

SMD ■ Side View LEDs

BL-3006NN1PM2C-XXXXXXXXXXXXXXXXXX



Features

- Side view white LED.
- White SMT package.
- Lead frame package with individual 2 pins.
- Wide viewing angle
- Soldering methods: IR reflow soldering
- Pb-free
- ESD protection.
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).

Description

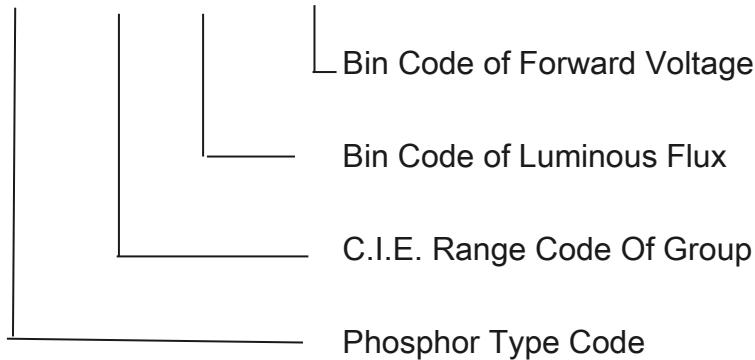
Due to the package design, 3006N has wide viewing angle, low power consumption and white LEDs are devices which are materialized by combing blue chips and special phosphor. This feature makes the LED ideal for light guide application.

Applications

- .LCD back light.
- .Mobile phones.
- .Illuminations.
- .Switch lights.

Coding:

BL-3006NN1PM2C-XXXX XXXXX XXXXX



Phosphor Type Code

Code	Yellow Phosphor
M2	562 Emitting WL

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Pure White	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10 @10ms)	I_{FP}	60	mA
Power Dissipation	P_d	110	mW
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +90	°C
Soldering Temperature	T_{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

Notes: *1The products are sensitive to static electricity and must be carefully taken when handling products.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Flux	Φ	7.50	-----	9.25	lm	I _F =20mA
Forward Voltage	V _F	2.7	-----	3.4	volt	I _F =20mA
Viewing Angle	2 $\theta_{1/2}$	-----	115	-----	deg	I _F =20mA
Reverse Current	I _R	-----	-----	1	μA	V _R =5V

Notes:

1. Tolerance of Luminous Flux: ±5%.
2. Tolerance of Forward Voltage: ±0.05V.

Bin Range of Luminous Flux

Condition	lm(Min.)	lm(Max.)	Unit	Condition
B75	7.50	7.75	lm	I _F =20mA
B77	7.75	8.00		
B80	8.00	8.25		
B82	8.25	8.50		
B85	8.50	8.75		
B87	8.75	9.00		
B90	9.00	9.25		

Notes: Tolerance of Luminous Flux: ±5%.

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
D27	2.7	2.8	V	I _F =20mA
D28	2.8	2.9		
D29	2.9	3.0		
D30	3.0	3.1		
D31	3.1	3.2		
D32	3.2	3.3		
D33	3.3	3.4		

Note: Tolerance of Forward Voltage: ± 0.05V

Chromaticity Coordinates of Bin Code

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
F5	0.2600	0.2198	G5	0.2650	0.2290
	0.2600	0.2298		0.2650	0.2390
	0.2650	0.2390		0.2700	0.2482
	0.2650	0.2290		0.2700	0.2382
H5	0.2700	0.2382	I5	0.2750	0.2474
	0.2700	0.2482		0.2750	0.2574
	0.2750	0.2574		0.2800	0.2666
	0.2750	0.2474		0.2800	0.2566
J5	0.2800	0.2566	K5	0.2850	0.2658
	0.2800	0.2666		0.2850	0.2758
	0.2850	0.2758		0.2900	0.2850
	0.2850	0.2658		0.2900	0.2750
L5	0.2900	0.2750	M5	0.2950	0.2842
	0.2900	0.2850		0.2950	0.2942
	0.2950	0.2942		0.3000	0.3034
	0.2950	0.2842		0.3000	0.2934
N5	0.3000	0.2934	O5	0.3050	0.3026
	0.3000	0.3034		0.3050	0.3126
	0.3050	0.3126		0.3100	0.3218
	0.3050	0.3026		0.3100	0.3118

Note: Tolerance of Chromaticity Coordinates: ±0.005

Chromaticity Coordinates of Bin Code

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
F6	0.2600	0.2098	G6	0.2650	0.2190
	0.2600	0.2198		0.2650	0.2290
	0.2650	0.2290		0.2700	0.2382
	0.2650	0.2190		0.2700	0.2282
H6	0.2700	0.2282	I6	0.2750	0.2374
	0.2700	0.2382		0.2750	0.2474
	0.2750	0.2474		0.2800	0.2566
	0.2750	0.2374		0.2800	0.2466
J6	0.2800	0.2466	K6	0.2850	0.2558
	0.2800	0.2566		0.2850	0.2658
	0.2850	0.2658		0.2900	0.2750
	0.2850	0.2558		0.2900	0.2650
L6	0.2900	0.2650	M6	0.2950	0.2742
	0.2900	0.2750		0.2950	0.2842
	0.2950	0.2842		0.3000	0.2934
	0.2950	0.2742		0.3000	0.2834
N6	0.3000	0.2834	O6	0.3050	0.2926
	0.3000	0.2934		0.3050	0.3026
	0.3050	0.3026		0.3100	0.3118
	0.3050	0.2926		0.3100	0.3018

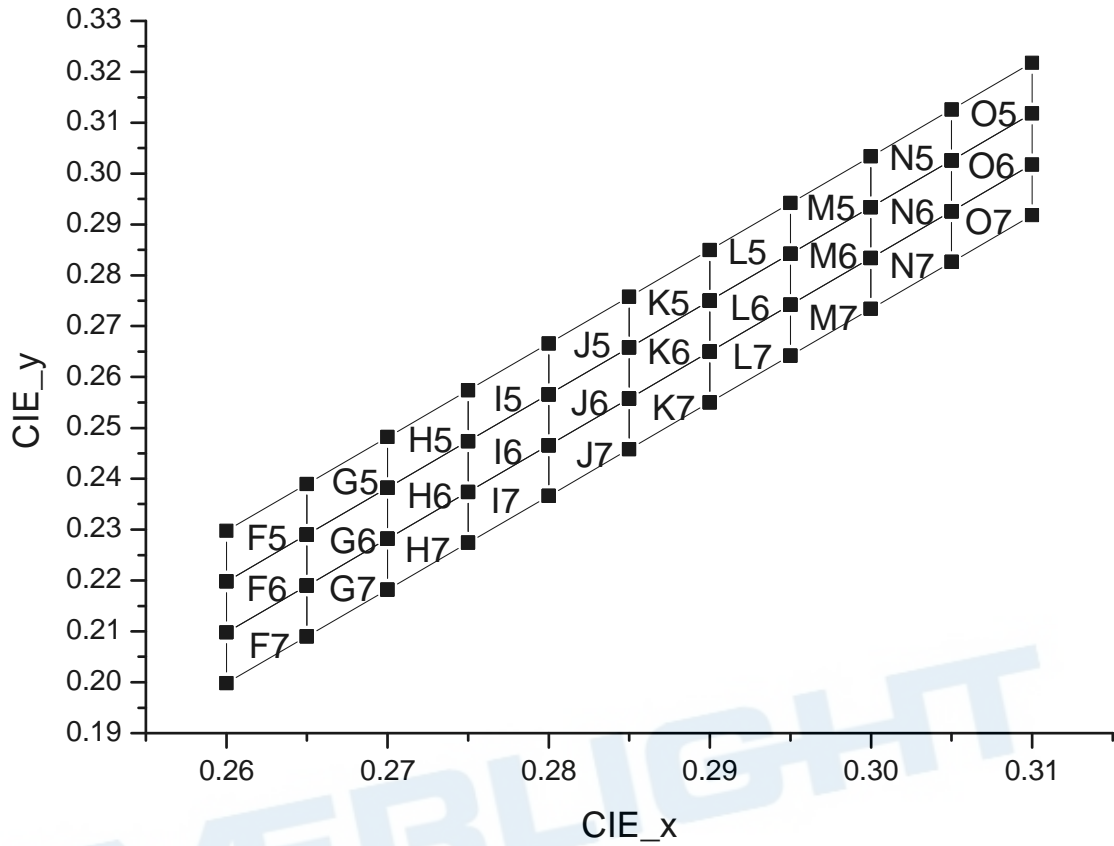
Note: Tolerance of Chromaticity Coordinates: ±0.005

Chromaticity Coordinates of Bin Code

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
F7	0.2600	0.1998	G7	0.2650	0.2090
	0.2600	0.2098		0.2650	0.2190
	0.2650	0.2190		0.2700	0.2282
	0.2650	0.2090		0.2700	0.2182
H7	0.2700	0.2182	I7	0.2750	0.2274
	0.2700	0.2282		0.2750	0.2374
	0.2750	0.2374		0.2800	0.2466
	0.2750	0.2274		0.2800	0.2366
J7	0.2800	0.2366	K7	0.2850	0.2458
	0.2800	0.2466		0.2850	0.2558
	0.2850	0.2558		0.2900	0.2650
	0.2850	0.2458		0.2900	0.2550
L7	0.2900	0.2550	M7	0.2950	0.2642
	0.2900	0.2650		0.2950	0.2742
	0.2950	0.2742		0.3000	0.2834
	0.2950	0.2642		0.3000	0.2734
N7	0.3000	0.2734	O7	0.3050	0.2826
	0.3000	0.2834		0.3050	0.2926
	0.3050	0.2926		0.3100	0.3018
	0.3050	0.2826		0.3100	0.2918

Note: Tolerance of Chromaticity Coordinates: ±0.005

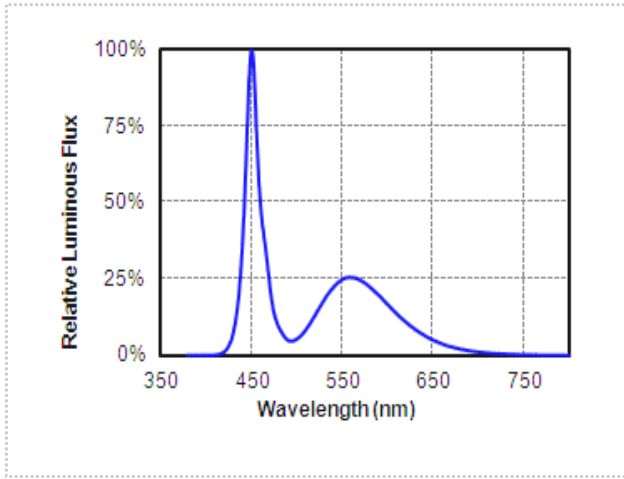
Chromaticity Coordinates of Bin Code



Typical Electro-Optical Characteristics Curves

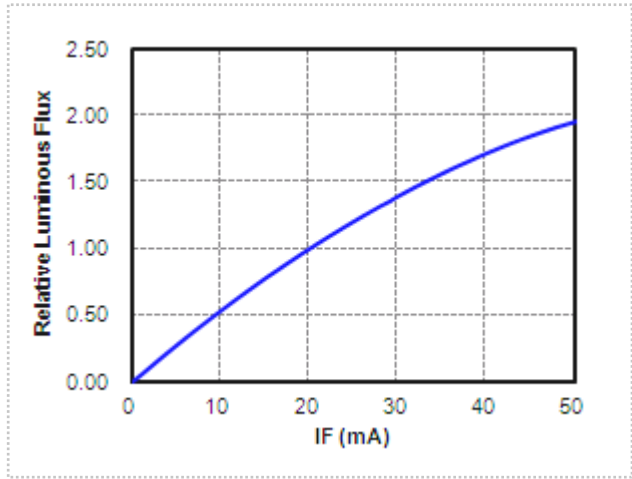
1. Spectrum Distribution

($T_a=25^\circ\text{C}$, $I_F=20\text{mA}$)



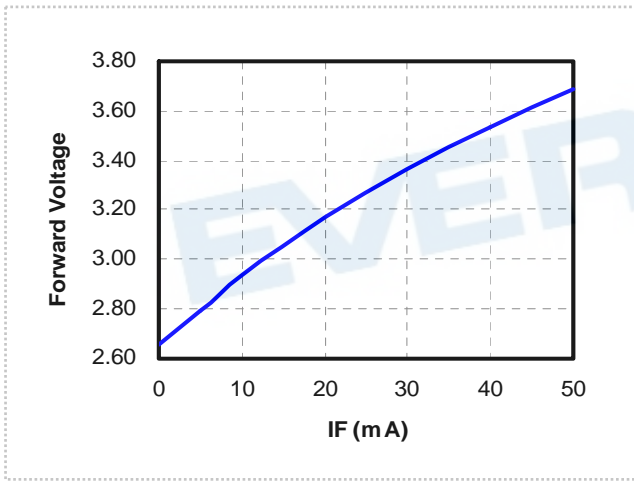
2. Relative Luminous Flux vs. Forward Current

($T_a=25^\circ\text{C}$)



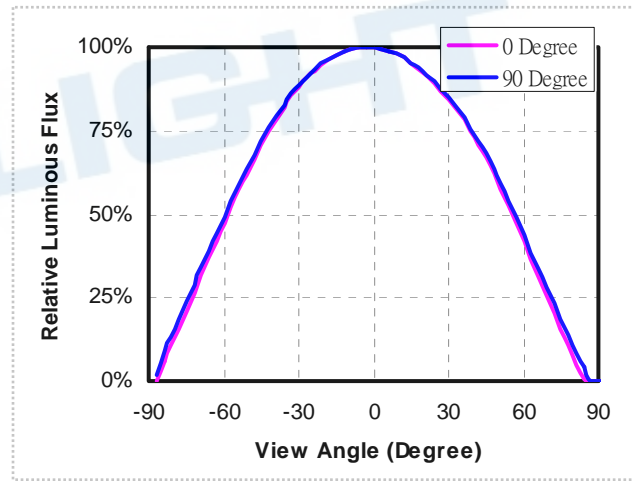
3. Relative Forward Voltage vs. Forward Current

($T_A=25^\circ\text{C}$)



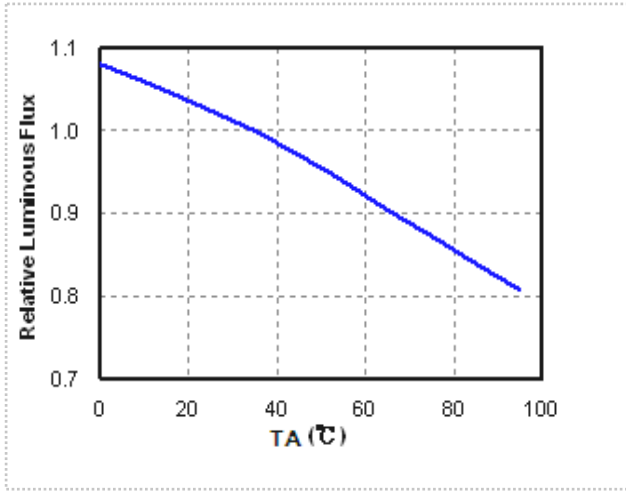
4. Radiation Diagram

($T_A=25^\circ\text{C}$, $I_F=20\text{mA}$)

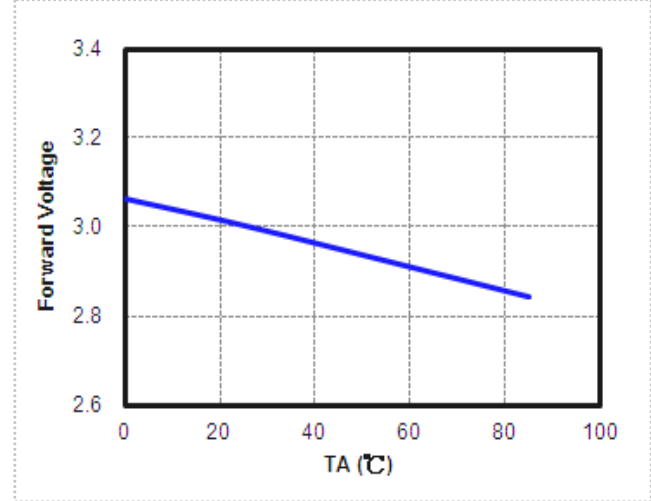


Typical Electro-Optical-Thermal Characteristics Curves

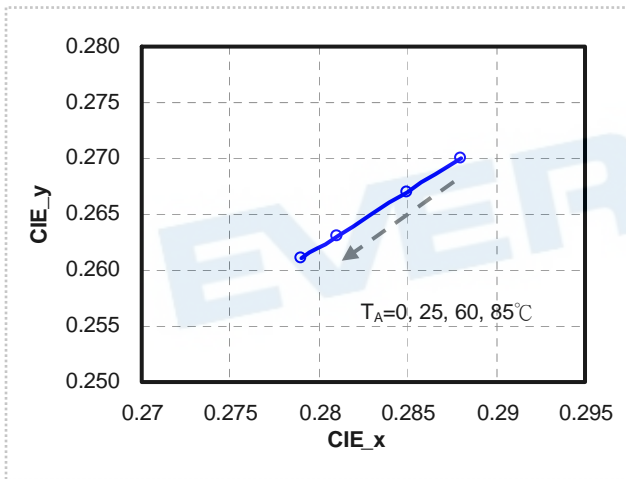
5. Relative Luminous Flux vs. Ambient Temperature
 ($I_F=20\text{mA}$)



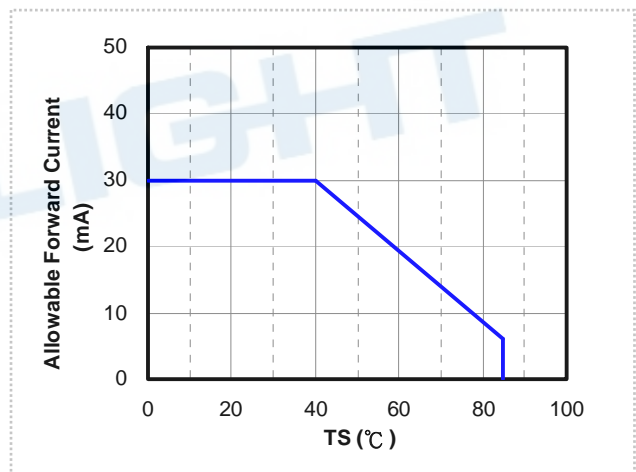
6. Forward Voltage vs. Ambient Temperature
 ($I_F=20\text{mA}$)



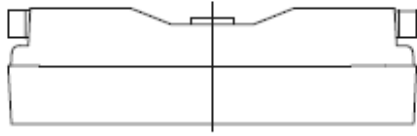
7. Chromaticity Coordinates vs. Ambient Temperature
 ($I_F=20\text{mA}$)



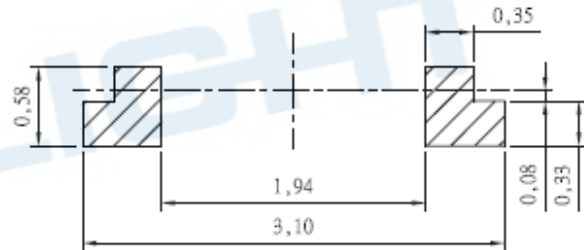
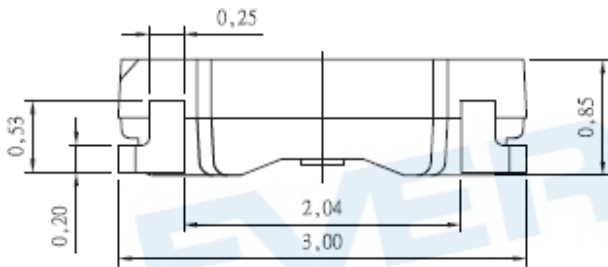
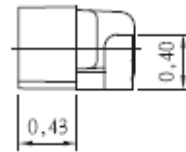
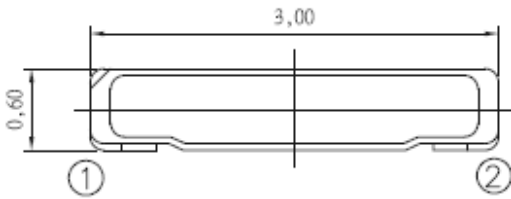
8. Forward Current De-rating Curve



Package Dimension



Polarity



Recommend solder pad

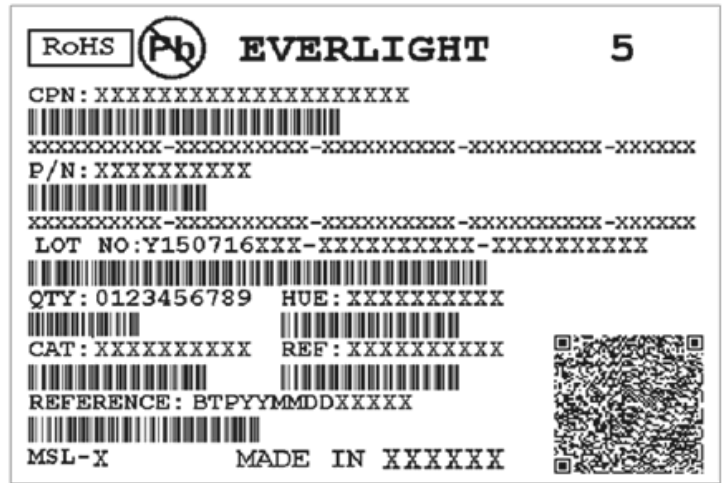
Bot. view

Note: Tolerances unless dimension are ± 0.1 mm, unit = mm.

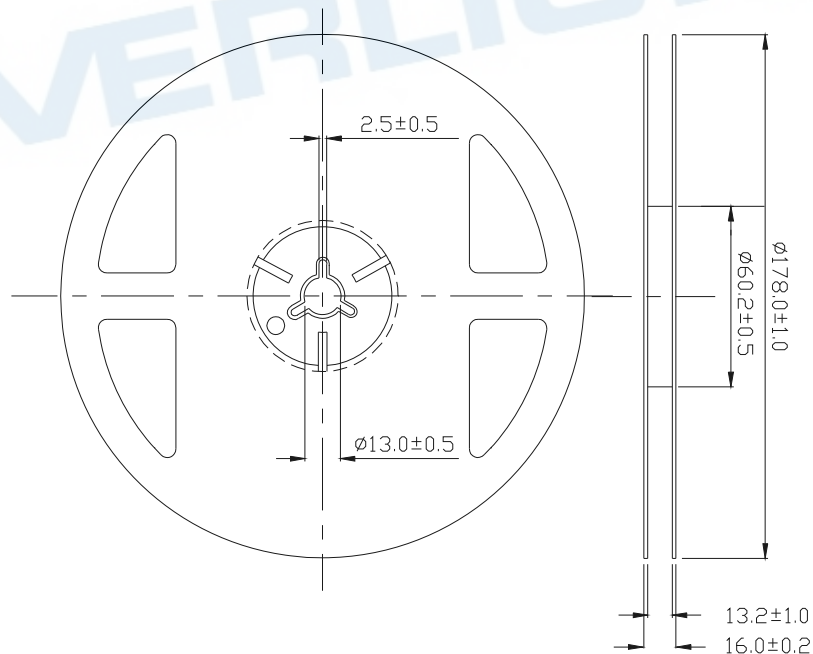
Moisture Resistant Packing Materials

Label Explanation

- CAT: Luminous Flux Rank
- HUE: Chromaticity Coordinates
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: C.I.E Range Code Of Group
- REF: Forward Voltage Rank
- LOT No: Lot Number
- REF: Forward Voltage Rank



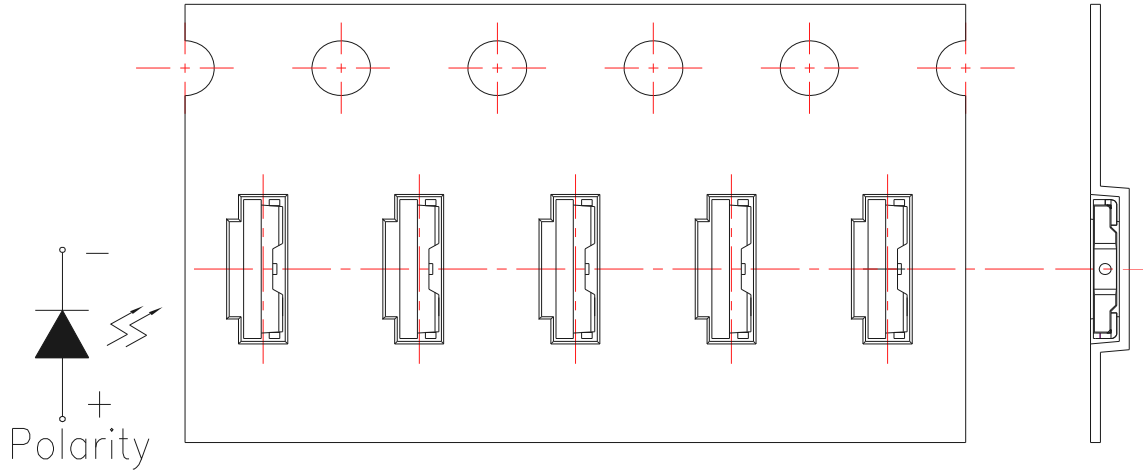
Reel Dimensions



Note: The tolerances unless mentioned is ± 0.1 mm, Unit = mm

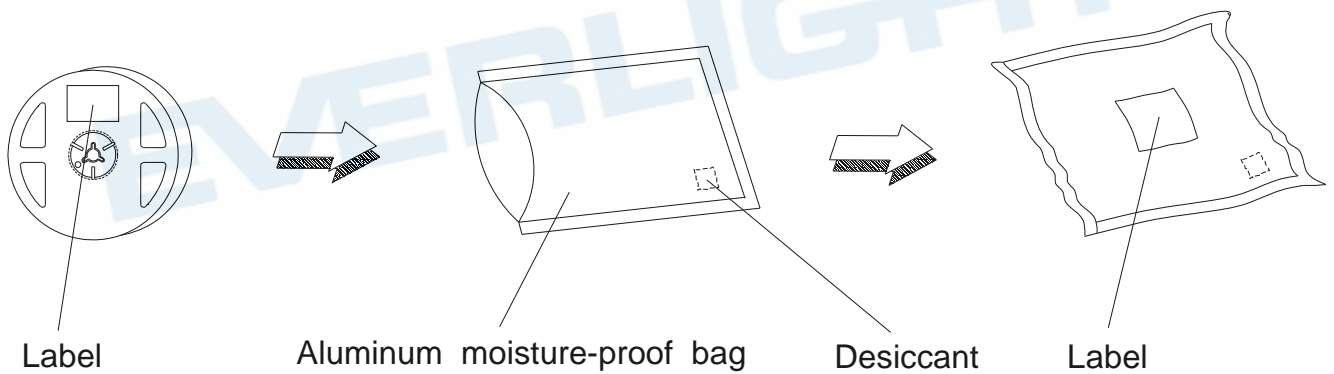
Carrier Tape Dimensions: Loaded Quantity 250 up/500/1000/2000 pcs. Per Reel

Progressive direction



Note: Tolerance unless mentioned is ± 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	Item	Test Condition		Test Hours / Times	Criteria	
		Temp./ Humidity	I _F (mA)		I _V @ 20mA	V _F @ 20mA
1	Reflow Soldering	T _{Sld} = 260°C, Max. 10sec.		2 times	<±10%	<±10%
2	Temperature Cycle	-40°C 30min.	~ (5min.)	100°C 30min.	200 cycles	
3	Thermal Shock	-10°C 20min.	~ (<15sec.)	100°C 20min.	200 cycles	
4	Low Temp. Storage	T _a = -40°C		--	1000 hrs	
5	High Temp. Storage	T _a = 100°C		--	1000 hrs	
6	Temp. Humidity Storage	T _a = 60°C/ 90%RH		--	1000 hrs	I _V > 70%, V _F < 110%,
7	Steady State Operating Life of Low Temp.	T _a = -40°C		20	1000 hrs	
8	Steady State Operating Life Condition 1	T _a = 25°C/ Room Humidity		20	1000 hrs	
9	Steady State Operating Life Condition 2	T _a = 60°C		20	1000 hrs	
10	Steady State Operating Life of High Temp.	T _a = 85°C		5	1000 hrs	
11	Steady State Operating Life of High Humidity Heat	T _a = 60°C/ 90%RH		20	1000 hrs	

Notes:

Sampling for each test item: 22 (pcs.)

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.

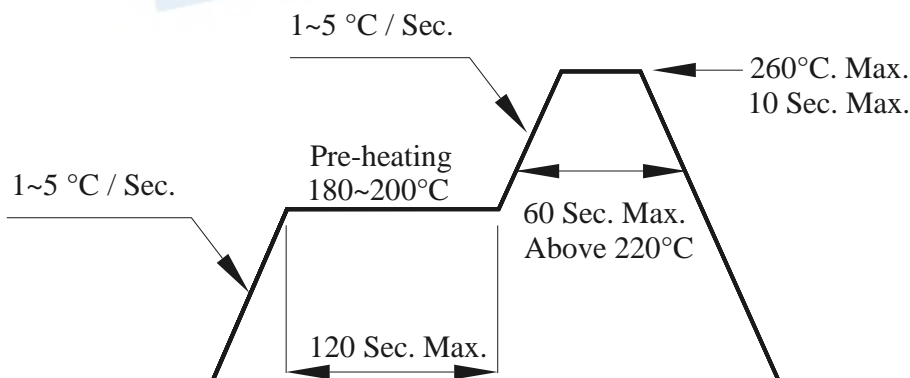
2.2 Before opening the package: The LEDs should be used within one year and kept at 30°C or less and 70%RH or less.

2.3 After opening the package: We recommend that the LED should be soldered quickly (within 3 days). The soldering condition is 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. (One time only)

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.

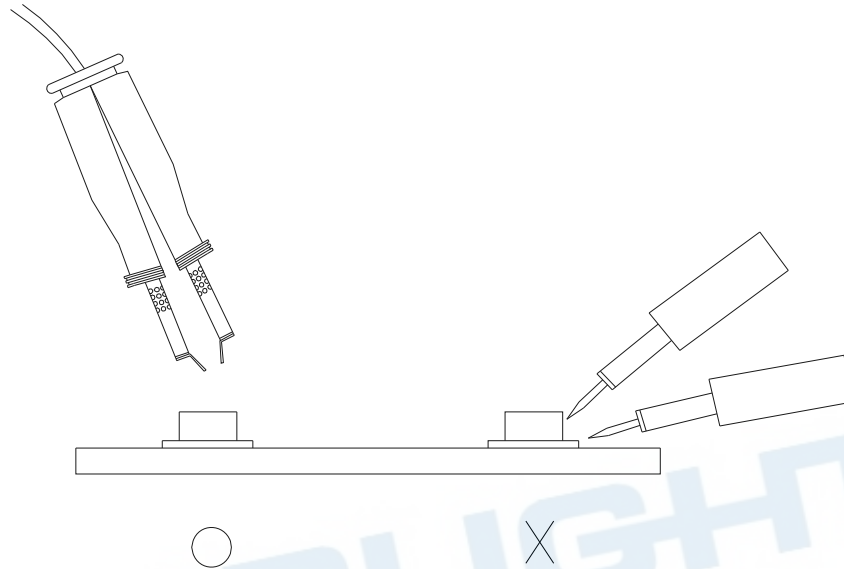
4. Soldering Iron

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.



6. Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound