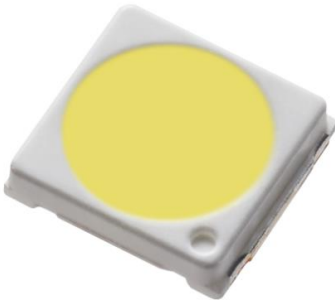


SMD ▪ Top View LEDs BL-3030GN2ENA



Features

- Top view white LED
- High flux output
- High current capability
- White package
- Wide viewing angle
- 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, 3030 package 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

- Backlight for LCD Monitor/TV
- Light pipe application
- Indicator and backlight in office and family equipment
- General use

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Cold White	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage*1	VR	5	V
Forward Current*1	IF	800	mA
Peak Forward Current (Duty 1/10 @10ms)*1	IFP	960	mA
Power Dissipation	Pd	2960	mW
Electrostatic Discharge(HBM)*2	ESD	2KV, Test/Result: 0/50. Test Times: 3Time.	V
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Junction Temperature*3	Tj	≤ 125	°C
Soldering Temperature	Tsol	Reflow Soldering : 245 °C for 10 sec. Hand Soldering : 260 °C for 3 sec.	

Notes:

1. For each die.
2. The products are sensitive to static electricity and must be carefully taken when handling products.
3. Maximum condition is not guarantee for Life time.

Electro-Optical Characteristics (Ta =25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Flux	Φ	175	-----	225	lm	IF=600mA
Viewing Angle	2θ1/2	-----	120	-----	deg	
Thermal Resistance (Junction to Lead)	Rthj-s	-----	14	-----	°C/W	
Forward Voltage	VF	3.2	-----	3.7	V	

Note:

1. Tolerance of Luminous flux: ±7%.
2. Tolerance of Forward Voltage: ±0.05V

Bin Range of Luminous Flux

Bin Code	Min.	Max.	Unit	Condition
H175	175	180	lm	I _F =600mA
H180	180	185		
H185	185	190		
H190	190	195		
H195	195	200		
H200	200	205		
H205	205	210		
H210	210	215		
H215	215	220		
H220	220	225		

Note:
Tolerance of Luminous flux: ±7%.

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
D32	3.2	3.3	V	I _F =600mA
D33	3.3	3.4		
D34	3.4	3.5		
D35	3.5	3.6		
D36	3.6	3.7		

Note:
Tolerance of Forward Voltage: ±0.05V.

Bin Range of Chromaticity Coordinates

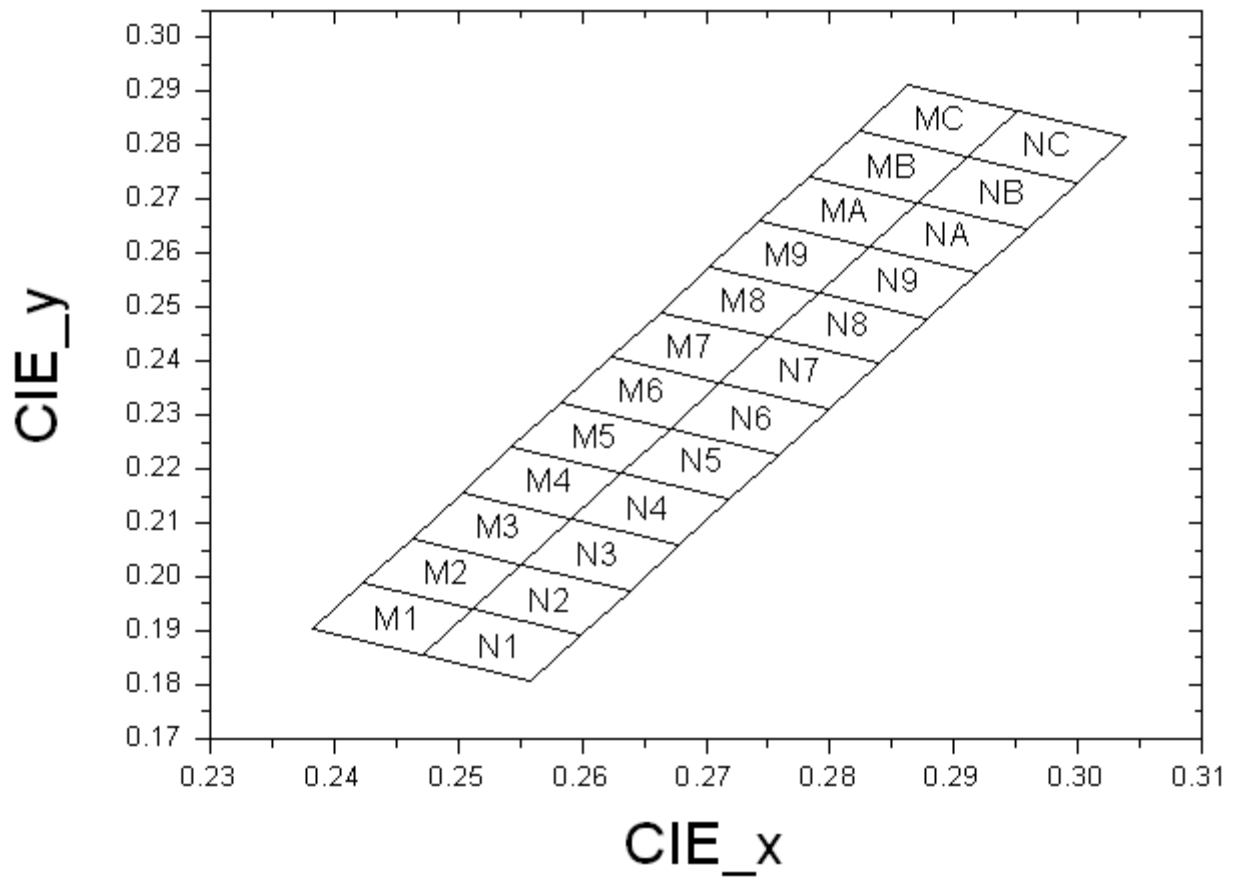
Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
M1	0.2423	0.1987	M2	0.2463	0.2071
	0.2511	0.1939		0.2551	0.2023
	0.2471	0.1855		0.2511	0.1939
	0.2383	0.1903		0.2423	0.1987
M3	0.2503	0.2155	M4	0.2543	0.2239
	0.2591	0.2107		0.2631	0.2191
	0.2551	0.2023		0.2591	0.2107
	0.2463	0.2071		0.2503	0.2155
M5	0.2583	0.2323	M6	0.2623	0.2407
	0.2671	0.2275		0.2711	0.2359
	0.2631	0.2191		0.2671	0.2275
	0.2543	0.2239		0.2583	0.2323
M7	0.2663	0.2491	M8	0.2703	0.2575
	0.2751	0.2443		0.2791	0.2527
	0.2711	0.2359		0.2751	0.2443
	0.2623	0.2407		0.2663	0.2491
M9	0.2743	0.2659	MA	0.2783	0.2743
	0.2831	0.2611		0.2871	0.2695
	0.2791	0.2527		0.2831	0.2611
	0.2703	0.2575		0.2743	0.2659
MB	0.2823	0.2827	MC	0.2863	0.2911
	0.2911	0.2779		0.2951	0.2863
	0.2871	0.2695		0.2911	0.2779
	0.2783	0.2743		0.2823	0.2827

Bin Range of Chromaticity Coordinates

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
N1	0.2511	0.1939	N2	0.2551	0.2023
	0.2599	0.1891		0.2639	0.1975
	0.2559	0.1807		0.2599	0.1891
	0.2471	0.1855		0.2511	0.1939
N3	0.2591	0.2107	N4	0.2631	0.2191
	0.2679	0.2059		0.2719	0.2143
	0.2639	0.1975		0.2679	0.2059
	0.2551	0.2023		0.2591	0.2107
N5	0.2671	0.2275	N6	0.2711	0.2359
	0.2759	0.2227		0.2799	0.2311
	0.2719	0.2143		0.2759	0.2227
	0.2631	0.2191		0.2671	0.2275
N7	0.2751	0.2443	N8	0.2791	0.2527
	0.2839	0.2395		0.2879	0.2479
	0.2799	0.2311		0.2839	0.2395
	0.2711	0.2359		0.2751	0.2443
N9	0.2831	0.2611	NA	0.2871	0.2695
	0.2919	0.2563		0.2959	0.2647
	0.2879	0.2479		0.2919	0.2563
	0.2791	0.2527		0.2831	0.2611
NB	0.2911	0.2779	NC	0.2951	0.2863
	0.2999	0.2731		0.3039	0.2815
	0.2959	0.2647		0.2999	0.2731
	0.2871	0.2695		0.2911	0.2779

Note : 1.Tolerance of Chromaticity Coordinates: ± 0.005 .

The C.I.E. 1931 Chromaticity Diagram



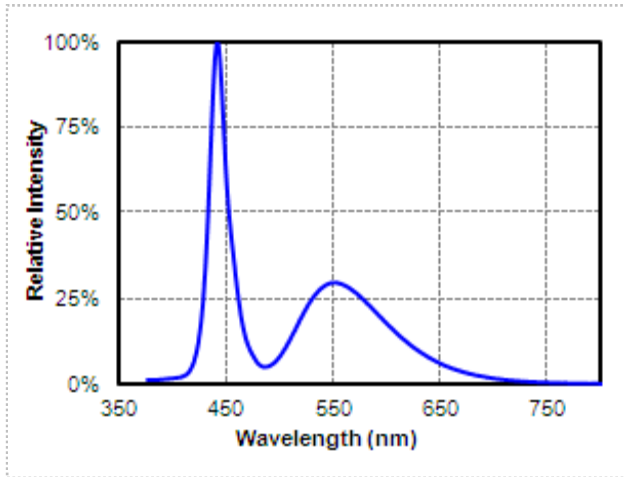
Note:

1. Tolerance of Chromaticity Coordinates: ± 0.005 .

Typical Electro-Optical-Thermal Characteristics Curves

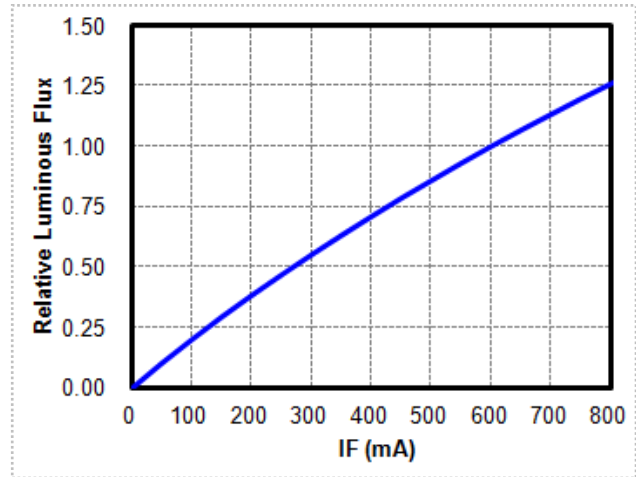
1. Spectrum Distribution

($T_A=25^{\circ}\text{C}$, $I_F=600\text{mA}$)



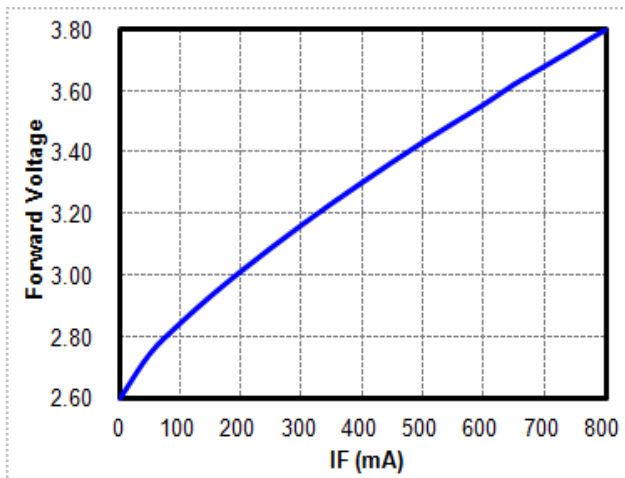
2. Relative Luminous Flux vs. Forward Current

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



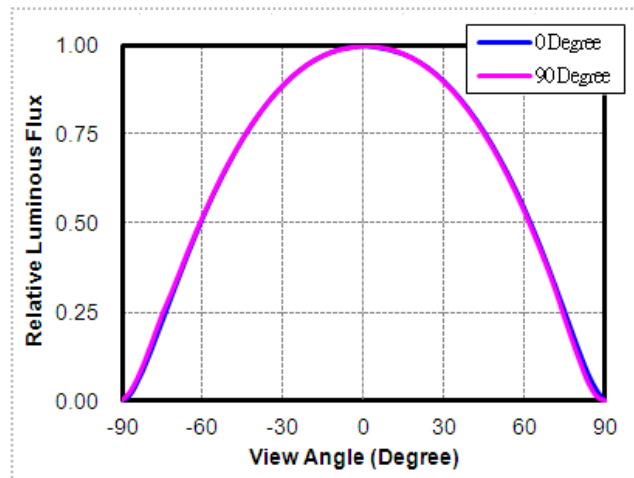
3. Relative Forward Voltage vs. Forward Current

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



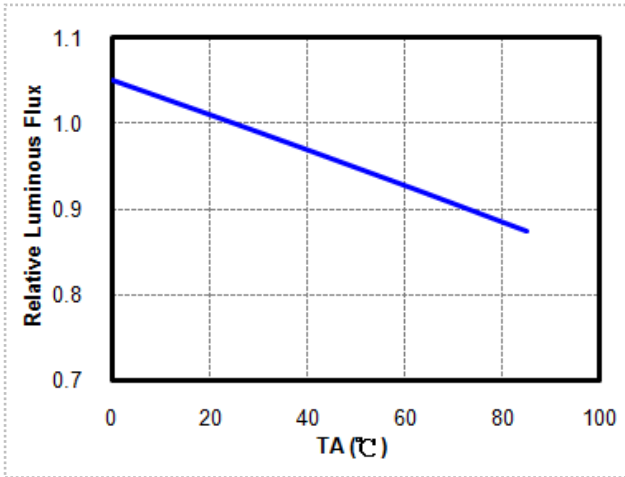
4. Radiation Diagram

($T_A=25^{\circ}\text{C}$, $I_F=600\text{mA}$)

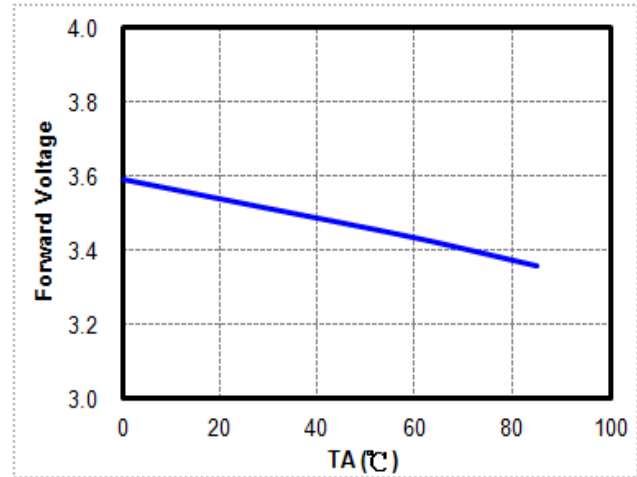


Typical Electro-Optical-Thermal Characteristics Curves

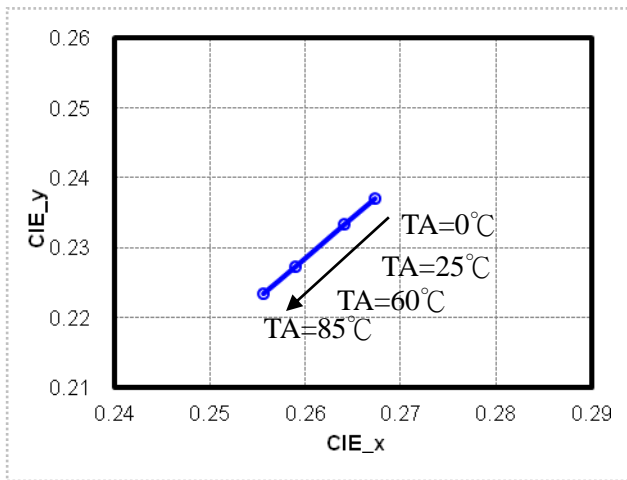
5. Relative Luminous Flux vs. Ambient Temperature
($I_F=600\text{mA}$)



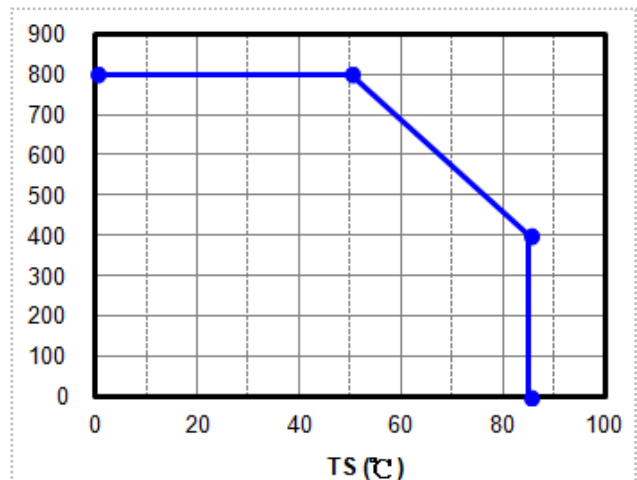
6. Forward Voltage vs. Ambient Temperature
($I_F=600\text{mA}$)



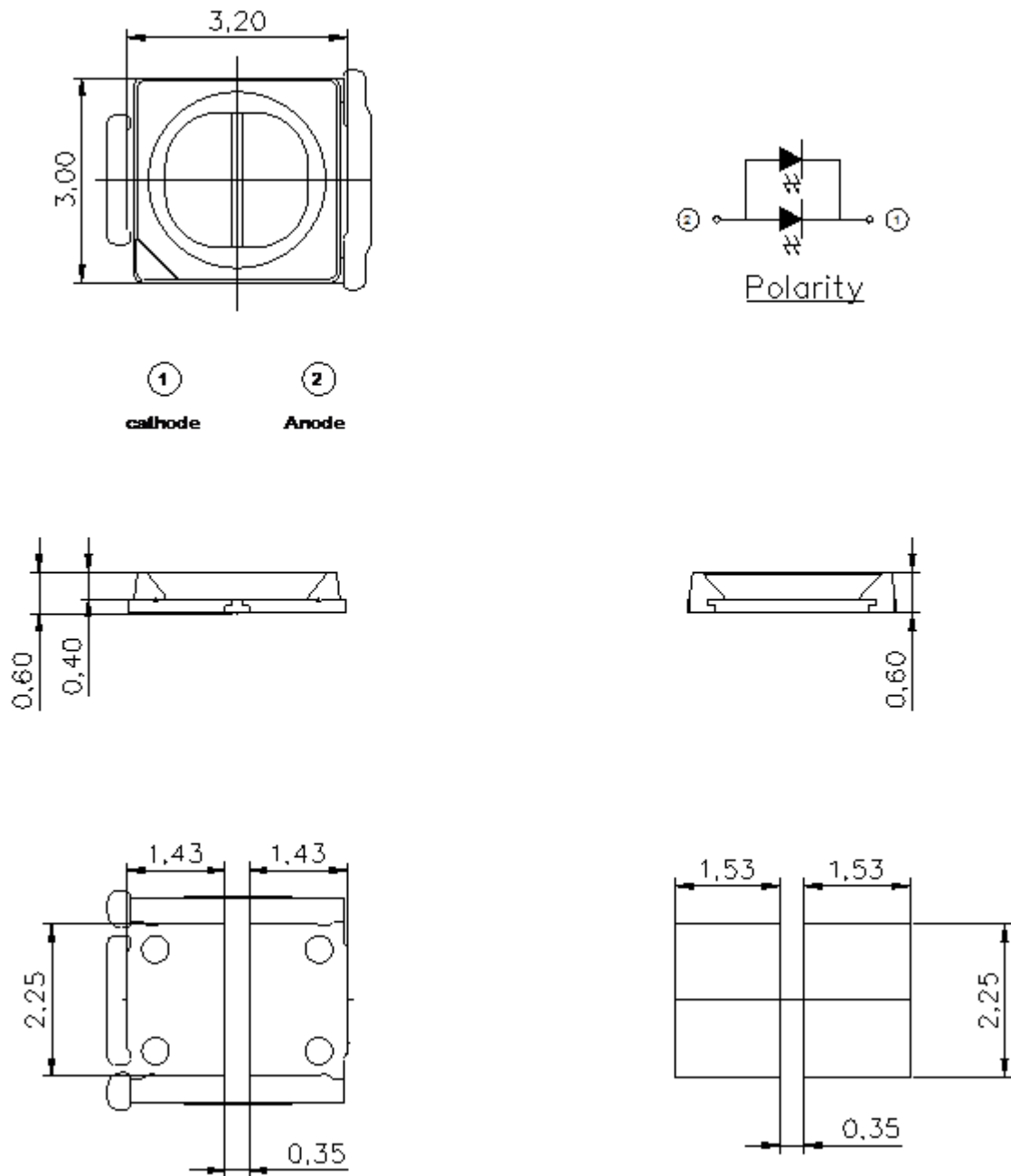
7. Chromaticity Coordinates vs. Ambient Temperature
($I_F=600\text{mA}$)



8. Forward Current De-rating Curve



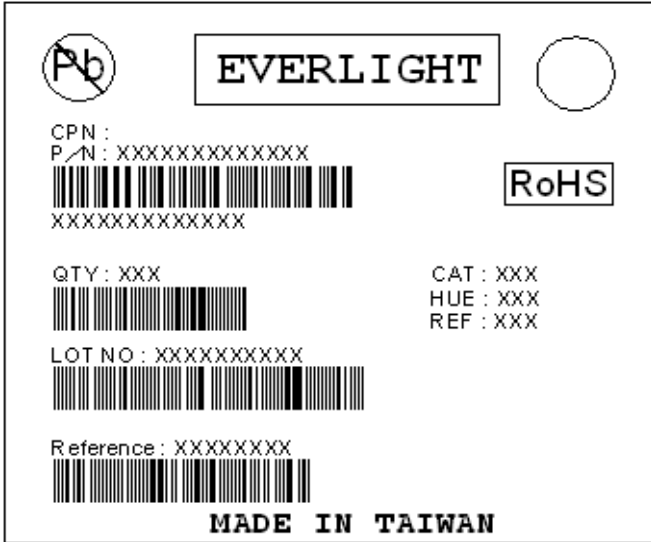
Package Dimension



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

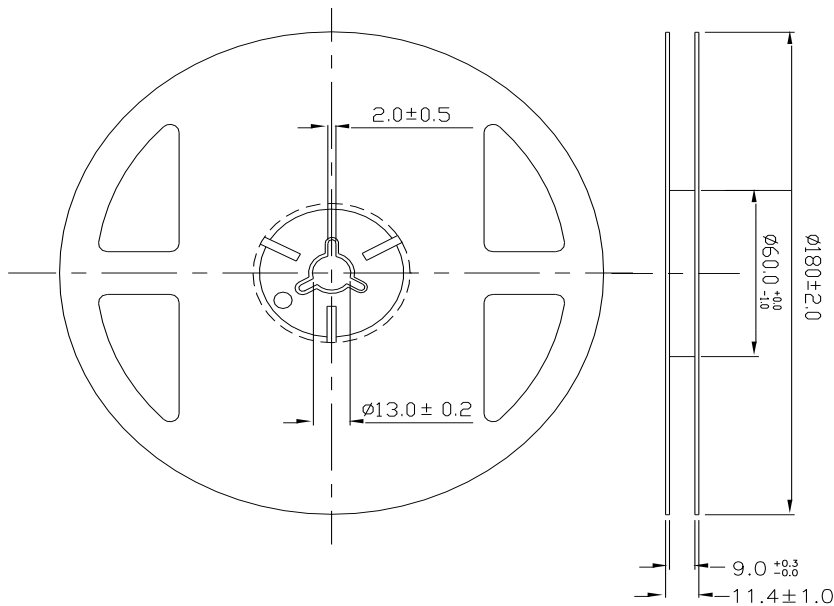
Moisture Resistant Packing Materials

Label Explanation



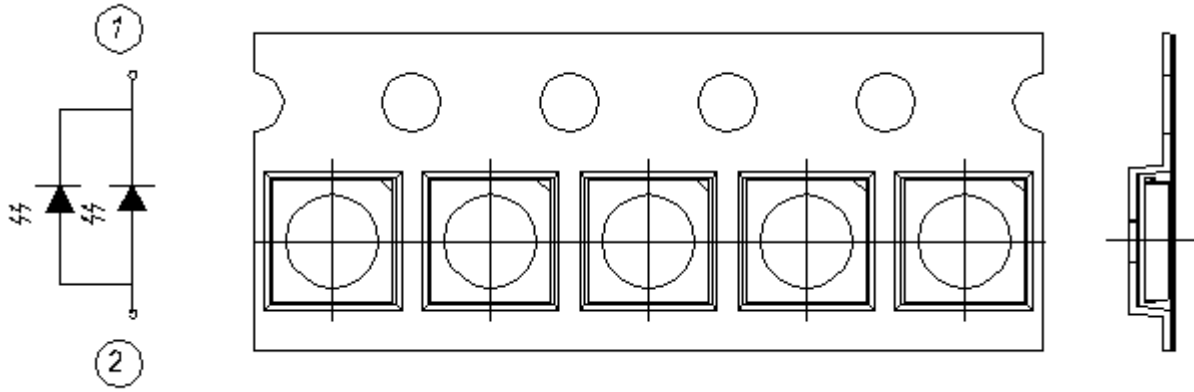
- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Chromaticity Coordinates
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



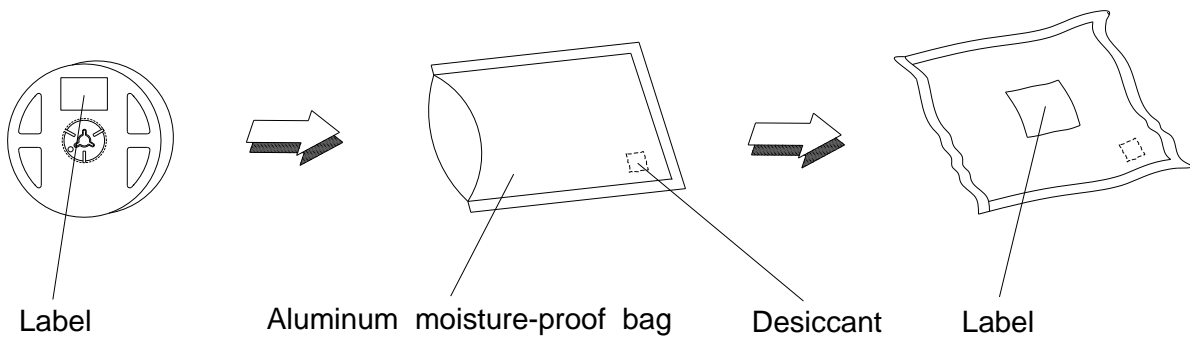
Note:
 Tolerances unless mentioned ± 0.1 mm. Unit = mm

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



Note:
Tolerance unless mentioned is $\pm 0.1\text{mm}$; 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 Conition		Test Hours/ Times	Criteria (at std. IF)
		Temp./ Humidity	IF (mA)		
1	Reflow Soldering	Temp.: 260°C±5°C Max. 10 sec.		2 times	ΔIv < ±15% ΔVF < ±15%
2	Thermal Cycle	-40°C ~ 100°C 30min. (5min.) 30min.		100 cycles	Iv > 70%, VF ±10%,
3	Thermal Shock	-40°C ~ 100°C 20min. (<15sec.) 20min.		100 cycles	
4	Low Temp. Storage	TA=-40°C	--	1000 hrs	
5	High Temp. Storage	TA=100°C	--	1000 hrs	
6	Temp. Humidity Storage	TA=60°C / 90%RH	--	1000 hrs	
7	Steady State Operating Life of Low Temp.	TA=-40°C	std.	1000 hrs	
8	Steady State Operating Life Condition 1	TA=25°C / Room Hum.	std.	1000 hrs	
9	Steady State Operating Life Condition 2	TA=60°C	std.	1000 hrs	
10	Steady State Operating Life of High Temp.	TA=85°C	Depend on De-rating Curve	1000 hrs	
11	Steady State Operating Life of High Humidity Heat	TA=60°C / 90%RH	std.	1000 hrs	

Notes:

1. Sampling for each test item: 22 (pcs.)
2. Test board: MCPCB board thickness=1.6mm, copper layer thickness=0.07mm, $R_{th\ j-a} = 50^{\circ}\text{C}/\text{W}$.
3. Measurements are performed after allowing the LEDs to return to room temperature.

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.

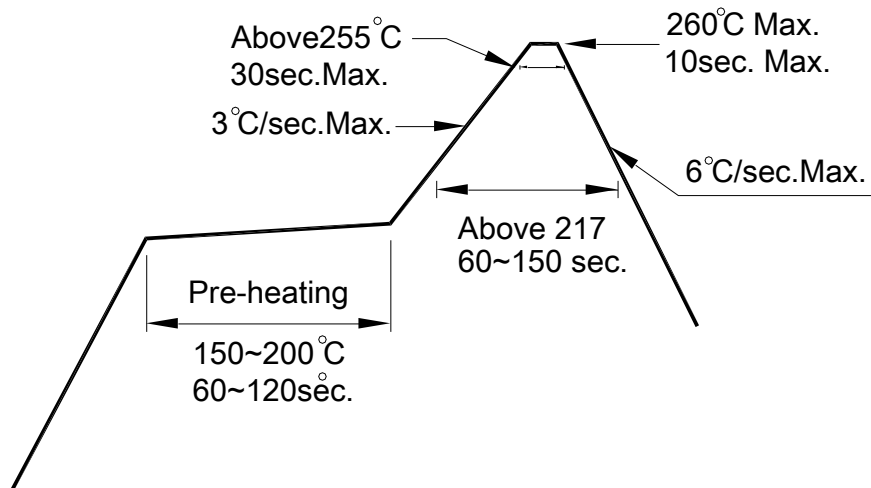
2.3 After opening the package: We recommend that the LED should be soldered quickly (within 3 days). The soldering condition is 30°C or less and 60%RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

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.

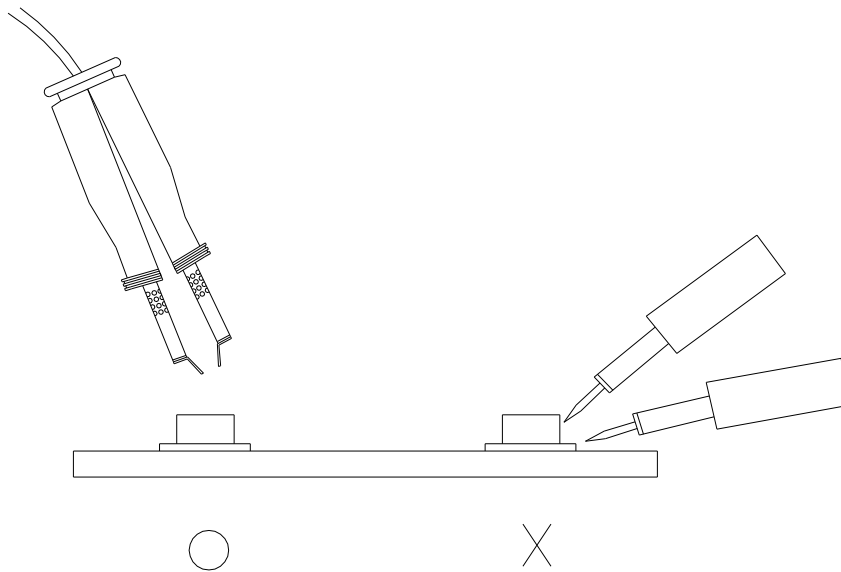
3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 260°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.



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