Technical Data Sheet

Top View LEDs

62-129AUNC/T4048M3M6PBD/TR8-T

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.

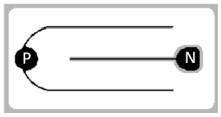
Descriptions

- Due to the package design, 62-129A 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			
Material	**Factory**	**Dimension**	**wavelength**
InGaN	Epistar	17 x 34	447.5~452.5
Emitted Color	**Resin Color**	**Chip picture**	
Cold White	Water Clear		

Coding

62-129AUNC/ xx xx xxxx Pxx/TR8-T

- Chips in Parallel Connection
- Range of Forward Voltage
- Block of Chromaticity Coordinate
- Maximum Luminous Flux
- Minimum Luminous Flux

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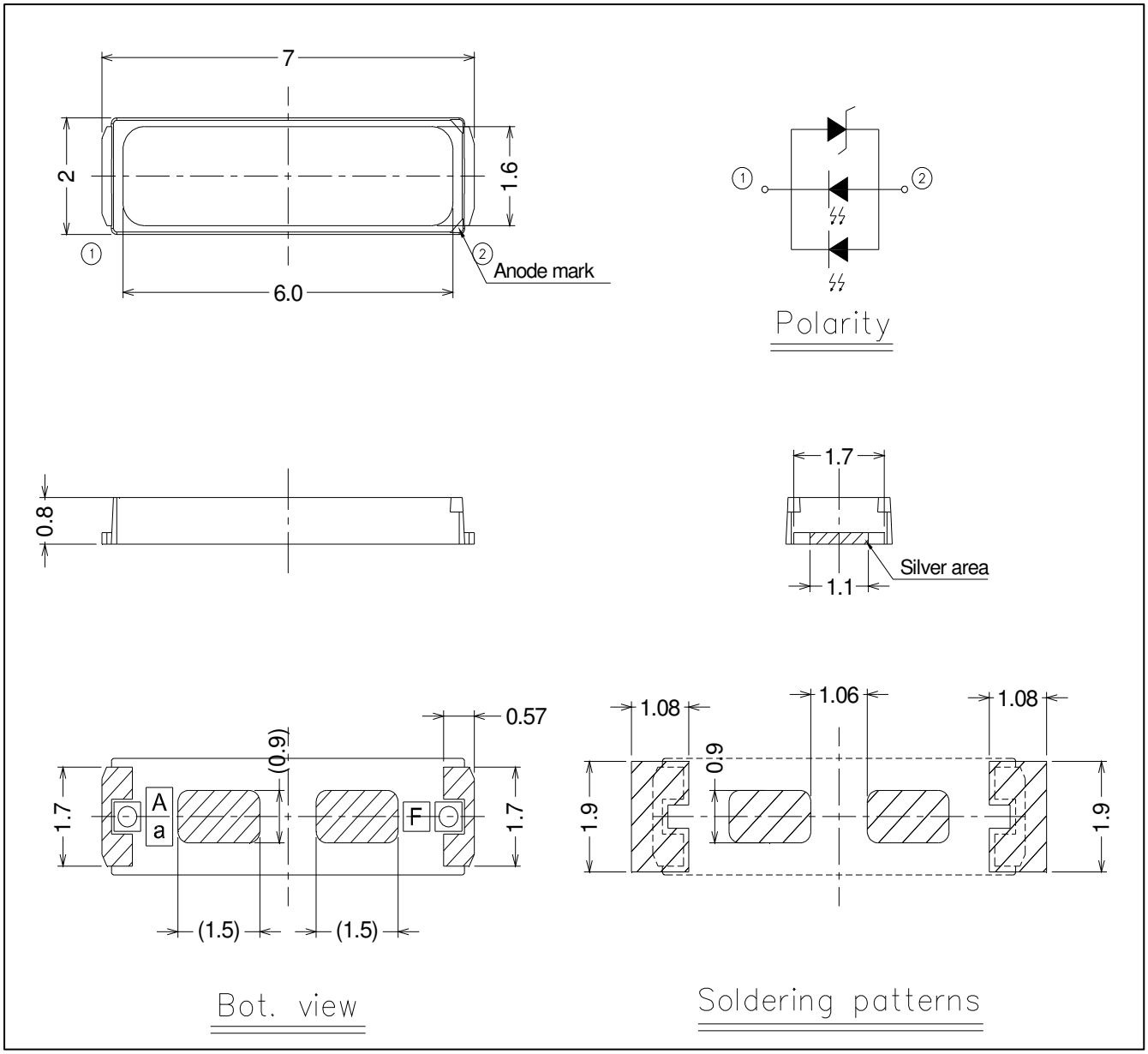
Package Outline Dimensions



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

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Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage*1	V_R	5	V
Forward Current*1	I_F	100	mA
Peak Forward Current (Duty 1/10 @10ms)*1	I_{FP}	300	mA
Power Dissipation	Pd	680	mW
Electrostatic Discharge(HBM)*2	ESD	5000	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +100	℃
Thermal Resistance Junction/ambient	Rth_{j-a}	---	℃/W
Thermal Resistance Junction/solder point	Rth_{j-s}	---	℃/W
Junction temperature	T_j	≦110	℃
Soldering Temperature	Tsol	Reflow Soldering: 260 ℃ for 10 sec. Hand Soldering: 350 ℃ for 3 sec.	

Notes: 1. For each die

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
Luminous Flux	Φ	40	-----	50	lm	I_F=150mA
Viewing Angle	$2\theta_{1/2}$	-----	120	-----	Deg.	
Forward Voltage	V_F	3.0	-----	3.4	V	

Notes: 1. Tolerance of Luminous Flux: ±5%

2. Tolerance of Forward Voltage: ±0.05V

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Bin Range of Luminous Flux

Bin Code	Lm		Condition	MCD	
	Min.	Max.		Min.	Max.
T40	40	42	I_F=150mA	13301.6	13966.68
T42	42	44		13966.68	14631.76
T44	44	46		14631.76	15296.84
T46	46	48		15296.84	15961.92
T48	48	50		15961.92	16627

Note: Tolerance of Luminous Intensity: ±5%

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
PB	3.0	3.2	V	I_F=150mA
PD	3.2	3.4		

Note: Tolerance of Forward Voltage: ±0.05V

Bin Range of λp

Bin Code	Min.	Max.	Unit	Condition
P40	440	445	nm	I_F=150mA
P45	445	450		

Note: Tolerance of λp: ±2nm

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Bin Code of Chromaticity Coordinates

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y	Condition
M3	0.2503	0.2154	M5	0.2584	0.2323	I_F=150mA
	0.2462	0.2070		0.2544	0.2239	
	0.2549	0.2022		0.2631	0.2191	
	0.2590	0.2106		0.2671	0.2275	
M4	0.2631	0.2191	M6	0.2625	0.2408	
	0.2590	0.2106		0.2584	0.2323	
	0.2503	0.2154		0.2671	0.2275	
	0.2544	0.2239		0.2712	0.2360	

Note: Tolerance of Chromaticity Coordinates: ±0.005

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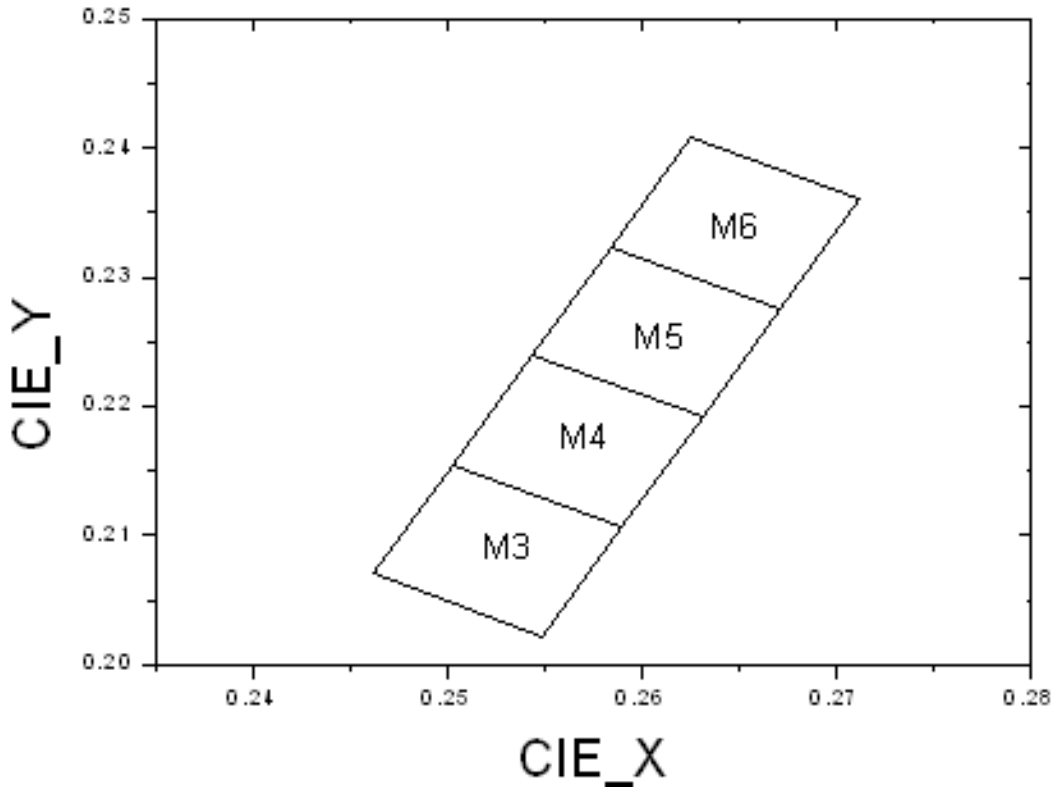
The C.I.E. 1931 Chromaticity Diagram



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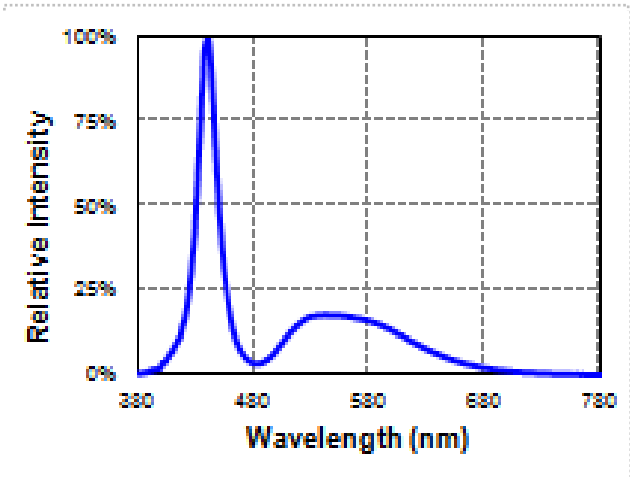
Typical Electro-Optical-Thermal Characteristics Curves

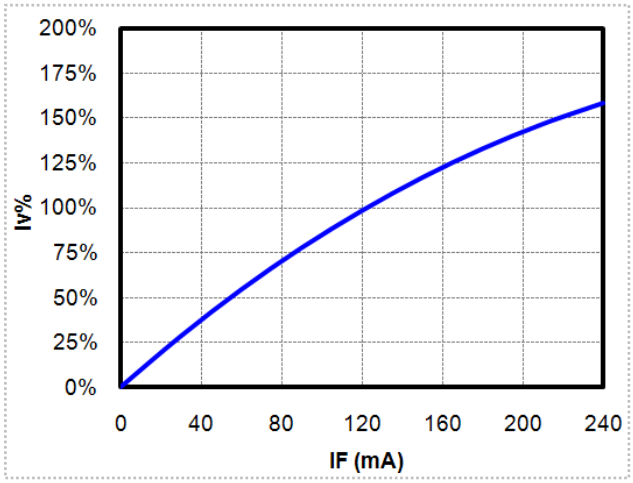
1. Spectrum Distribution

(T_A=25℃, I_F=150mA)



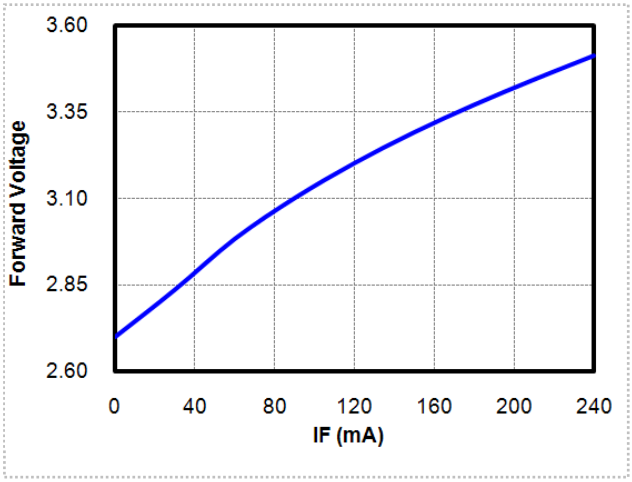
2. Relative Luminous Flux vs. Forward Current

(T_A=25℃)



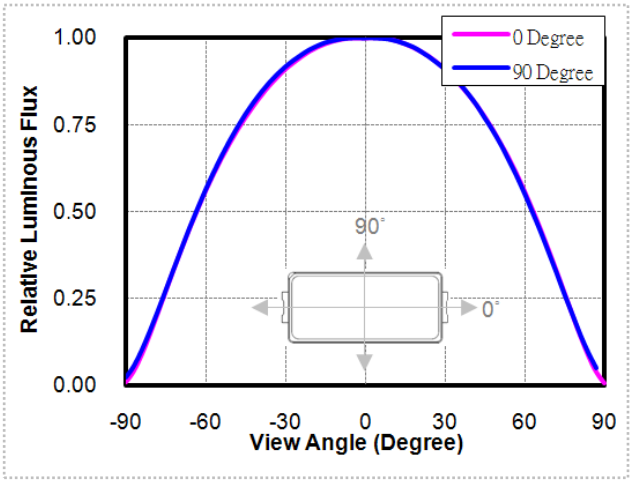
3. Relative Forward Voltage vs. Forward Current

(T_A=25℃)



4. Radiation Diagram

(T_A=25℃, I_F=150mA)



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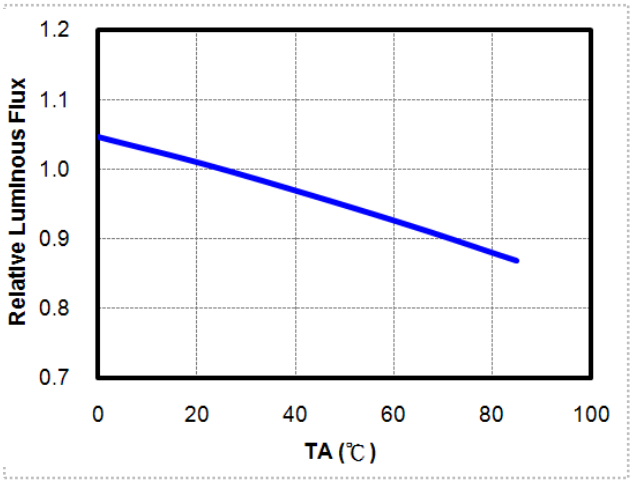
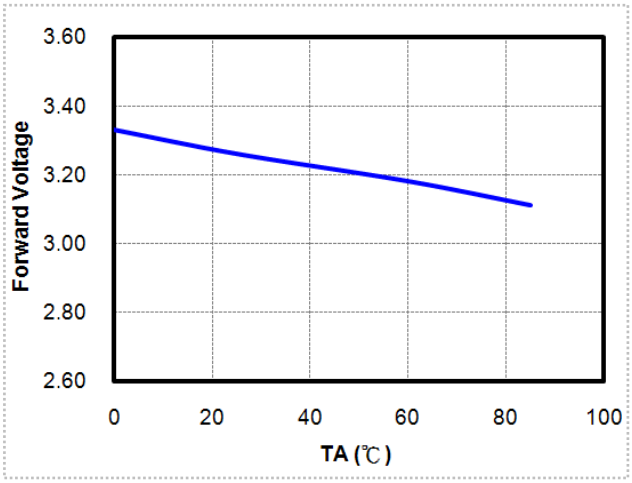
Typical Electro-Optical-Thermal Characteristics Curves

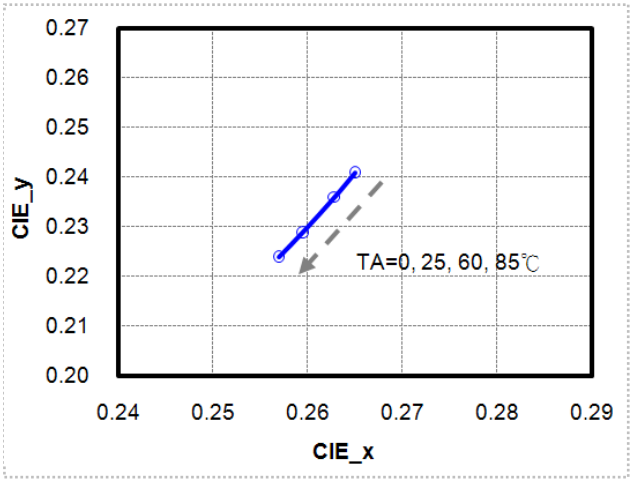
5. Relative Luminous Flux vs. Ambient Temperature (I_F=150mA)



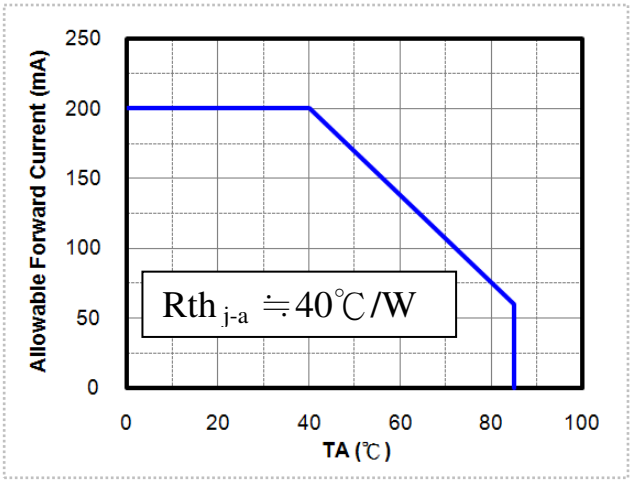
6. Forward Voltage vs. Ambient Temperature (I_F=150mA)



7. Chromaticity Coordinates vs. Ambient Temperature (I_F=150mA)



8. Forward Current De-rating Curve



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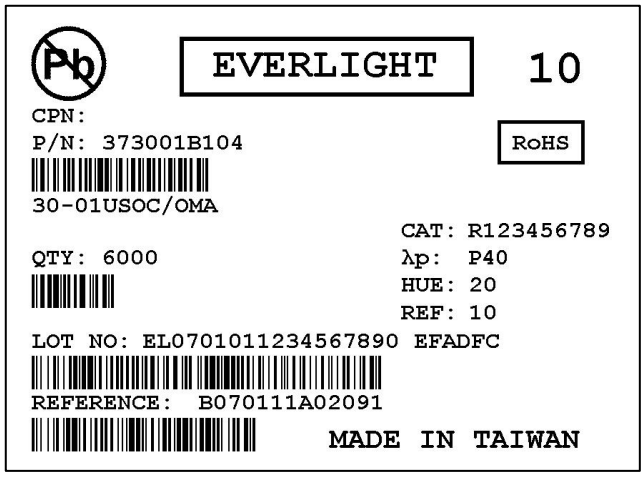
Label Explanation

CAT: Luminous Flux Rank

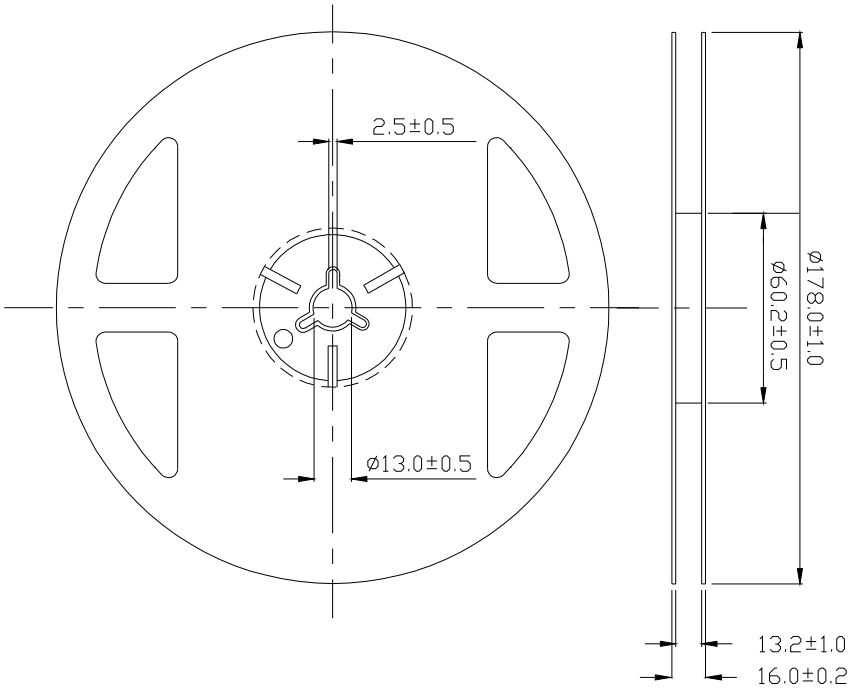
λp：Wavelength Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank



Reel Dimensions



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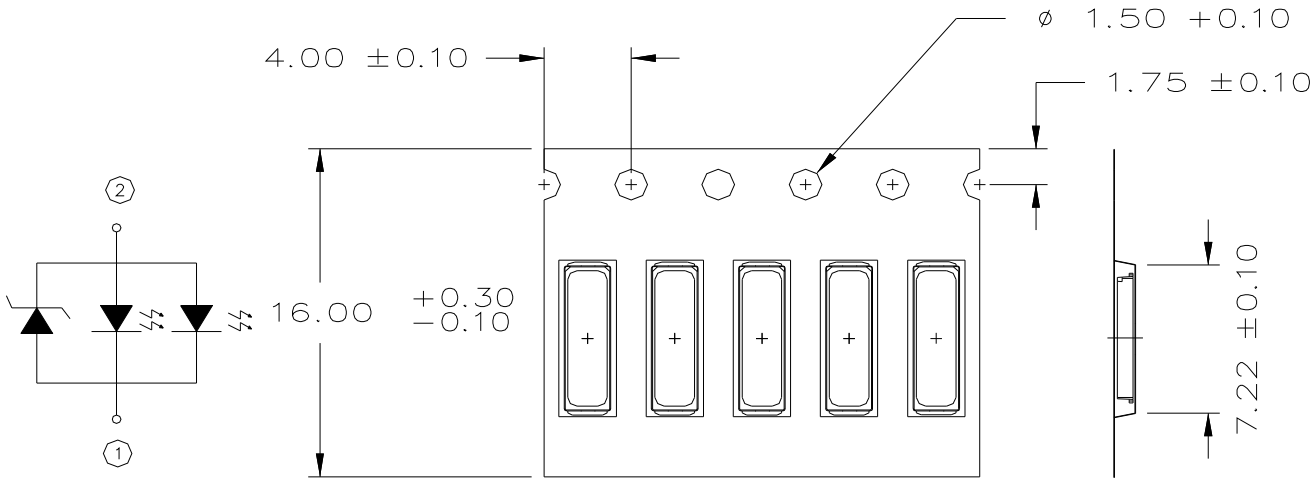
Carrier Tape Dimensions: Loaded Quantity 250 up/500/1000/2000 pcs. Per Reel



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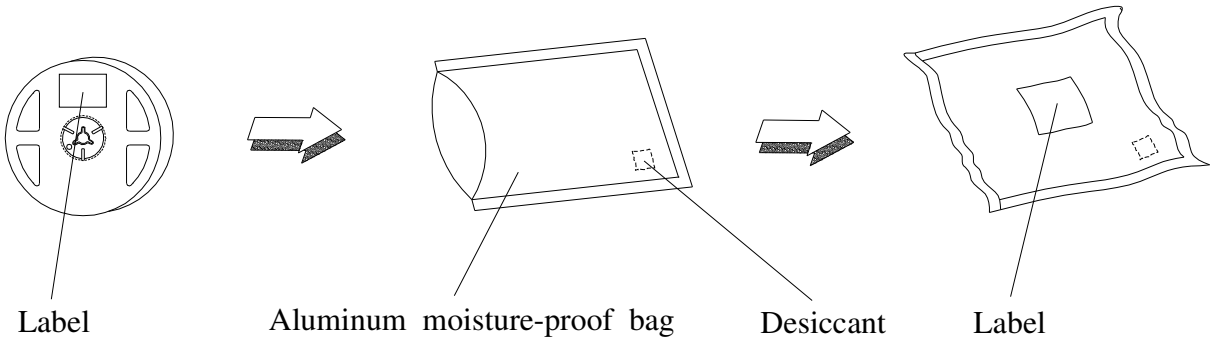
Moisture Resistant Packaging



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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.	Item	Test Conition		Test Hours/ Times	Criteria (at std. IF)
		Temp./ Humidity	IF (mA)		
1	Reflow Soldering	Temp.: 260℃±5℃ Max. 10 sec.		2 times	△Iv < ±5% △VF < ±5%
2	Thermal Cycle	-40℃ ~ 100℃ 30min. (5min.) 30min.		200 cycles	Iv > 70%, VF < 110%,
3	Thermal Shock	-40℃ ~ 100℃ 20min. (<15sec.) 20min.		200 cycles	
4	Low Temp. Storage	TA=-40℃	--	1000 hrs	
5	High Temp. Storage	TA=100℃	--	1000 hrs	
6	Temp. Humidity Storage	TA=85℃/ 85%RH	--	1000 hrs	
7	Steady State Operating Life of Low Temp.	TA=-40℃	std.	1000 hrs	
8	Steady State Operating Life Condition 1	TA=25℃/ Room Hum.	Chip Allowable Max. Current	1000 hrs	
9	Steady State Operating Life Condition 2	TA=60℃	std.	1000 hrs	
10	Steady State Operating Life of High Temp.	TA=85℃	Depend on De-rating Curve	1000 hrs	
11	Steady State Operating Life of High Humidity Heat	TA=60℃/ 90%RH	std.	1000 hrs	

※ Sampling for each test item: 22 (pcs.)

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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 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℃ or less and 90%RH or less.

   2.3 After opening the package: 2.3 After opening the package: The LED's floor life is 1 year under 30℃ or less and 60% RH or less.

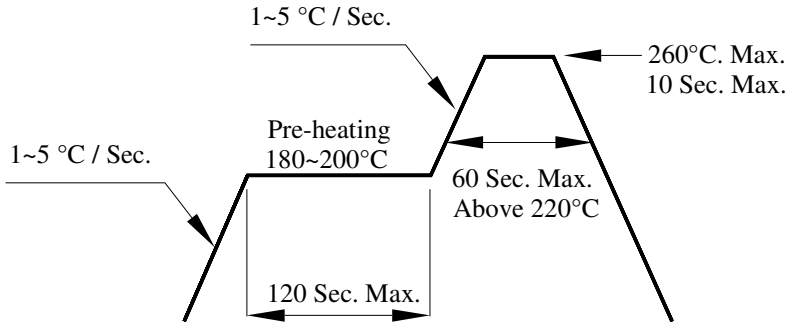
   If unused LEDs remain, it should be stored in moisture proof packages.

   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.

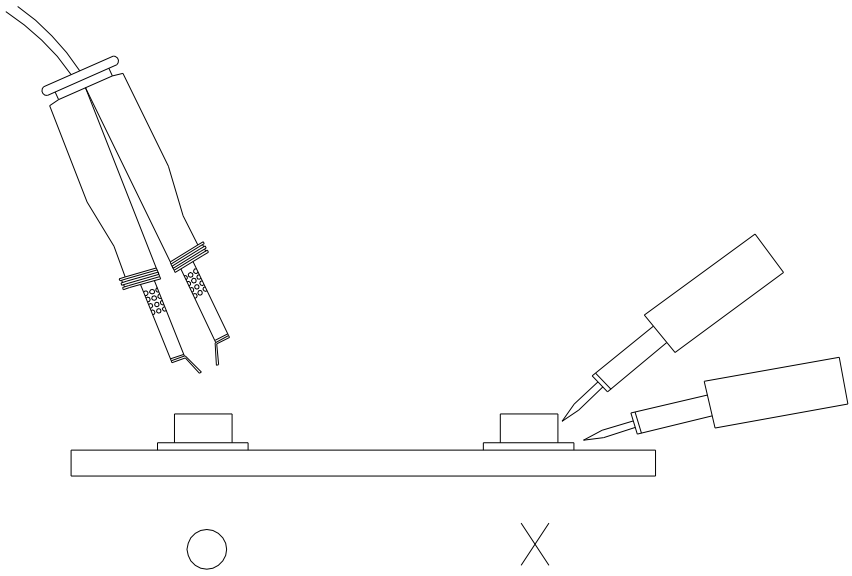
   3.4 After soldering, do not warp the circuit board.

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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