

SMD ■ MID POWER LED

62-227ET/RK6C-MXXXXXXXXX2731Z15/2T



Features

- PLCC-2 Package
- Top view white LED
- High luminous flux output
- High current capability
- Wide viewing angle
- Pb-free
- RoHS compliant
- ANSI Binning
- ESD protection

Description

The Everlight 62-227ET package has high efficacy, high CRI, low power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting application.

Applications

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

Mass Production List for CRI>80

Product	CRI Min.(1)	R9 Min.(1)	CCT(K)	Φ(lm) Min. (2)	Φ(lm) Max. (2)
62-227ET/RK6C-M2727R3R52731Z15/2T	90	50	2700K	60	76
62-227ET/RK6C-M3030R4R52731Z15/2T	90	50	3000K	65	76
62-227ET/RK6C-M3535R4R52731Z15/2T	90	50	3500K	65	76
62-227ET/RK6C-M4040R4R52731Z15/2T	90	50	4000K	65	76
62-227ET/RK6C-M5050R5R62731Z15/2T	90	50	5000K	70	83

Note:

1. Tolerance of Color Rendering Index: ± 3
2. Tolerance of Luminous flux: $\pm 11\%$.

Device Selection Guide

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

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

Parameter	Symbol	Rating	Unit
Forward Current	I _F	180	mA
Peak Forward Current (Duty 1/10 @10ms)	I _{FP}	300	mA
Power Dissipation	P _d	630	mW
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Thermal Resistance (Junction / Soldering point)	R _{th J-S}	21	°C/W
Junction Temperature	T _j	115	°C
Soldering Temperature	T _{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering Z: 350 °C for 3 sec.	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Flux ₍₁₎	Φ	60	-----	83	lm	I _F =150mA
Forward Voltage ₍₂₎	V _F	2.7	-----	3.1	V	I _F =150mA
Color Rendering Index ₍₃₎	R _a	90	-----	-----	-----	I _F =150mA
	R ₉	50	-----	-----	-----	I _F =150mA
Viewing Angle	2θ _{1/2}	-----	120	-----	deg	I _F =150mA

Notes:

1. Tolerance of Luminous flux: ±11%.
2. Tolerance of Forward Voltage : ±0.1V.
3. Tolerance of Color Rendering Index: ±2

Bin Range of Luminous Flux

Bin Code	Min.	Max.	Unit	Condition
R3	60	65	lm	I _F =150mA
R4	65	70		
R5	70	76		
R6	76	83		

Note:
 Tolerance of Luminous flux: ±11%

Bin Range of Forward Voltage

Group	Bin Code	Min.	Max.	Unit	Condition
2731	34	2.7	2.8	V	I _F =150mA
	35	2.8	2.9		
	36	2.9	3.0		
	37	3.0	3.1		

Note:
 Tolerance of Forward Voltage : ±0.1V.

Bin Code of Macadam 3 step

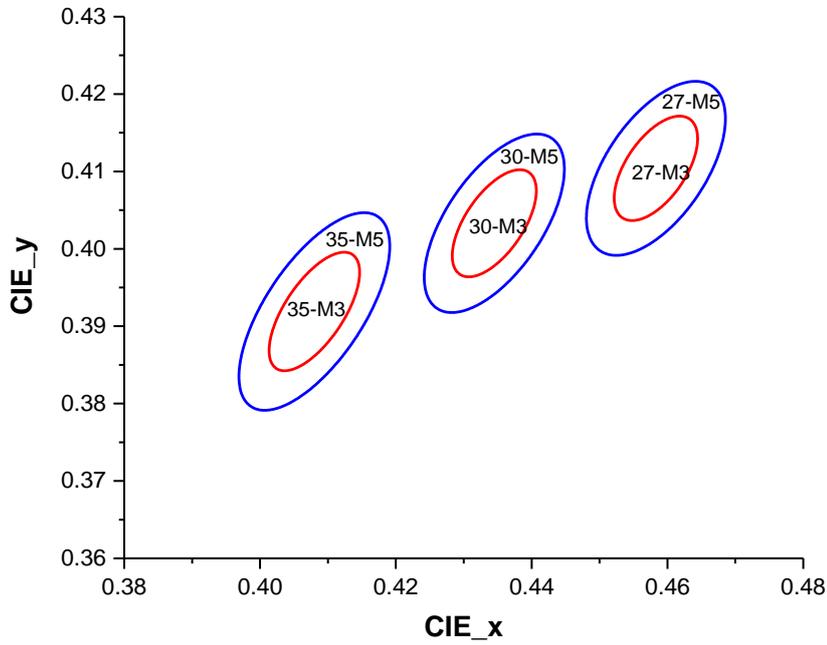
Step	CCT	Cx	Cy	a	b	theta
3	2700	0.4583	0.4104	0.00810	0.00420	49.70
	3000	0.4345	0.4033	0.00834	0.00408	50.22
	3500	0.4080	0.3919	0.00927	0.00414	51.00
	4000	0.3827	0.3803	0.00939	0.00402	54.80
	5000	0.3451	0.3559	0.00822	0.00354	64.12

Step	CCT	Cx	Cy	a	b	theta
5	2700	0.4583	0.4104	0.01350	0.00700	49.70
	3000	0.4345	0.4033	0.01390	0.00680	50.22
	3500	0.4080	0.3919	0.01545	0.00690	51.00
	4000	0.3827	0.3803	0.01565	0.00670	54.80
	5000	0.3451	0.3559	0.01370	0.00590	64.12

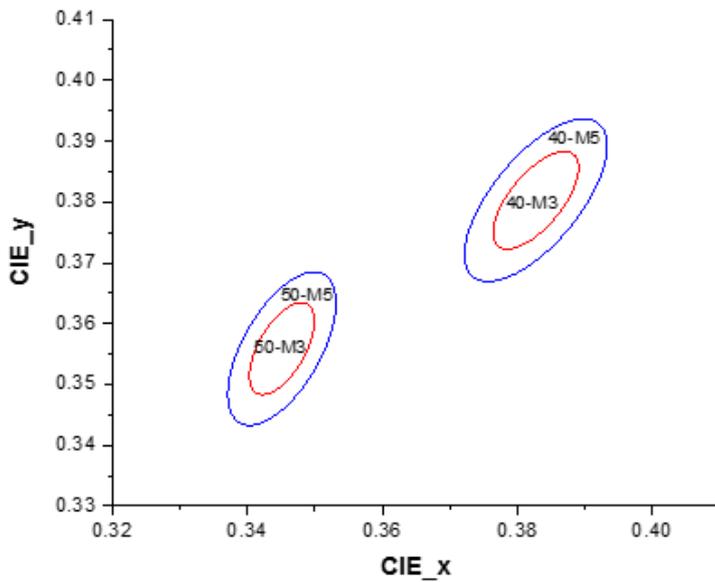
Note:

1. The value is based on driving current by 150mA
2. Tolerance of Chromaticity Coordinates: ± 0.01

The C.I.E. 1931 Chromaticity Diagram



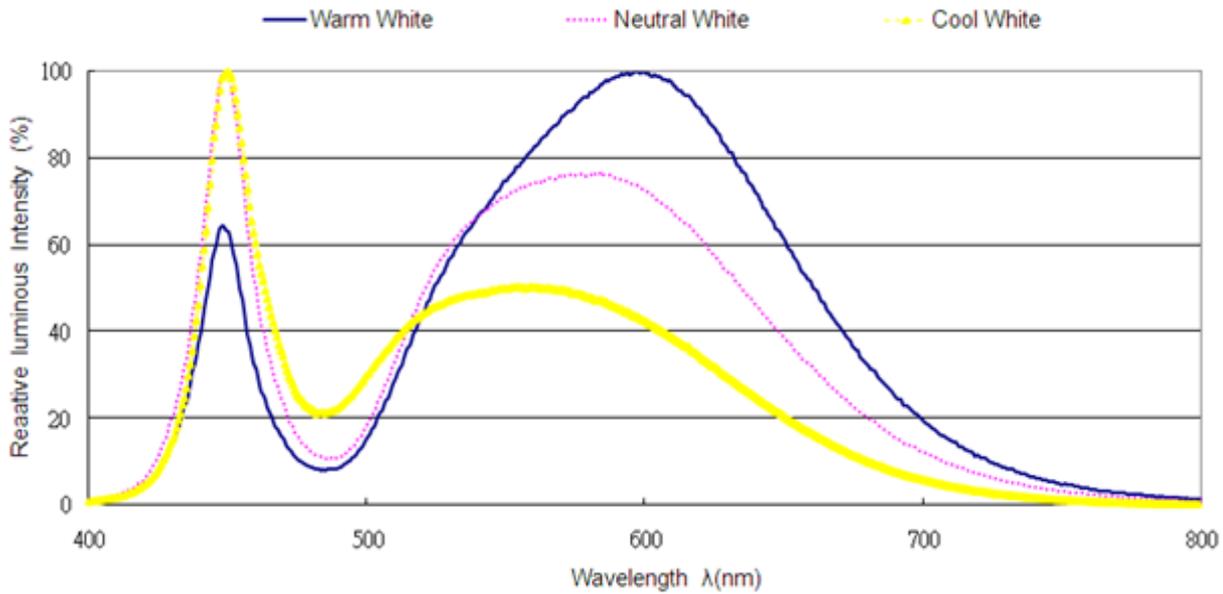
The C.I.E. 1931 Chromaticity Diagram



Notes:

1. The value are based on driving current by 150mA.
2. Tolerance of Chromaticity Coordinates : ± 0.01 .

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Spectrum Distribution



Typical Electro-Optical Characteristics Curves

Fig.1 – Forward Voltage Shift vs. Junction Temperature

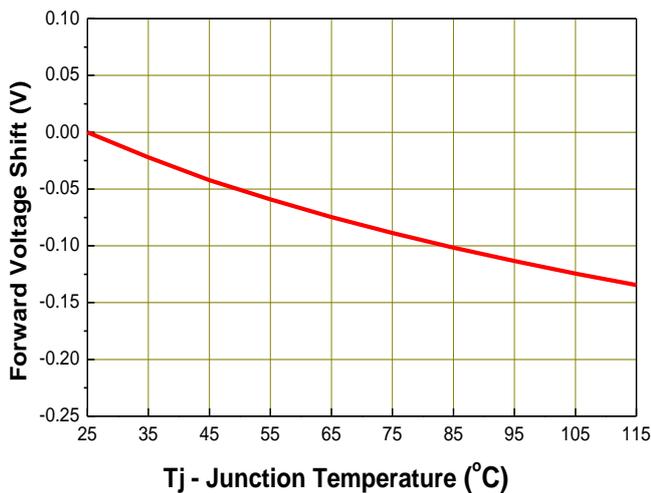
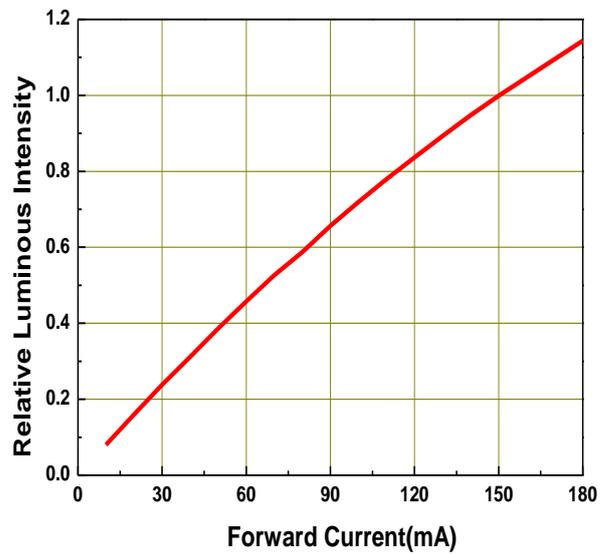


Fig.2 - Relative Luminous Intensity vs. Forward Current



Typical Electro-Optical Characteristics Curves

Fig.3 - Relative Luminous Intensity vs. Junction Temperature

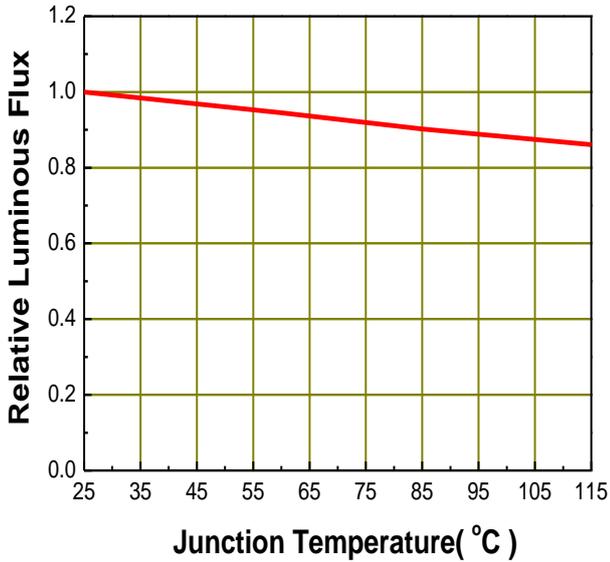


Fig.4 - Forward Current vs. Forward Voltage

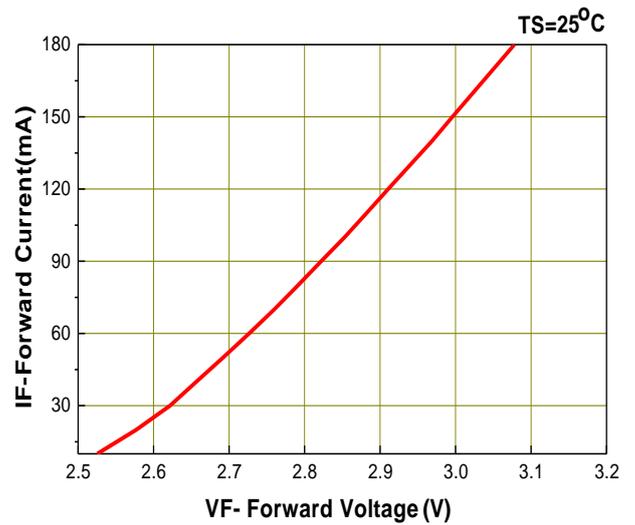


Fig.5 – Max. Driving Forward Current vs. Soldering Temperature

$R_{th\ i-s}=28^{\circ}C/W$

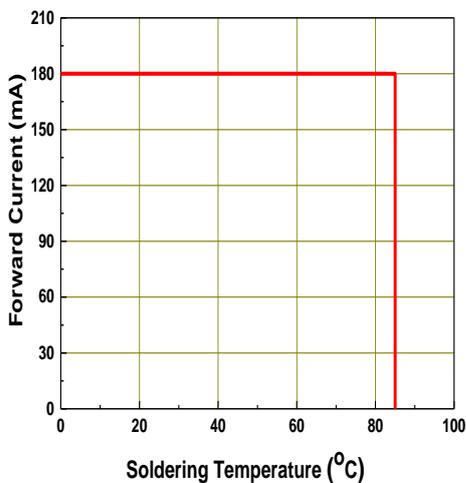
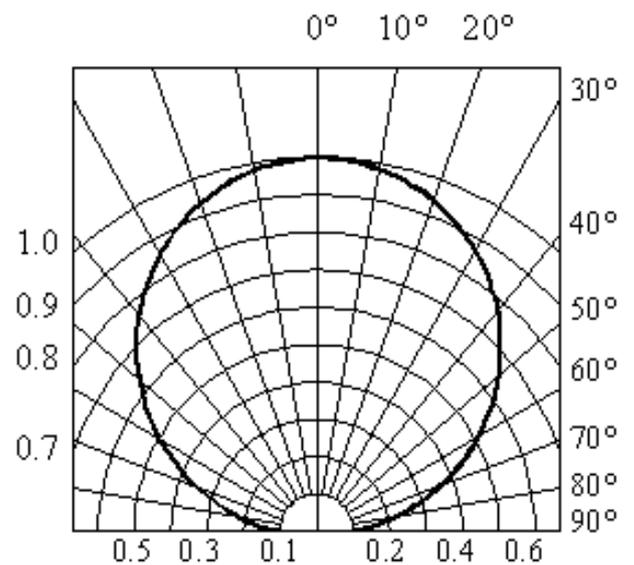
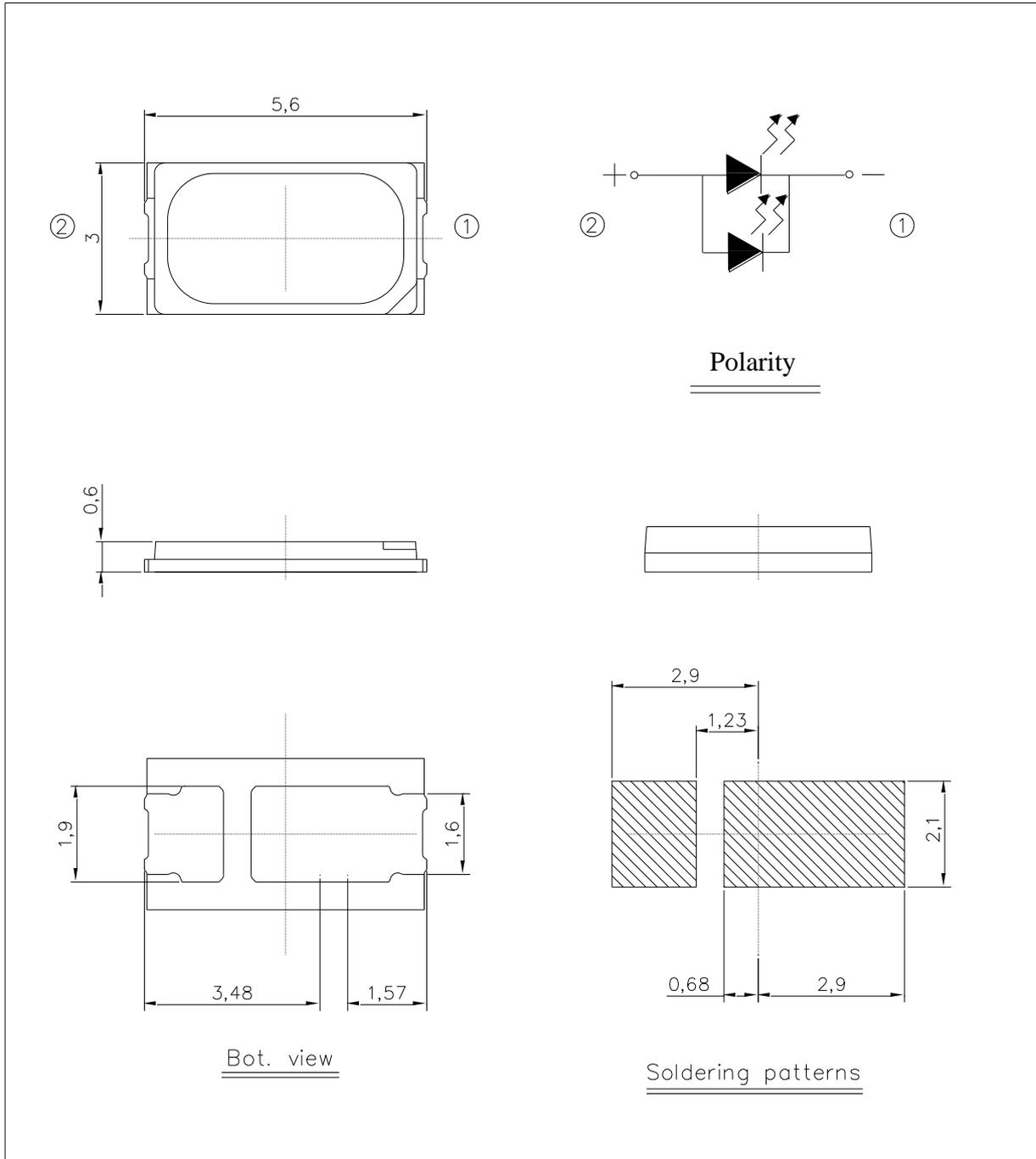


Fig.6 – Radiation Diagram



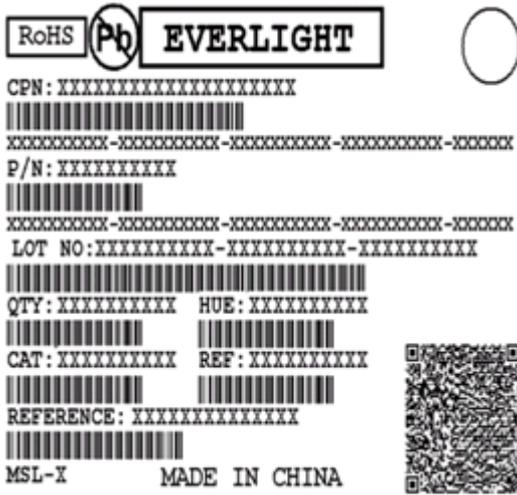
Package Dimension



Note:
Tolerance unless mentioned is $\pm 0.2\text{mm}$; Unit = mm

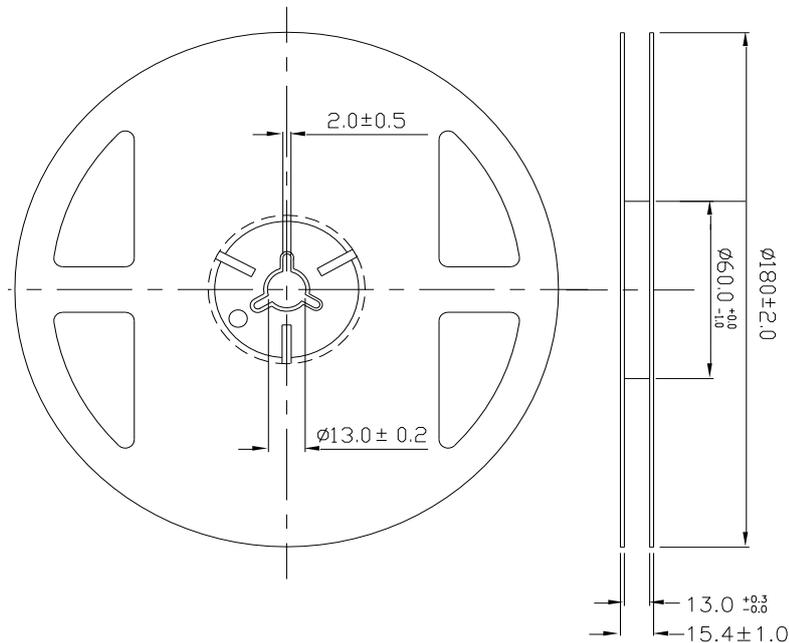
Moisture Resistant Packing Materials

Label Explanation



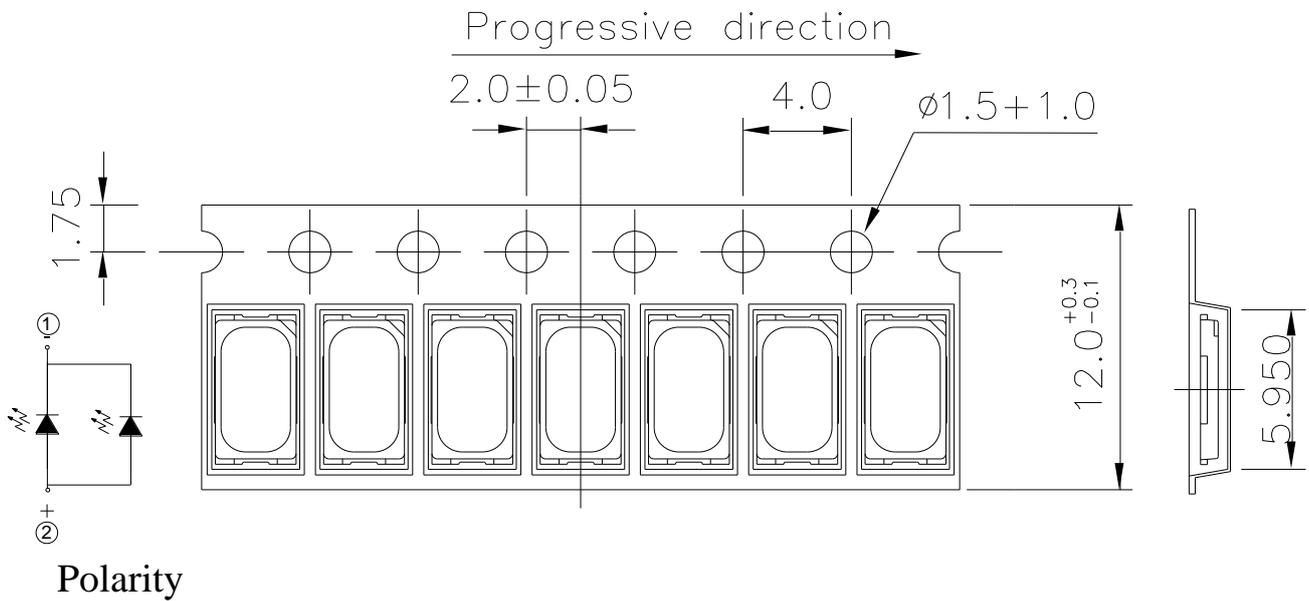
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



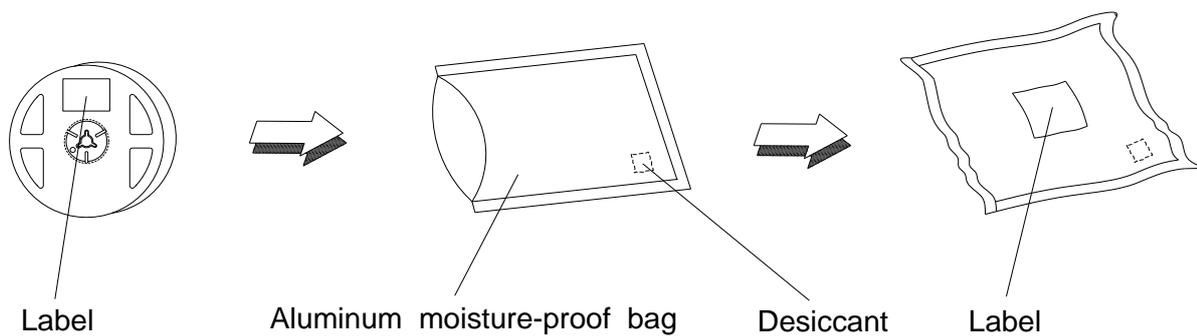
Note:
 Tolerances unless mentioned ± 0.1 mm. Unit = mm

Carrier Tape Dimensions: Loaded Quantity 500/1000/1500/2000 pcs. Per Reel



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

Moisture Resistant Packing Process



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	Resistance to Solder Heat	Temp. : 260°C/10sec.	3 Times.	8 PCS.	0/1
2	Temperature Cycle	-40°C~100°C / Dwell time 30min	200 Cycles	8 PCS.	0/1
3	High Temperature/Humidity Life	Ta=85°C,85%RH, I _F = 180mA	1000 Hrs.	8 PCS.	0/1
4	Low Temperature Life	Ta=-40°C, I _F = 180 mA	1000 Hrs.	8 PCS.	0/1
5	High Temperature Life	Ta=60°C, I _F =180mA	3000 Hrs.	8 PCS.	0/1
6	High Temperature Life	Ta=85°C, I _F =180 mA	3000 Hrs.	8 PCS.	0/1
7	Pulse	ON 30ms / OFF 2500ms	30000 CYCLES	8 PCS.	0/1
8	Thermal Shock	H : +100°C 20min ∩ 10 sec L : -40°C 20min	200 Cycles	8 PCS.	0/1
9	Power Temperature Cycle	H : +100°C 15min ∩ 5 min L : -40°C 15min I _F =120 mA	200 Cycles	8 PCS.	0/1

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 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.

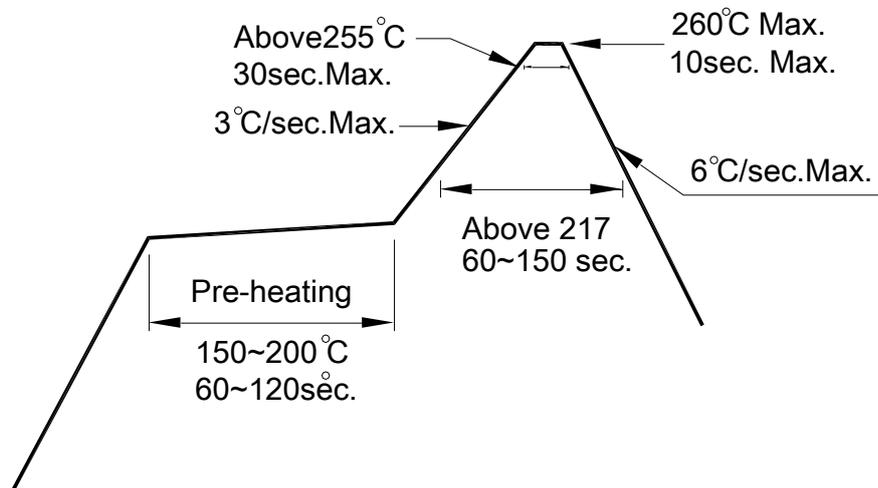
2.3 After opening the package: The LED's floor life is 72 Hrs under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

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±5°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.

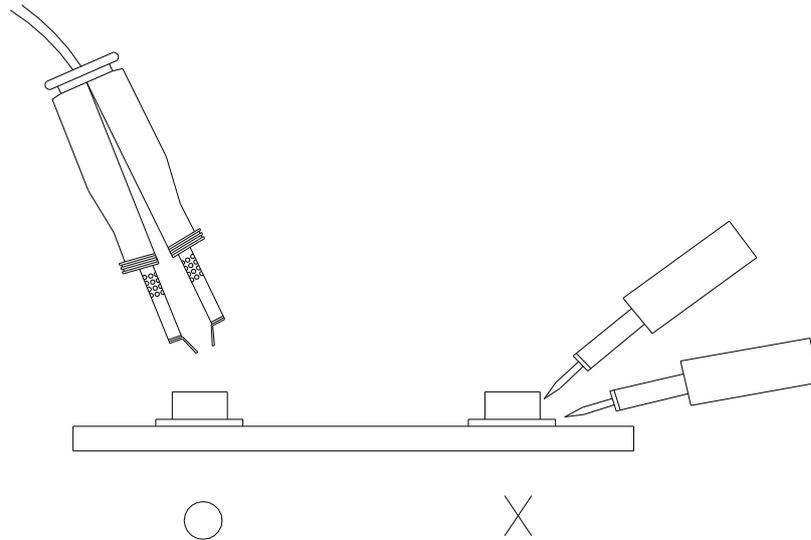
3.4 After soldering, do not warp the circuit board.

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. 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.



DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. 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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