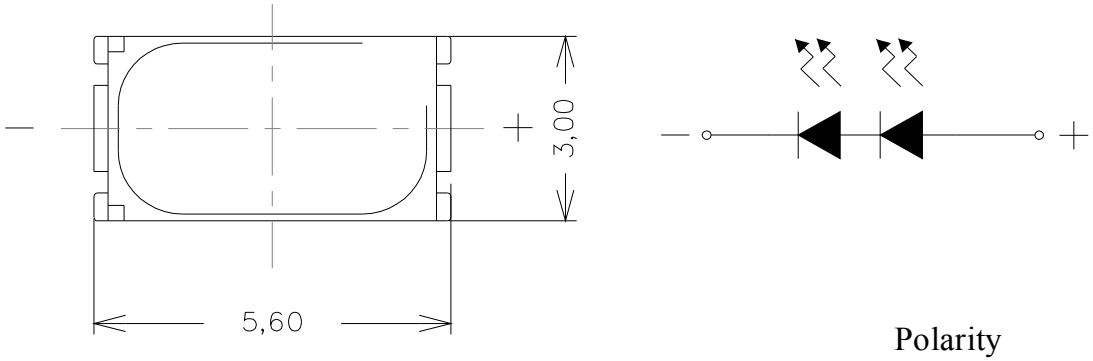
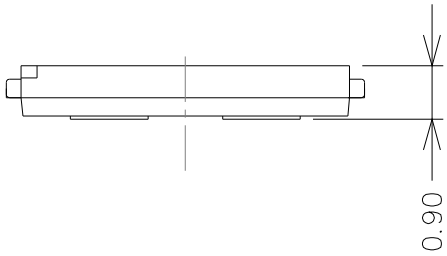
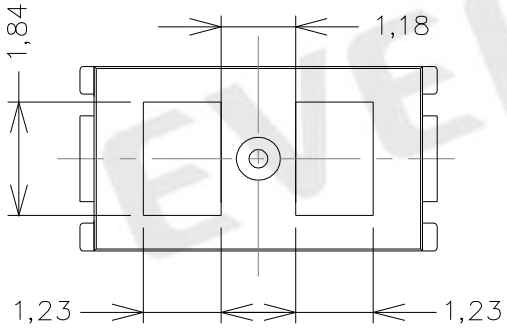
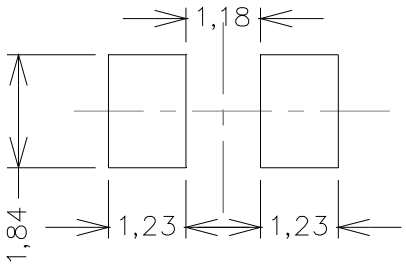
Package Outline Dimensions



Polarity







Recommended soldering pad design

Note: The tolerance unless mentioned is ±0.1, unit = mm.

Technical Data Sheet-Preliminary

Top View LEDs

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Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage*1	V_R	10	V
Forward Current*1	I_F	100	mA
Peak Forward Current (Duty 1/10 @10ms) *1	I_{FP}	300	mA
Power Dissipation*1	Pd	350	mW
Electrostatic Discharge(HBM)*1	ESD	1000	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Soldering Temperature	Tsol	Reflow Soldering: 260 ℃ for 10 sec. Hand Soldering: 350 ℃ for 3 sec.	

Notes:

1. * 1. The value are based on 1 die performance
2. The products are sensitive to static electricity and must be carefully taken when handling products.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Viewing Angle	$2\theta_{1/2}$	----	120	----	deg	I_F=60mA*1
Reverse Current	I_R	----	----	50	uA	V_R=5V*1

Notes:

1. *1 For each LED.

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Bin Range of Luminous Flux

Bin Code	Min.	Max.	Unit	Condition
N3	24	27	lm	I_F=60mA *1
N4	27	33		
P3	33	39		
P4	39	45		
Q3	45	52		

Bin Range of Forward Voltage

Group	Bin Code	Min.	Max.	Unit	Condition
S2	5#8	5.80	5.90	V	I_F=60mA *1
	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. *1 For each LED.
2. Tolerance of Luminous flux: ±11%
3. Tolerance of Forward Voltage: ±0.05V

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Bin Range of Chromaticity Coordinates I_F=60mA

CCT Group	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
5700K	57K-A	0.3292	0.3600	57K-C	0.3172	0.3310
		0.3420	0.3700		0.3293	0.3423
		0.3410	0.3530		0.3294	0.3306
		0.3293	0.3423		0.3183	0.3210
	57K-B	0.3153	0.3500	57K-D	0.3410	0.3530
		0.3292	0.3600		0.3293	0.3423
		0.3293	0.3423		0.3294	0.3306
		0.3172	0.3310		0.3403	0.3380

Note: Tolerance of Chromaticity Coordinates: ±0.01

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Bin Range of Chromaticity Coordinates I_F=60mA

CCT Group	Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
4000K	40K-A	0.4006	0.4044	40K-C	0.3828	0.3803
		0.3871	0.3959		0.3703	0.3726
		0.3828	0.3803		0.3670	0.3578
		0.3952	0.3880		0.3784	0.3647
	40K-B	0.3871	0.3959	40K-D	0.3952	0.3880
		0.3736	0.3874		0.3828	0.3803
		0.3703	0.3726		0.3784	0.3647
		0.3828	0.3803		0.3898	0.3716
3000K	30K-A	0.4562	0.4260	30K-C	0.4345	0.4033
		0.4431	0.4213		0.4223	0.3990
		0.4345	0.4033		0.4147	0.3814
		0.4468	0.4077		0.4260	0.3854
	30K-B	0.4431	0.4213	30K-D	0.4468	0.4077
		0.4299	0.4165		0.4345	0.4033
		0.4223	0.3990		0.4260	0.3854
		0.4345	0.4033		0.4373	0.3893

Note: Tolerance of Chromaticity Coordinates: ±0.01

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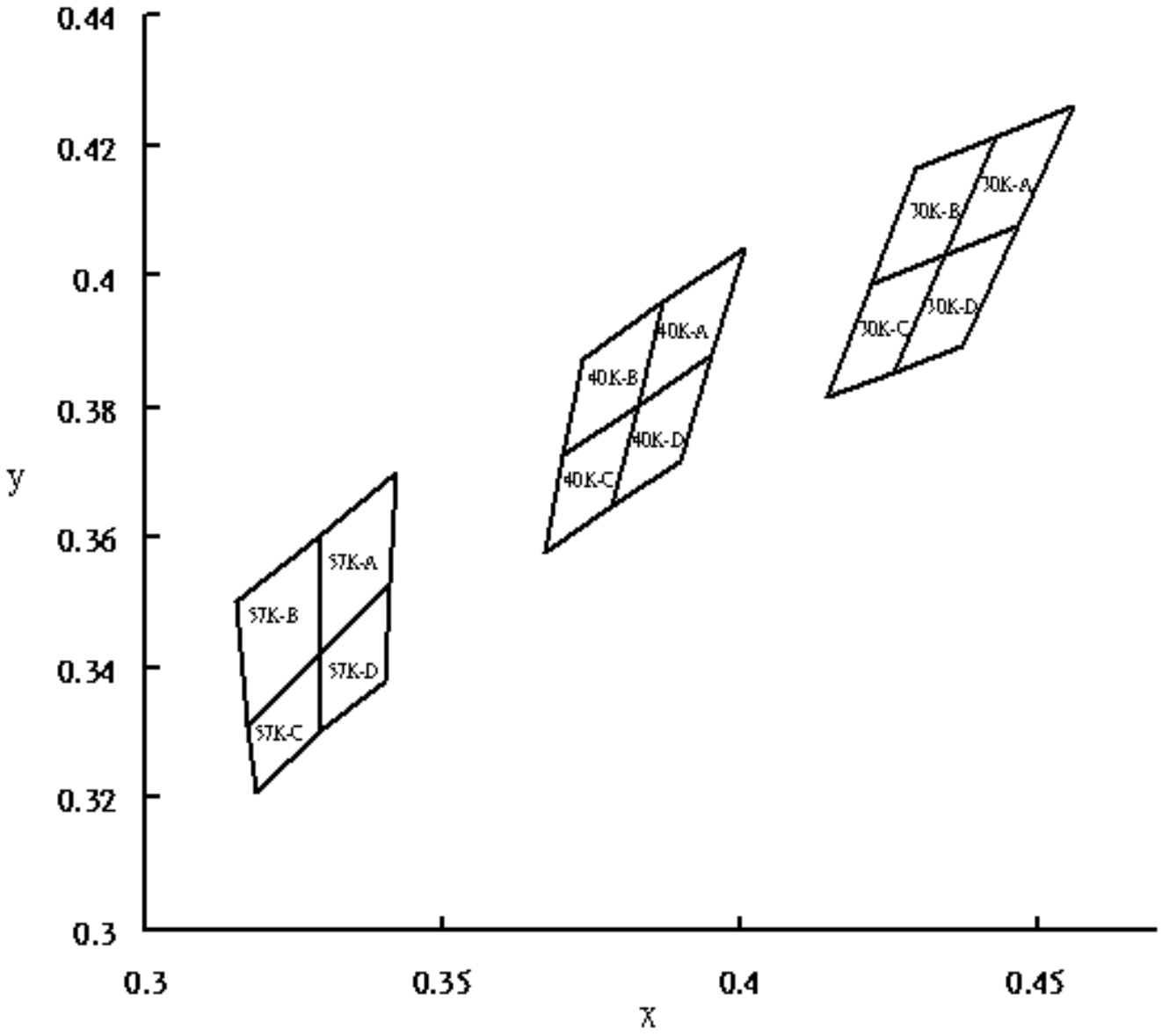
The C.I.E. 1931 Chromaticity Diagram



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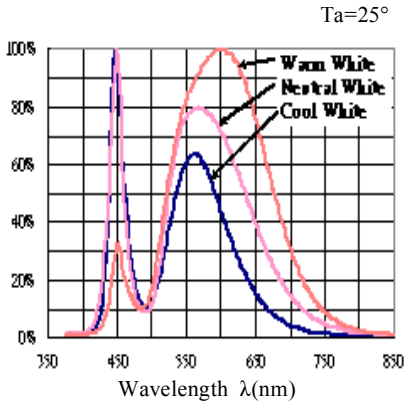
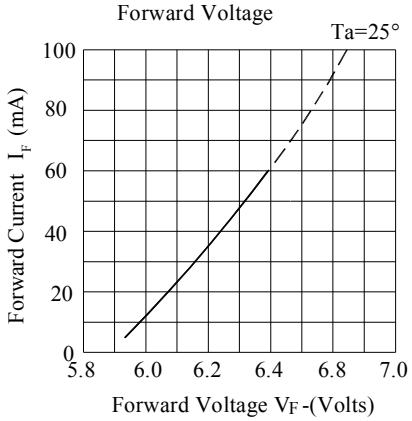
Typical Electro-Optical Characteristics Curves

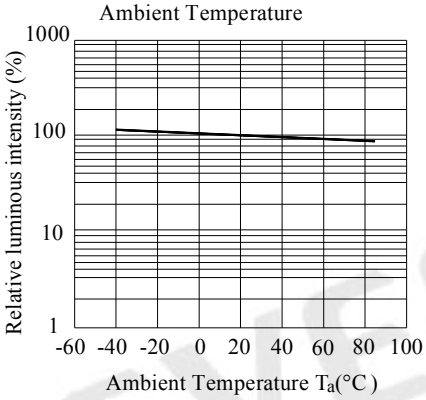
Spectrum Distribution



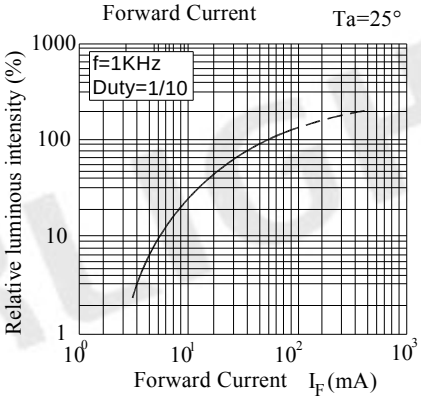
Forward Current vs. Forward Voltage



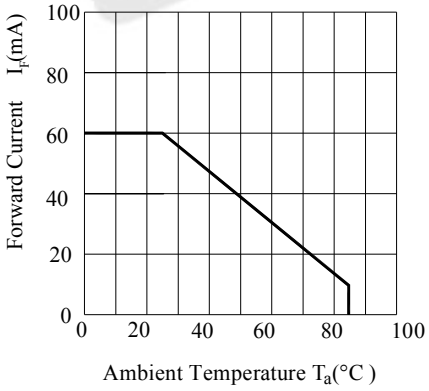
Relative Luminous Intensity vs. Ambient Temperature



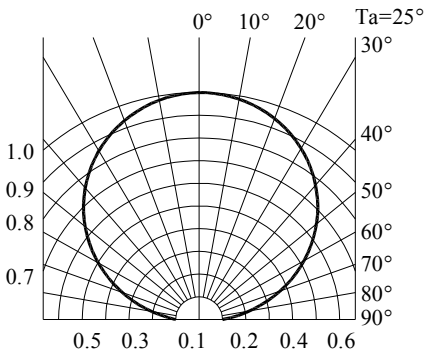
Relative Luminous Intensity vs. Forward Current



Forward Current Derating Curve



Radiation Diagram



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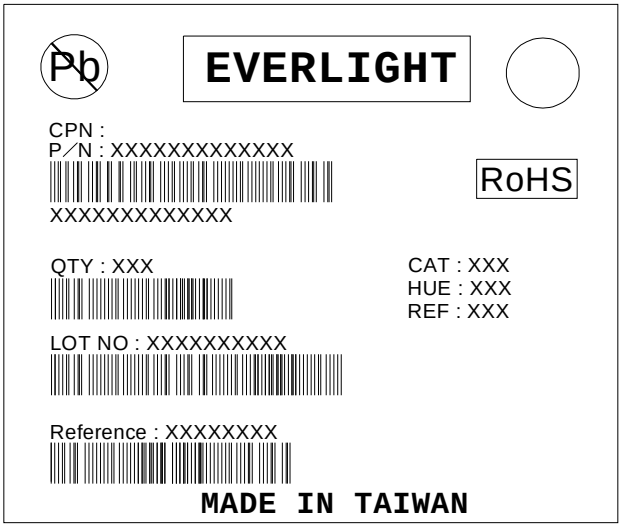
Label Explanation

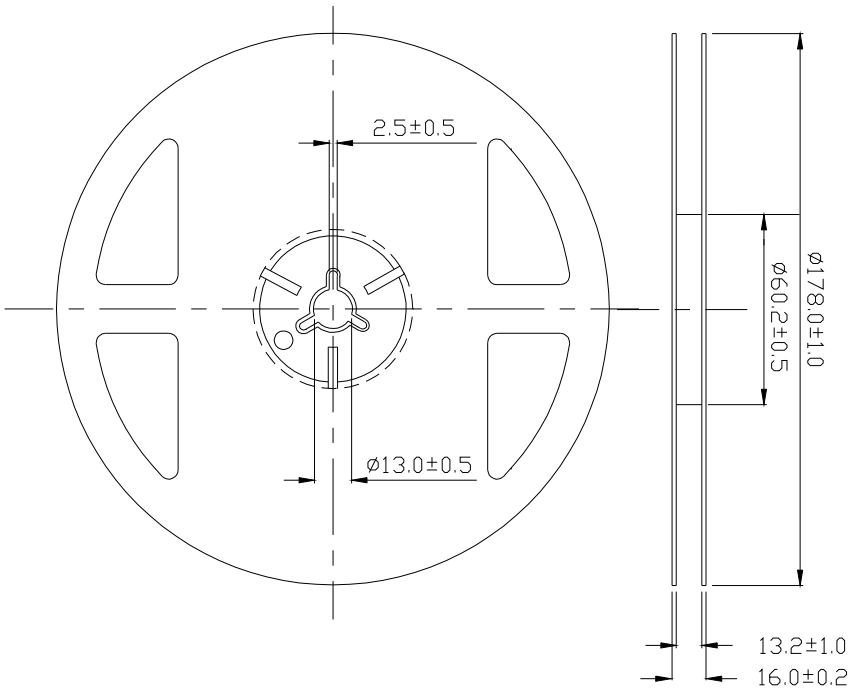
CAT: Luminous Flux Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank



Reel Dimensions



Note: The tolerance unless mentioned is ±0.1, unit = mm.

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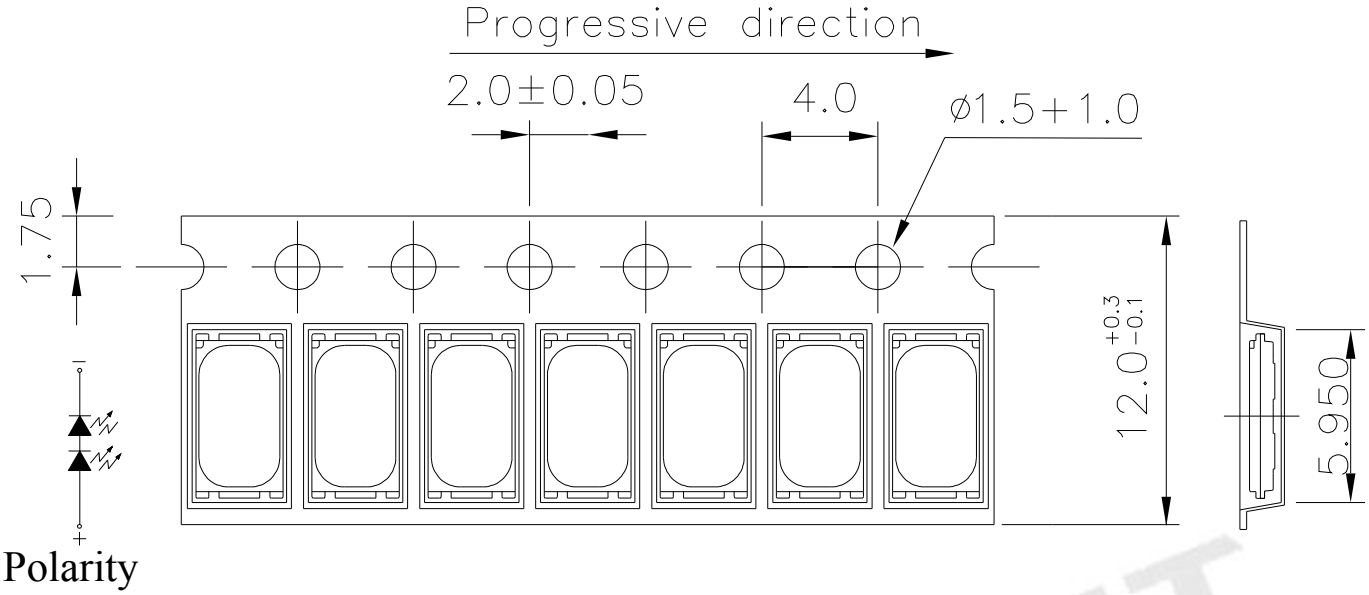
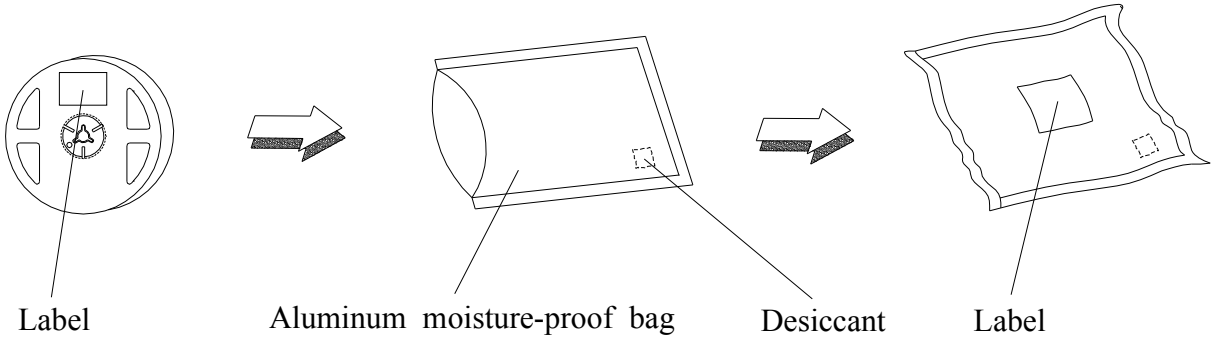
Carrier Tape Dimensions: Loaded Quantity 2000 pcs. Per Reel



Note: The tolerance unless mentioned is ±0.1, unit = mm.

Moisture Resistant Packaging



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Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD：10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260℃±5℃ Min. 5sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100℃	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I_F = 60 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/ 85%RH	1000 Hrs.	22 PCS.	0/1

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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. Storage

   2.1 Don't open moisture proof bag before the products are ready to use.

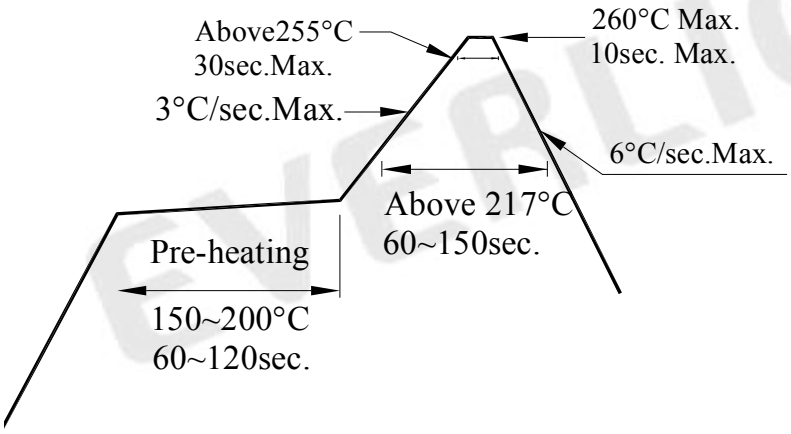
   2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

   2.3 After opening the package: The LED's floor life is 168 Hrs under 30℃ 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±5℃ 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.

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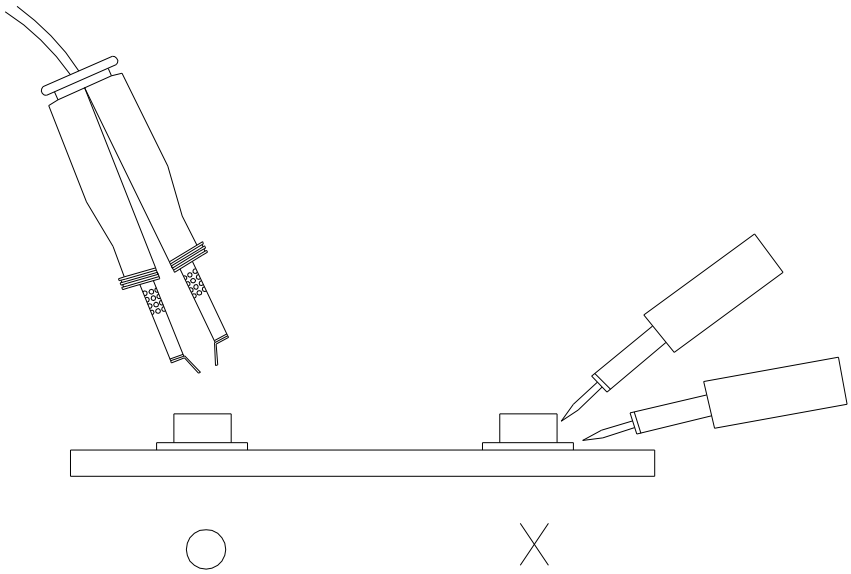
4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ 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.



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